

# CHATBOT DESIGN GUIDE



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# PART 1

## WHY CREATE YOUR CHATBOT

In this Erasmus + project “Mr Winston, The True English Bot”, the project partners have created a chatbot and supporting resources to support English language learners in VET review their lessons. In practice, the partners of the project have created two tutor chatbots for levels A2 and B1, both with the same structure so that the students can start learning with Mr. Winston at A2 level, and continue with Mrs. Winston at B1 level. These chatbots will serve as examples for teachers who would, in turn, want to create their own chatbots for their lessons in English and other languages. The partners in this project wanted the development of the chatbots to be as simple as possible, so that any teacher could be inspired to create their own. This meant that the designing process would need to be done without requiring any technical skills. In this guide, we will explain in detail all the steps and provide advice and practical tips on how teachers can design their own chatbot.

Chatbots can be a motivating supporting tool and tutor for learning, drilling and reviewing the content taught in your foreign language lessons. It is a tool based on gamification principles, which has been proven to make learning more fun and motivating for students. The chatbot’s conversation with the learner and its personality are also important, as it makes it feel like a friendly tutor, helping the students practice every day and keeping them interested and motivated.



Furthermore, one of the best ways to learn a new language is by interacting with native speakers of the language we are learning. As your students may not get the opportunity to have regular conversations with native speakers in the classroom or outside of it, chatbots can simulate and maintain a certain level of conversation, which will be close to having a conversation – even if a rather simple one – with a native speaker. In that sense, the elements of artificial intelligence of chatbots make them a great tool for learning a foreign language.

Chatbots can also provide instant help and be there for the student when a teacher cannot. They can be used at any time and anywhere, which adds to the time the students spend practicing English and building up their skills. These instances of micro-learning ease the student's learning in general, as the student only needs to focus on the task for a short time, and yet this adds up in terms of practice and builds up their language skills. Due to the flexibility of use of the chatbot, the students can use it in between lessons, while on the bus, watching TV, etc. The students often end up practicing more than they realise.

Therefore, it is clear that chatbots can be very useful for language learning. But why create your own chatbot instead of using the ones already available? Creating your own chatbot ensures that you will have customised content and exercises that are suitable for your own students and classes. You know best what your students need, what kind of content they should learn and what kind of personality the chatbot should have to help them learn. It is also an exciting challenge for a language teacher to integrate artificial intelligence into their English lessons, as it can bring something new and stimulating to teaching as well as learning.

As stated in our pedagogical guide, chatbots allow adapting the content of the lessons to the speed at which each individual learns, and therefore each student can follow at their own pace

according to their potential without competing with other students. Depending on the chatbot, it is also possible to statistically predict where each student will have problems and help them with an individualised study plan or use tests to check in which areas each student needs further support. In this manner, chatbots can offer a personalised learning experience. Chatbots also increase the diversity of learning methods - AI and technological devices are being constantly improved and upgraded and many teachers could benefit from them in their classes.

Chatbots are useful for both teachers and students, as they give the teacher more time for other things and students an opportunity for more independent and flexible learning. Students can improve their levels constantly and take more responsibility for their learning process at home.

Chatbots can also be a great tool for encouraging students who struggle with learning, as it motivates them and can provide them personalised exercises and feedback based on what they need to practice more. Chatbots provide them instant feedback by giving the correct answer; they can also explain the answers and some chatbots also offer grading and tests. This saves teachers time and the learners do not feel embarrassed about their mistakes as they can practice on their own.

All in all, a chatbot can be a great, motivating and interesting tool to use in language classes and it can be a useful addition and personalised tutor for your students. You can read more about the pedagogical uses and tips for how to use the chatbot in the classroom and the background of chatbots in Mr Winston's Pedagogical Guide.

# PART 2

## HOW TO IMAGINE YOUR CHATBOT

### 1. Ask yourself the right questions

#### a. What can the chatbot be useful for?

It is important to think about how the chatbot can be useful in your classroom. Above we have mentioned several reasons why chatbots can be useful for language learning in general, but the teacher has to decide why and in what way a chatbot will benefit their own students. You have to consider the age group and language level of your students before you start creating it, as well as the purpose for which you are creating it. How would the chatbot most benefit your students and your teaching? What kind of content will be most useful for them? What kind of personality should the chatbot have to motivate and encourage them?

There will be more information for answering all these questions later in this guide, but it is important to start by considering the goals, uses and benefits of using and creating a chatbot for your students.

## b. What will the role of the chatbot be in my class?

When testing the Mr. and Mrs. Winston chatbots, students found using them motivating and exciting. But the teacher needs to think about the main purpose and role of the chatbot in their classroom. Is the chatbot only an additional tool to be used for revising and drilling content taught in class? Is it a way to motivate students to study autonomously? Will it serve as a teacher's aide and tutor for the students that they can turn to for help anytime?

It is important to know where the chatbot fits in your classroom and teaching. If you wish to only use it for drilling content taught in class or to motivate students to practice more at home, the chatbot can be a simple drilling tool with exercises and some revision of what has been learned. However, if you want it to serve as a proper tutor, it is important to focus on adding content that helps the students understand the grammar rules or use of vocabulary more thoroughly, in addition to exercises and revision.

The content you create is highly important, and so is the chatbot's personality when you think about these questions. It may be easier to create a simple chatbot with content but not much personality, but if the chatbot is too formal or cold, the students may be less motivated. By making the chatbot friendly, fun and personable, they will be more inclined to turn to the chatbot as a tutor that will help them better understand the material and practice every day. Especially when creating a chatbot that will serve as a teacher's aide and tutor, giving some time to creating the chatbot's personality is crucial.



### c. Will my chatbot contact the learners on its own?

The teacher also has to decide how proactive the chatbot should be. This depends, again, on the students. If the students tend to be active and eager to learn, it may not be necessary for the chatbot to prompt them with new content or exercises. However, it may be useful to prompt them with daily tasks – even if the tasks only take a few minutes, it motivates the students to keep using the chatbot regularly. You can also make the daily tasks a part of homework.

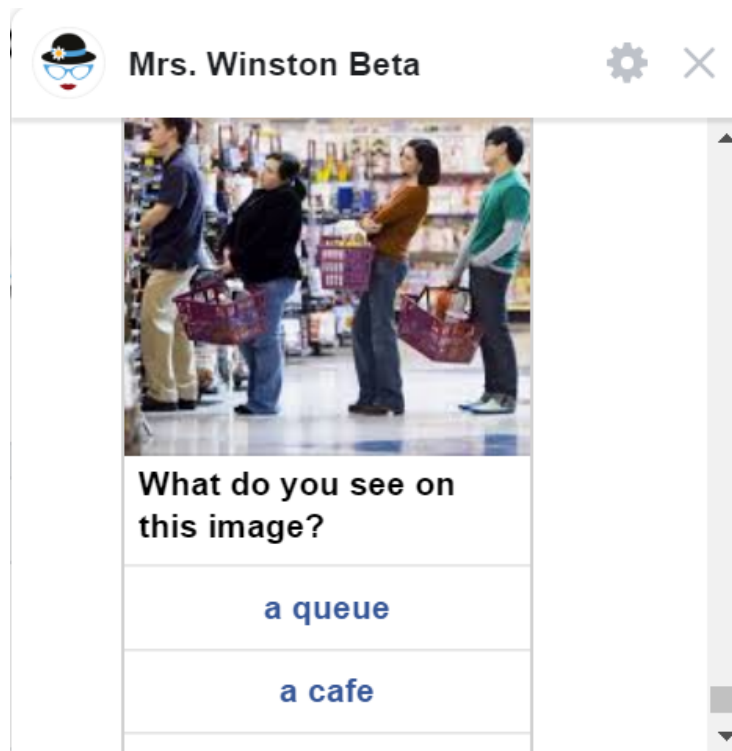
Encouragement is always important. After each daily task, Mr. and Mrs. Winston chatbots always ask “would you like to keep practicing?”. This is a good way to introduce a break instead of continuing to practice endlessly. This allows the student to feel like they have already accomplished something and have the permission to stop, but it also encourages them to continue if they are having a good time.



### d. What supporting resources do I need for my chatbot?


Just having content for the chatbot, such as grammar and vocabulary exercises, is not enough to make the chatbot interesting and engaging. You also need to have some support material, mainly to give the chatbot some personality and to make the learning more fun. You should consider the chatbot’s interaction with the students and how to make the chatbot friendly, forgiving, understanding and encouraging. You can use emojis, images, GIFs, infographics, videos etc. for this purpose.

## i. Images

Images are a good way to add some colour and humour in the comments, and they can also be used in connection with the topics discussed to make the subject matter more fun. Images can be used in the tasks themselves; they can be very useful for learning vocabulary, for example:



**Mrs. Winston Beta**  



**What do you see on this image?**

**a queue**

**a cafe**

## ii. GIFs

GIF-images are moving images that present themselves in a loop. They can be very funny and a good way to bring some humour into the chatbot, making it more interesting and fun for the user overall. GIFs can be used, for example, for encouraging the student to continue or to assure them they have done a great job:



GIFs can also be a humorous way to tell the student that they have made a mistake, and to lighten the mood:



### iii. Infographics

Infographics are images with text that contain a short, punchy and concise explanation of a language item – for example, a grammar topic. Infographics can be very useful for absorbing relevant information. They should be simple, without too many colours and a clear structure. Here you can find an example of an infographic created during our project that summarises the different uses of the present simple.

**THE USES OF THE PRESENT SIMPLE**

- HABITS**
  - He **drinks** tea at breakfast.
  - They **watch** television regularly.
- REPEATED ACTIONS**
  - We **catch** the bus every morning.
  - They **drive** to Monaco every summer.
- GENERAL TRUTHS**
  - Water **freezes** at zero degrees.
  - The Earth **revolves** around the Sun.
- INSTRUCTIONS**
  - **Open** the packet and pour the contents into hot water.
  - You **take** the No.6 bus to Watney and then the No.10 to Bedford.
- FIXED ARRANGEMENTS**
  - His mother **arrives** tomorrow.
  - Our holiday **starts** on the 26th March.
- FUTURE CONSTRUCTIONS**
  - She'll **see** you before she leaves.
  - We'll **give** it to her when she arrives.

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#### iv. Videos

Videos are also a great way to help students learn content. They can be used for many different exercise types and they offer the students audio content in addition to visual. The teacher can either add their own videos or send a link for the students to check external content.

More information about creating your resource library follows in Chapter 5 of this guide.

## 2. As an assistant for your class

Teaching in larger groups of students can be quite a challenging job for any teacher, especially considering the fact that almost no group of students is completely homogenous in knowledge. Therefore, having a special virtual assistant during the classes can make the work of a teacher a bit easier.

But it is important to know when and how to use it to be beneficial for the students as well as for the teachers. So, the question teachers should ask themselves is "If I had an assistant, what should he or she do?" or "Where do I need the most help when teaching my students?".

While answering these questions, you can decide to use the chatbot for various purposes:

1. As a resource with extra exercises for your students: when you wish to offer your students something more than just paper exercises or you feel your students will need extra exercises on some topics which you feel are more demanding;
2. As a tool for a short revision of the theoretical part: you have already covered the theoretical part in some of your previous lessons, but you feel your students need to revise it a little bit before doing practical exercise or you want them to revise theory at home. You can fill in the chatbot with short theoretical revisions or an opportunity to review theoretical material before the practical part;
3. As a tool that enables extra time for you to address students that need additional help: as a teacher you are aware that some students need more extra help and time than others; while the students are doing exercises and receiving immediate feedback from the chatbot, this will give you more time to see who needs your extra help. You will be able to

give more individual support and counselling while the others are doing the exercises individually;

4. To create a more relaxed and appealing atmosphere while learning a more demanding or a bit duller content: we all know that some learning contents are a bit more boring to some students than others;
5. For creating self-evaluation tests or quizzes: this will make doing tests fun without putting too much pressure on students because they will get immediate feedback from the chatbot without feeling exposed to the teachers or other students' judgment.

So, let us take a look at some practical examples corresponding to the above theoretical tips.

1. For creating extra exercises for students: take some time to think about the content you are teaching to your students and determine the topics which you know from experience that students will need more practice with. These types of exercises are much more demanding. Do the research about what kind of physical and online materials are already available or you are already using, and try to think what else you could add or what approach you can choose. Think about what types of exercise would be more appropriate for individual topics. For example, if you are covering vocabulary, decide what is more important to you or what students are struggling with more, how to memorize certain words or how to spell them correctly. If your priority is for students to practice memorizing, you can give them multiple choice questions where they just have to click on the correct word. For example, if they are learning about food, you can offer them short descriptions or images of fruit and then offer them three possible answers, and they have to choose the type of fruit described. If your experience shows that there are certain words that cause students troubles with spelling, create exercises where

student will have to write down the correct word themselves. This especially works well in cases where there are a lot of words with similar spelling, which encourages students to be more concentrated on the correct spelling and for example memorize the difference in spelling and meaning of words such as “than” and “then”. These exercises need to be broken down and their focus on spelling should be clearly explained for students with learning disorders as these mistakes are the ones with which they would typically experience difficulties. The chatbot would provide the proper answer and a supportive message so the student doesn’t feel ashamed for not giving the right answer.

2. For a short revision of theoretical content: since you have covered the theoretical part in detail during the class, you can use the chatbot for creating a short and clear summary of a certain content. You can use this short theoretical part as an introduction for each section but emphasize only the main parts and offer them links to additional exercises to revise the theory in detail. For example, if you wish to revise the Present Simple, you can just use short remarks, such as “do not forget to add the ending –s or –es to the verbs in sentences with third person singular.” Or you can use a different approach and ask them a question to encourage to think about the theory, such as “do you remember what happens with a verb in an affirmative sentence with third person singular? If you need a reminder, check out the following link or infographic”, and you add a link to the theoretical explanation. This can help you reduce the number of repetitions of theoretical content in the classroom and allow you to move on with your lesson.
3. A tool to provide extra time for addressing students that need additional help: no class can be completely homogenous; there will always be students that need extra help while accepting new learning content. Sometimes it can be very stressful for teachers when they see students who need more help but there is simply not enough time to offer them



extra help without falling behind with the set schedule. This is where using a chatbot as an assistant during your class can come very handy thanks to immediate feedback from the chatbot. When you see that some people are struggling with certain topics and need extra help, give all students an exercise to do in the chatbot and while those who have grasped the topic are doing the exercise and getting the feedback straight from the chatbot, you will have more time to offer individual help to students with difficulties. To create a more relaxed and appealing atmosphere: your students' faces usually clearly show when they find a certain topic extremely boring. Usually this means that their motivation for learning this certain topic is very low and you need to do something extra to motivate them. Therefore, this time the chatbot will be used as a motivating assistant during your class. Try to make these pieces of exercise more amusing than usual. Think about the topics the students could be interested in and try integrating these topics into the exercise. You can think about movies, books, music, etc. At the same time, try to use funny memes and GIFs that will help students somehow forget they are learning boring topics.

When creating quizzes and tests, make sure that the instructions are very clear and that the images and that the other tools you use are easy to use and appealing. Make sure that you provide short feedback and explanations to students in case they answer a task wrong. It is also recommended that you set up these quizzes and tests without any grading system – if you provide them explanations rather than scoring, this will give your students a feeling of just practicing, not doing tests. This will reduce their levels of stress.

### 3. As an exercise

#### a. Recommendations on the types of exercises to do with a chatbot

Naturally, the types of exercise you will use will depend on several factors, such as the topic you plan to address, the levels of your students, what you wish to achieve with the chatbot exercises, or any other similar questions.

Here are some tips that might be useful for you while producing the exercises:

1. True / false exercise: this type of exercise is very useful when we want to revise theoretical parts, but can be made much more fun using the chatbot rather than ordinary paper exercises. Since the students will not be exposed to their classmates while giving the answer, it will reduce the stress of giving wrong answers. You can for example use this type of exercise for revising English tenses. You can use a statement such as: 'We can use Present Simple for describing a habit.' and the two possible answers are either 'True' or 'False'.
2. Multiple choice exercise: useful for repeating grammar as well as vocabulary. You can decide on what level these exercises will be conducted:
  - you can give three possible answers where the correct choice is very obvious, such as the following example, the chatbot asks: "What is the name of the person who delivers mail?" and the possible answers are 'a teacher', 'a postman' and 'a butcher'. Here the correct answer is quite obvious.

- you can make these exercises a bit trickier, such as the following example: the question is 'Who cooks at the restaurant?' and the possible answers are 'a cooker', 'a cook' and 'a waiter'. Here it is a bit more difficult to determine the right answer considering that all three words are connected to catering and that the word 'cooker' and 'cook' are often confused.
3. Open answer exercise: these are a bit more challenging since the students have to give their own answers, and at the same time they need to be careful about the correct spelling. You can use this type of exercise more towards the end of an individual lesson for the final revision, since this is the time when the students should be more or less familiar with the content they have covered. So for example, if you are learning vocabulary about buildings in a town, the chatbot can ask the question 'Where can you buy some flowers?' and the students have to come up with the right answer, 'at the florist's' on their own.
  4. Spot the Odd One Out: a fun exercise, useful for revising new vocabulary, especially during the initial learning stages while we are learning in a passive manner. Again, we can make these types of exercise more straightforward, where the answer is quite obvious, or a bit more difficult. An example of a more straightforward exercise would be when you have to spot the odd one in the following sequence of words: 'a dog', 'a cat', 'a horse', 'a car', where it is quite obvious that the odd one is the word 'car', since it is the only one that is not an animal. To make this type of exercise more demanding, you can make the following sequence: 'a cat', 'a monkey', 'a cow' and 'a fish'; in this case the odd one is the word 'fish' since it is the only animal that is not a mammal. In such exercises, the chatbot needs to explain the logic behind the correct answer to make sure that the student progresses.

5. Fill in the gap: this type of exercise can be used for practicing grammar and vocabulary. You can decide whether you will give the students answers they can choose from or if they should come up with the suitable word on their own, which will make the exercise a bit more challenging. You can use the multiple choice option for the beginner's level or for the initial exercise. An example of such exercise would be to fill in the following sentence with an appropriate preposition: 'He was waiting \_\_\_\_\_ the bus station' and you give the students an option to choose among three possible answers: 'on', 'in' and 'at'. Or, you can create a more demanding exercise where they have to come up with the correct preposition on their own.
6. Transformation of sentences: more suitable for learning grammar. These are the exercises that can cause the most problems to the students so perhaps make the initial exercise a bit more straightforward. A good example of this type of exercise is learning about the passive in English. For example, you can ask your students to transform an active sentence, such as 'He took the picture' into a passive one 'The picture was taken'. You can also use this kind of exercise for practicing reported speech or to switch certain sentences into various verb tenses or similar.

## **b. How to adapt existing exercises with your chatbot**

During your teaching experience you have probably gathered a lot of useful material for practicing and surely a majority of this material could be transformed into an exercise in a chatbot. But you need to follow some tips to make the existing material suitable for the chatbot use. You will find some of them below.

1. The first thing you need to think about before you start adapting the exercise is what you wish to achieve with it and how you will best achieve your objectives.
2. Since you wish to encourage independent learning among your students at school, but also at home, make sure that the instructions before each exercise are clear and written in appropriate level of English for all students to understand. Make short sentences and try to show the instruction to an independent reader before you post it, just to make sure that the text with instructions is clear to other people, not just to you.
3. It is very useful if you write a very short reminder about the theory before each set of exercise and perhaps also add a link to additional explanation which the students can check before they start doing the exercise. You can write something like this: 'Put the following sentences into Present Simple or Present Continuous. Do not forget, Present Simple is used for repetitive actions, while Present Continuous is used to talk about things that are happening at the moment of speaking. To learn more, click on the following link...'
4. Avoid long exercises: make them short and clear; this way you will avoid any misunderstanding and doubts about solving them.
5. Do not forget that the chatbot must give immediate feedback to your students. When creating your answers, make sure that you take into consideration all possible correct answers to a certain exercise. For example, if you are practicing Will Future, do not forget that students can write their answers in full form, 'will come' or in abbreviated form, 'll come'. If you decide that you wish students to give full forms only, make this clear in the instructions before each set of exercise.

6. Make sure that the students will have the possibility to find more explanations and additional exercises at the end of each set of exercise. For example, you can invite them to do more exercises with a motivating sentence such as 'Great! I'm having a good time working with you? Shall we keep on going with other exercises? '
7. Transform the exercise into games: use fun texts and sentences when creating an exercise. Try to think about what topics would interest a certain group of your students and involve them in your exercise. For example, if you are teaching at a vocational school for tourism, try to involve the topic of travelling in the exercise. This will be more fun for students and give them greater motivation to use the chatbot. One example would be to encourage them to practice "going to" for the future by filling in sentences in connection to planning their holidays.
8. Try to create conversations between students and the chatbot, which will give the students a feeling of natural communication with a native speaker. For example, you can add a greeting message before a set of exercise and ask the student 'how are you today? ' and give the student an opportunity to answer.
9. Use emojis, GIFs and memes between exercises to make them more attractive and fun. Be careful that all these features are kind and encouraging and not offensive and judgmental. So use features that are saying to a student 'you will do better next time' and not those saying 'oh no, you are wrong again' when he or she gets an answer wrong.

# PART 3

## CHATBOT DESIGN

### 1. The architecture of the chatbot

#### a. Why do you need to think about an architecture?

It allows you to keep track of where you are going

As in any long creative task, the risk of getting lost in the development of one's idea is important. A writer always needs to write down the sequence of their script in order to refer to it and to avoid inconsistencies during the writing process.

When you are working on the writing and programming of the chatbot, it will be more complicated for you to take a step back and analyse the relevance of your scenario development.

A roadmap will make your work easier: it is useful in several situations, examples of which are given below.



## To give you a summary of your roadmap

It is important to have a summary of your roadmap for several reasons.

First, having a general overview of your chatbot will make it easier for you to define how to test it and how to provide your testers with precise scenarios to cover all the chatbot's functions.

Testing is an essential part of creating a chatbot because it allows you to get a sense of the quality of your work, so it is important that it is done well.

Finally, it may be necessary for you to promote your tool after its creation so that your colleagues, friends or superiors can understand it and adhere to its use. A roadmap is a support that will allow your promotion to be much more understandable than a handwritten summary or a complete chart of the architecture of your chatbot.

## To be able to check and change things swiftly

You will receive feedback as people use your chatbot. Sometimes the error they signal and its cause can lie in elements that are far from one another in the overall architecture of your chatbot. Having a clear roadmap will help reduce the hassle of debugging.

## To transfer it easily to others

It is possible that you are not the only one working on the creation of the chatbot, or that when you change jobs or responsibilities, other people may have to work on it. Knowing where to add a lesson, how to modify a spelling mistake and other simple modifications can become very complex for an external person. This guide is useful to understand how the platform works and to help you build your bot; however, it will not help another person understand how you have organized it. Be nice to your colleagues and simplify their lives by making a clear and readable roadmap!

## b. How to design the architecture of your chatbot

### Get acquainted with sequential logic

As mentioned above, structuring your architecture is paramount. We recommend one way of doing it, but do not hesitate to adapt it to suit your needs.

Chatbots follow a very simple principle: if a condition is met, then an action is initiated. This is called sequential logic.

This operation is useful to simplify a behaviour, here are some examples from everyday life:

- when you turn on the switch, it turns the light on,
- when you turn on your hotplate, your pan gets warm,
- if you are at a pedestrian crossing and you see no car approaching, you cross the road.

Thanks to this type of logic, we will be able to map the chatbot's reactions according to the interactions it has with the user.

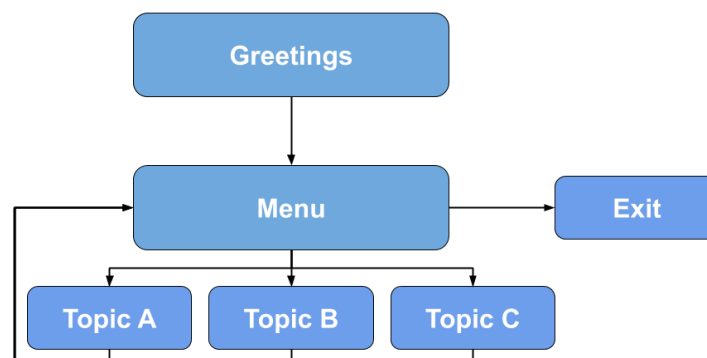
## Think global before getting into details

It is important to work in a funnel: start by identifying the different major stages of your tool.

These blocks allow you to clearly define a user's path and how he or she will be able to access a certain module while avoiding getting caught up in loops or inconsistencies.

### Here is an example:

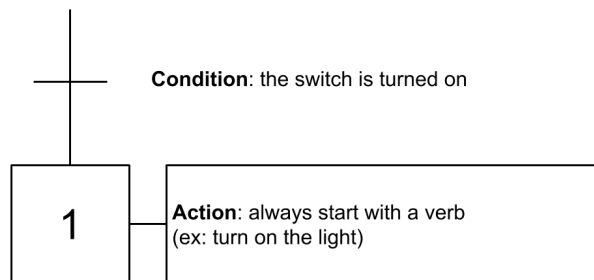
We want to define a chatbot to provide lesson material on 3 different topics. To do this, the student opens a conversation with the chatbot. After a cordial greeting, the user will have to choose one of the three themes for the chatbot to provide the intended assistance or provide them with the option to leave the conversation.



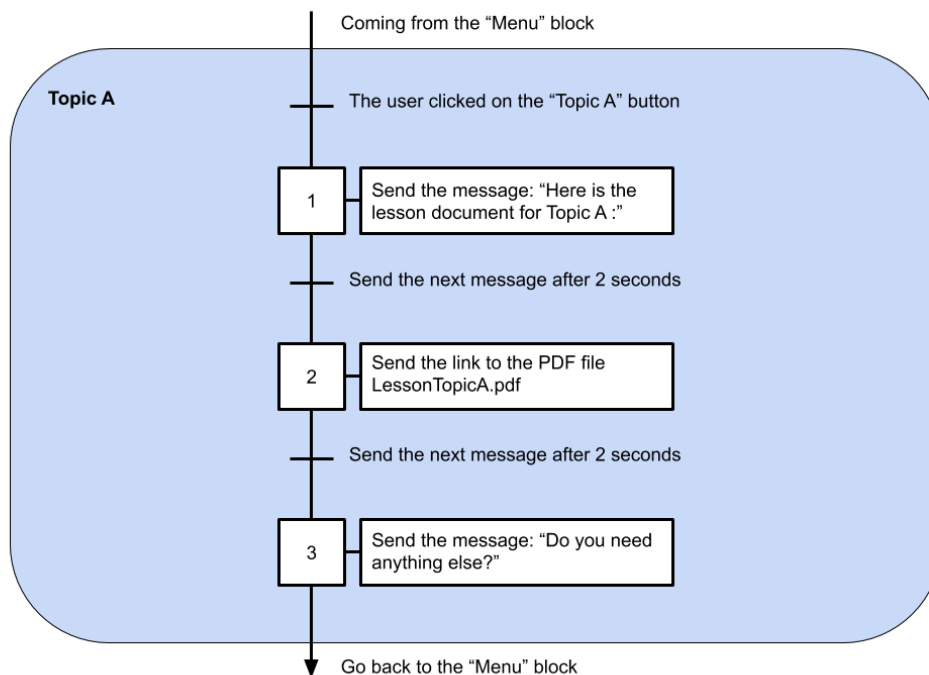
It is not necessary to detail what kind of support the user receives on the selected topic. For the moment we are limiting ourselves to the global definition of the user experience.

## How to define an action

Once the blocks have been identified, we can start thinking about the conversation between the user and the chatbot. The sequence will be composed of 2 different elements: the actions and the conditions. Here is how we will identify them afterwards:



Let's go back to our previous example and detail the "Topic A" block:

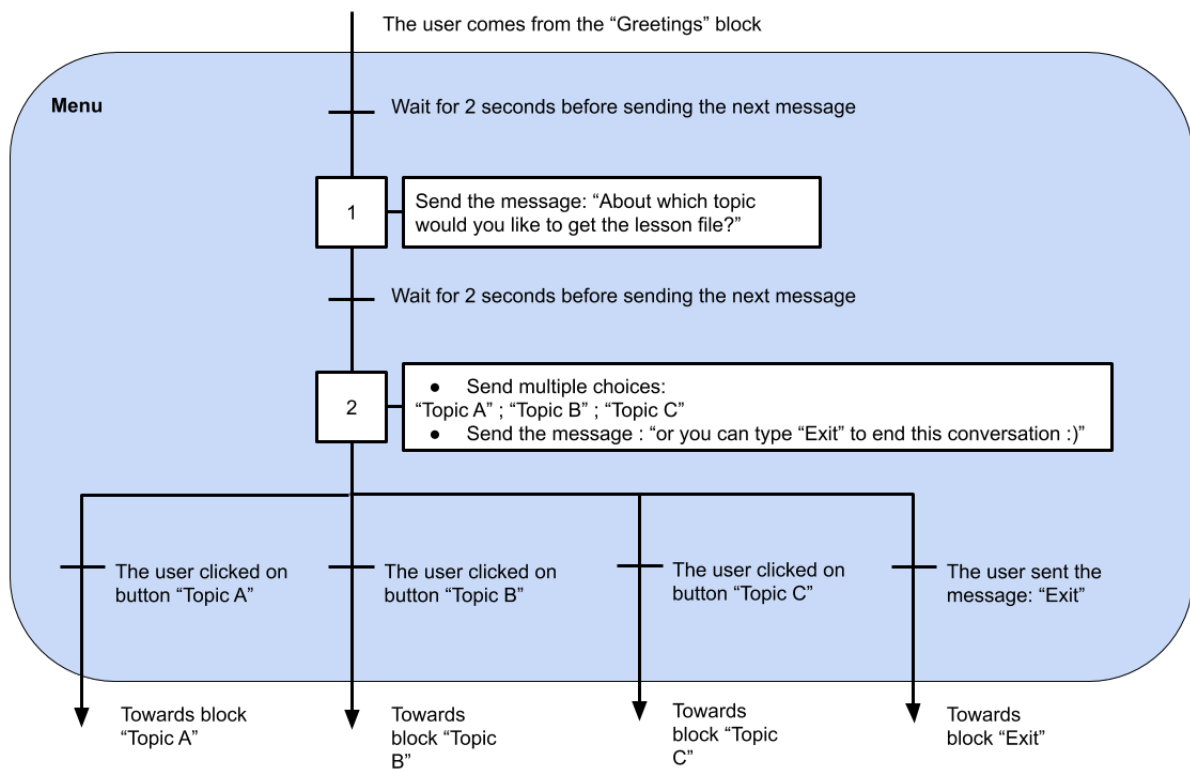


## Think about questions with several options or exits

In many cases, your chatbot will propose several possible "exits" to the user. Here are some examples:

- An exercise: depending on the answer (correct or incorrect) chosen by the user, the chatbot will send a different answer,
- An open question in a FAQ that will guide the user according to the keyword they will give,
- A selection menu where the user will be directed to different blocks or chapters according to their choice.

Here is an application to our case:



## Think about different possible answers

Sometimes the user may make mistakes when typing his message that we can anticipate. It is necessary to take this into account and to plan several possible answers to be typed by the users and understood or processed by the chatbot. In the previous example, instead of typing “Exit”, the user could have typed “eixt” or “exti”. Try and plan several options and possibilities when you design your chatbot.

## 2. How to create an FAQ

The FAQ section of a website is a repository of questions which get asked over and over again. However, some designers also use the concept to pose questions that would be useful to answer questions that frequently get asked. If you are a teacher, you may want to build such a section to consolidate learning or to provoke new interest in a particular topic. As a designer of the section, you are the author of both question and answer, so this gives you a further control over the material to which your students are exposed. Mr. Winston is a sophisticated OER so if you are not technically savvy, the idea of programming content may appear daunting. However, what might seem initially complex can be broken down into bite-size chunks. The following is a simple guide to help fully exploit the functions of the chatbot in relation to creating an FAQ.

### a. Define your criteria

Keeping in mind that the purpose of creating an FAQ is to help learners remember what they have learned over time, or to provoke new interest, it is important that you choose the most relevant and straightforward questions relating to your topic. For students with SLDs, also bear in mind the appropriate content so as not to give too much information at once. A question like “what is a preposition?” serves well because it relates to an important area of grammar which most learners would need to understand. It would also be fairly easy to populate the section with appropriate answers and examples. However, ‘what is the past tense of must?’ would be more like a trick question with an array of different answers, depending on whether the modal is being used for obligation or deduction, so best avoided. Other good examples would be ‘what is the past participle of burn?’, ‘what is the difference between wish and hope?’ And ‘what is the passive?’



## b. How to create content

As previously mentioned, the FAQs section can serve two purposes. Traditionally, it would be to review work previously covered, but it can also be used to stimulate interest in other topics and to raise important questions that perhaps have not been formally raised before. A review of the syllabus or record of work is a good place to start because the FAQs can then be sequenced accordingly. If you started an A2 term by contrasting the present perfect with the past simple, an obvious first question is 'what's the difference between the past simple and the present perfect?'. Although some of it may seem repetitious at times, repeated exposure to new language concepts benefits all learners, but especially those with Specific Learning Disorders.

FAQs can also be used to stimulate interest in topics not yet studied or in recycling points which should be consolidated by now, but which still cause errors. So-called fossilised errors can be uprooted by well-placed questions. A random question like 'is the verb listen transitive?' or 'what type of verb can't be used after would for repeated action in the past?' can serve to burrow down into the student's subconscious and provoke new learning.

To enhance the display, you can use an image creation program like Canva for example, to make infographics that contain frequently asked questions relating to a specific topic. If you are creating content for students with learning disorders, be sure to adapt the content in a way that supports their needs. Typically, all text should align to the left, all explanations of grammar and syntax should be very clear and straightforward, use visuals wherever possible, and use 1.5 line spacing and an adapted font like Arial or Open Sans. Colours should be easily distinguishable from each other to emphasize differences, or alternatively using bold font rather than italics

works as well. Breaking down important information into bullet points also helps to clearly present the most relevant information.

### c. Example of the architecture of an FAQ

The architecture of this section was designed to be instantly clear and engaging. The initial experience the user has is of an infographic with a blend of black, white and blue background and carefully spaced lettering to provide maximum impact. This provides a simple, punchy explanation for a language item. It is specifically concise because the images cannot sensibly support too much verbiage. Following this first contact with the language item concerned the user is exposed to another infographic which offers examples of how this item is used; care has been taken here to present the item in typical, everyday contexts and to give supplementary 'Remember' tips where applicable.

**PREPOSITIONS**

**WHAT IS A PREPOSITION?**  
Prepositions are words which connect the people, objects, time and locations of a sentence.

**TYPES OF PREPOSITIONS**

- Prepositions of Time**  
Relating to the times that actions take place.
- Prepositions of Place**  
Prepositions which allow us to describe specific locations.
- Prepositions of Direction**  
Prepositions relating to directions of travel or movement.
- Prepositions of Agent**  
Prepositions relating to a person that carried out an action.
- Prepositions of Instrument**  
Prepositions relating to the item or tool through which an action is carried out.
- Prepositions of Phrase**  
Prepositions relating to phrases.

**REMEMBER!**  
Prepositions are often followed by **nouns, noun phrases, pronouns** or **verbs ending in -ing.**

**When are they used?**   
To link nouns, pronouns, or phrases to other words within a sentence.

**EXAMPLES OF PREPOSITIONS**

**Prepositions of Time**  
I'll be there **in** January.  
His show is **on** Monday.  
We are going **at** 7 o'clock.

**Prepositions of Place**  
I am **at** home.  
He is **on** the bus.  
We are **in** London.  
You are **under** a tree.

**Prepositions of Direction**  
I am going **to** school.  
He is walking **towards** the bus stop.  
We are running **through** the park.

**Prepositions of Agent**  
I was welcomed **by** them.  
It was written **by** Shakespeare.  
We are going **with** our friends.

**Prepositions of Instrument**  
I cut onions **with** the knife.  
He goes to work **by** train.  
The oven is **on** a low heat.

**Prepositions of Phrase**  
According **to** this book...  
The house is **under** construction.  
It is **with** regret that...  
She got her dog **at** the age of ten.

Do keep in mind that the FAQ images should not be so crowded that it is difficult to read; the layout should be arranged in a way where the learner can easily see and understand the different explanations. Especially for learners with Specific Learning Disabilities (SLDs), the layout is especially important to ensure that it is not too visually overwhelming.

### 3. How to create Daily Tasks

As a reminder, daily tasks are sets of tasks that the bot recommends to learners every day. They serve as reminders for learners to review something they have already learned with the goal of implementing “interval learning,” or spaced repetition over time. If the learner feels that they need a review, they are able to indicate that they would like to ask a question.

#### a. Define your criteria

Defining the criteria for your daily tasks centres around the broad topics you would like your students to learn about. You will first of all need to consider your students’ language level, then choose language focuses that are appropriate to that level. Practicing grammar is great, but teaching the simple future would not be useful in an advanced class, for example. You may choose to include more than one language level in your chatbot if you have a variation of levels and want to ensure that all of your students are doing daily tasks that are neither too easy nor too difficult for them to do.

Next, you will need to consider all the different aspects of language that you want the students to practice; it may be grammar, vocabulary, spelling, or anything else that can be learned through writing. It may be helpful to refer to Common European Framework of Reference

(CEFR) and see what is typically taught at your students' levels, then base your criteria on what you feel best suits your students' needs.

Within those broad aspects of language learning, you will then choose appropriate sub-topics that match the language level of the students. Here, it is also important to consider their purpose in using your chatbot. Are they business people needing to practice common phrases in English? Are they young foreign students at a summer camp, in need of basic skills? For example, an appropriate sub-topic within a “vocabulary” section for B2 level business English students may be something like “marketing.”

## **b. How to create content**

Once your criteria have been defined according to your students' needs, you may begin creating your daily exercise content. To start with we suggest that you first create a spreadsheet so you are able to keep track of your language focus, topics, questions, instructions for the learner, answer choices (if creating multiple choice questions), correct answers, chatbot responses for correct and incorrect answers, language levels, and if you so choose, the grammar points that each question addresses. This will give you an overview of all your daily task content so you can plainly see that your topics and subtopics have an even distribution so one particular topic is not addressed more or less than another.

When creating the chatbot responses for correct or incorrect answers, be sure to remain encouraging, even if an answer is incorrect. Especially for students with SLDs, positive reinforcement benefits learners when studying a language.

Since daily tasks are intended to be quick reviews of content the students have already learned about, be sure that your students are familiar with the language focus when creating questions. Do not create activities to test their knowledge of the second conditional if they have only ever studied the first, for example. It is important to create questions that are neither too easy nor too difficult for your students' levels.

It is very important to bear in mind that there are character limits to your content while using Chatfuel. The number of characters (including spaces) you may use in text blocks to ask questions or give directions is 640, and if you choose to create multiple choice questions, each option may only contain 20 characters (spaces included) with a limit of 3 buttons or 11 "quick replies." Checking your character count and response limits before attempting to integrate your daily tasks will save you time in the long run rather than realizing too late that you are over the limit. You can do this by creating a column in your spreadsheet and if you are using Microsoft Excel, using the function "`=LEN(cell)`", the (cell) part being the cell whose characters you need counted. This will ensure that all your content will fit into the chatbot properly, otherwise you will spend lots of time editing the exercises you have already created and it could then lessen their quality.

### c. Example of the architecture for daily tasks

Once you are ready to integrate your content into the chatbot, you will have to think about the structure of the content. You should already have a clear layout, using a spreadsheet program, for example, of everything you intend to include. It should be arranged in a way that has a logical sequence; greetings, options for what the user wants to do, directions, questions, answers for correct and incorrect responses, and so on.

You have the option of making questions either multiple choice or open-ended, where the student has to type the answer him or herself. This allows for a range of question types; multiple choice questions can give the students options of which answer (out of 5 choices, for example) is correct, or you can choose to do true/false questions in the same manner. It is recommended that you give users three choices purely for aesthetic reasons; the use of buttons rather than quick replies has a cleaner appearance.

Open-ended questions also come with a number of possibilities and things to be aware of. This function allows for different types of questions, such as purely open-ended (ex. “what verb tense is used to talk about something that started in the past and continues to this day?”) or gap-fill (ex. “I have never \_\_\_\_\_ that many cows in one place before”). But, please note that the chatbot will only recognize the exact answer that it is expecting, otherwise the learner will receive the “incorrect answer” response. This means two things: first, that you must choose questions that only have one definitive answer, and second, that you must pre-emptively think of and integrate all possible responses, or else the chatbot will not recognize it. For example, the sentence “She \_\_\_\_\_ apples” is not good because there are far too many possibilities of correct answers. Keep the open-ended or gap-fill questions more niche in a sense. The example question “what verb

tense is used to talk about something that started in the past and continues to this day?” only has one correct answer, the present perfect, so there is no room for confusion. For questions with more than one possible correct answer, such as “Give me a synonym for the word ‘happy’” be sure to include all possible answers: content, pleased, glad, and so on.

The chatbot will automatically send a correct or incorrect feedback message and at the end of the message you can install a question to ask if learners want to practice more, get more explanation or see more examples of the target language example.



## 4. How to create exercises

The exercises are more extensive than the daily tasks and are meant to give the students a series of questions on a particular topic. Exercises differ from daily tasks in that they are longer and are selected by the student from the menu. However, they share the same function of immediate feedback on correct or incorrect answers and the reasoning behind it. Whether answers are correct or not the chatbot will offer students the opportunity of repeating the corresponding lesson again. The exercises are not intended to be done daily, as they are more extensive, and learners may become overwhelmed doing such exercises every day.

### a. Define your criteria

This is a similar process for the daily tasks; you will need to keep in mind your students' language level, age group and purpose for learning.

Because these exercises are based on topics, it is worth considering what type of topics either fit well with the material the students are covering or which would act as a useful aside. Some of the most frequently occurring topics are food, shopping, holidays, clothes and animals. All these topics work well for most ages and levels. However, some topics naturally exclude some learners because of age or cultural and/or religious considerations. Examples of more specialised topics would be business travel, accountancy, literature, religious festivals and nightlife. You can also decide to construct topics from metalanguage where grammar items or pronunciation ideas are explored, for example, collocations, prepositions, or adverbs.

Once a broad topic theme is chosen you can play around with its scope to best fit your objectives. Choosing the topic of food is a great idea because it stimulates a lot of interest.

However, where do you start and where do you finish? The topic of food has apparently no limit. A solution is to streamline the topic heading. For example, tropical fruit, white meat, fish. Or, in the case of metalanguage topics, you could choose prepositions for movement, stative verbs, or collocations for crime.

In line with a gradual move to personalised learning, these topics can be created to relate solely to a particular class or group. A gathered list of errors committed over a semester can form the basis of a 'Common Errors' topic, or in the case of monolingual groups, this can be extended to typical errors of speakers with a certain native language. Such a list would help you to tailor the content of your chatbot to the class or program, or to improve it over time. Such a list would help you to tailor the content of your chatbot to your class or program, or to improve it over time.

Such a list would help you tailor the content of your chatbot to your class or program, or to improve it over time.

## b. How to create content

To create content for your exercises, it is again suggested that you create a spreadsheet to keep close track of language focus, topics, type of question (multiple choice, gap fill, etc.), instructions for the learner, the exercises themselves, correct/incorrect answer responses from the chatbot, and grammar focus.

The exercise content should be designed in a way that gets learners thinking; it should not be a review, but rather a challenging set of questions for their language level that will prompt them to think deeply about a subject. As mentioned, the chatbot will give feedback to learners who have struggled with the exercise. As with all these sections, the question will have to be unambiguous and so will the answer, unless there is space for a clarification. Usually the clearer the question and answer, the better. Although English and countless other languages have many grey areas and exceptions to rules, it is better to avoid such complications and save the nuances for dictionaries.

Another consideration is the potential richness of a topic. Food, for example, does not have to be a simple labelling of food items. It could include adjectives of taste: “sweet, salty, spicy, sharp, bitter”. In a topic list about fruit you could include questions like ‘what adjective describes the taste of a lemon?’, ‘when a banana is green, is it ripe or unripe?’ or ‘name a type of berry’. Overall, you want to keep the questions interesting and varied as not to lose the interest of the learner.

## c. Example of the architecture for exercises

Once you have all your exercises questions, answers, and responses ready, you can begin integrating them into the chatbot. You will follow the same process you did for daily tasks; the only difference being, the exercises are longer than the tasks, so you want to be able to give your learner some feedback and opportunity for further learning if they answer the exercises incorrectly.

To be able to provide feedback, you can make it so that your chatbot responds with an explanation of what the user has got incorrect. For example, in an exercise on the present continuous, the “incorrect” response from the chatbot can provide a link to a website that explains it in depth, a FAQ image you have created, or a simple reminder using text (‘remember, we do not use the present continuous with facts’). Consider which method of feedback best suits your learners; for advanced learners, a simple reminder will do, but for lower level students or those with SLDs, it may be worth linking their incorrect answer with a review of a lesson they have already gone through, as repetition is key in language learning.

## 5. How to create a resource library

While creating chatbot material and accompanying material, you can use various resources depending on what area you wish to cover, whether the main focus is doing exercises, revising, receiving further information and more.

So let us try to clarify which resources you can use for what:

- **Images:** for making the exercises more visually appealing and colourful, which will produce higher motivation for learning.
- **GIFs:** for congratulating and motivating students during their work or to gently remind them when they made a mistake and encourage them to revise more.
- **PDF documents:** for additional lessons for students, available for them when they need to revise theory or do some more exercises in paper form. They can read PDFs online or print them out and do the exercise on paper. Use them sparsely as you do not want your chatbot to become a mere distributor of long PDF files, as it would make it less about micro-learning.
- **Infographics:** for providing short summaries of certain lessons in a very concise and clear manner.
- **Videos:** for providing more audio-visual materials for further explanations of individual topics.

## a. Images

### i. Criteria to bear in mind

When choosing images for the chatbot, make sure that you either use the material you created yourself or to use images that are free –to use.

For example, if you are using Google for searching for images, you have to use the advanced search filter located under the main search bar and choose Advanced Image Search. In the section 'Usage Rights' you can choose from the following options:

- Free to use or share: you can use these images if you leave them unchanged
- Free to use, share or modify: you can copy, redistribute or even modify these images.

Of course, there are also several websites that offer numerous images you can use, for example Pixabay.com, Unsplash.com, Pexels.com and other similar sites.

One other important criterion you should bear in mind is that the images are not offensive and do not express violence, racism, or any kind of hate speech. Naturally, they correspond to the topic you are covering.

### ii. Content creation

Every individual has her or his own methods when creating teaching content. Thus, it is up to you if you decide to create the written part of the material for all topics first and then search for suitable images, finish an individual lesson and then search for the material or write individual parts of the lessons and simultaneously search for the images. You will probably find the method that fits you perfectly at the beginning of the creation process.

Whichever method you choose, bear in mind that the images should correspond to the topic and should be attractive and stimulate the users' desire to learn.

You can choose pictures you have taken with your camera or use some online tools to produce unique images, for example Canva ([www.canva.com](http://www.canva.com)), PowerPoint, Picasso or something similar.

## b. GIFs

### i. Criteria to bear in mind

There is a vast diversity of different GIFs circling the net and it should not be difficult to find some suitable for adding to your exercise. The most important thing you should bear in mind is to choose GIFs that are not offensive or contain bad language, because the last thing you want to do is offend your students or even discourage them from learning.

Think about where you will use GIFs. You can use them if you wish to congratulate your students when they get the correct answer. You can use GIFs stating 'Good job', 'Well done', 'You rock' and many more. At the same time, you can also use them when they get an answer wrong and you want to encourage them to try again or to study a bit more. In such cases you have to pay a special attention to choosing GIFs that will not create the opposite effect you wish to achieve. Avoid GIFs containing offensive language, such as 'Are you stupid or something' and rather use the ones containing text like 'No worries, try again' or something similar.

### ii. Content creation

You can decide between using already existent GIFs you can find on the net, or you can choose to create your own GIFs. You can use several websites to do both, probably the most popular being Giphy.com. Just simply decide what you wish to state or achieve with the GIF and then



use the search bar, write down the key word and choose among various GIFs. For example, if you wish to congratulate somebody on getting an answer right, simply write 'good job' in the search bar and corresponding GIFs will appear. Afterwards just save them to your computer and add them to the chatbot.

You can even use Google Image Search: use 'Search Tools' the search bar, choose 'Any Type' and then choose 'Animated' and a pallet of GIFs to choose from will appear.

If you decide to create your own GIFs, you will most probably have to register on the website you will use. This is the case if you wish to use Giphy.com. After you register you can for example choose from an existent image on your computer and add different animated elements to it, such as text, images and similar. You can even trim your video into a GIF and add stickers and captions to it.

## c. Infographics

### i. Criteria to bear in mind

We can use infographics for a fast revision of theory which students can use before they start doing a certain set of exercises or when they come across a topic that is causing them difficulties. Basically, the infographics have to be very clear and the information has to be broken down into small chunks.

The function of an infographic is not to offer detailed theoretical facts, but rather to offer a short and clear overview of a topic which reminds the students of the theory they are already supposed to know. It also serves to encourage them to use other, more detailed resources to study more if they realise that they do not know enough yet.

## ii. Content creation

It probably makes more sense if you start creating individual infographics once you have finished with the creation of the exercises because then you will have a clearer insight of what you wish to emphasise for your students. To make infographics more attractive, use online tools. A good example of it is Canva ([www.canva.com](http://www.canva.com)) where you can create very appealing materials. Make sure that the infographics offer your students clear and short information and try to avoid more detailed explanations, rather offer additional links to them.

## d. Videos

### i. Criteria to bear in mind

If you wish to offer your students a different, more visual way of acquiring information, offering video content is a good idea. Just make sure that you check out the entire videos before posting them in order to make sure that the level of the content is suitable for your students. It could get a bit tricky if you offer your students some videos with tips on how to use Present Simple, but the use of the language in the video is on such a high level that your students will not be able to understand it. At the same time, thanks to ease of access in uploading various materials on certain websites, also pay attention to whether the material offered is correct and appropriate and contains no false or inappropriate information.

### ii. Content creation

Again, you can choose if you are going to create your own videos or use the existing ones. There is a great variety of videos with theoretical explanation on numerous websites, including YouTube, so the decision about what to use can sometimes be quite difficult.

If you decide to create your videos, be careful about the quality of the recorded material and about the level of language used.

# PART 4

## HOW TO CREATE YOUR CHATBOT

### 1. An example of a platform: Chatfuel

#### a. Presentation of Chatfuel

Chatfuel is a chatbot creation platform for Facebook's Messenger application. It represents almost half of the chatbots existing on this messaging platform.

#### b. Analysis of Chatfuel's advantages

In our analysis of the various existing platforms, we looked for the one that would best fit the needs of teachers.



##### Ease of use without particular technical skills

Few educational organisations will be able to spare the staff resources with complementary skills for creating a chatbot. This is why we have chosen to base our tool search on the lowest possible level of technical competence.



### User friendliness of the platform

Even if a tool does not require technical skills to be used, the design of the platform can greatly influence the ease of use. That is why this criterion seemed important to us so that the design of the Human Machine Interface (HMI) would not hinder the motivation of the chatbot creators that you will soon be!



### Limited costs

Organisations that may be interested in creating a chatbot have a financial capacity that can range from a large budget to no budget at all. As for technical competence, we have chosen to orient this guide towards a tool that would allow us to accompany the greatest number of teaching organisations. Considering that "who can do the most can do the least", we wanted the tool described in this guide to offer the possibility of creating a complete chatbot even with its free plan.



### Sufficient level of flexibility

As detailed in our "Booklet on Chatbots in Education", up until now chatbots have been mainly used for commercial purposes or simply to direct a user to different parts of a website.

Our use of this technology is innovative because we use Mr. and Mrs. Winston to tutor students during their learning and reviewing processes: answering questions related to the course, providing pictures or exercises, etc.

Chatfuel offered us a complete range of functions to develop our chatbots:

- It can send reminders to users for daily tasks and exercises
- use of gifs to make conversation more enjoyable
- the displaying of a timer to simulate the time it takes for the chatbot to "type" its text and to make the user experience more natural.

Chatfuel is mainly intended for creating chatbots for Facebook Messenger, but it also allows the creation of a chatbot to be displayed a website. The fact that it only works on Messenger can restrict the access to the chatbot depending on the targeted user groups: this should be considered during the creation of your project. During the field-testing phase of the chatbots, we realised that some students did not have a Facebook account and it made them less willing to try and use the chatbot regularly. On the other hand, since this tool is dedicated to a single platform, the result is stable and reliable.

### c. Other existing platforms

This guide deals with creating a chatbot only with Chatfuel. However, there are other platforms for creating chatbots. Here is a non-exhaustive list:



This software allows the creation of a chatbot on different platforms: Facebook (Messenger), WhatsApp, by SMS or directly on a website thanks to an integrable module (called API). Just like Chatfuel, it also integrates statistics on the use of the chatbot. Unfortunately, the offers do not correspond to our needs: the price seems too high for most of educational organisations while the free trial version only lasted for a short time at the time of writing.

Flow XO allows the creation of chatbots on a wider range of platforms such as Slack, Twilio or Telegram. However, at the time of writing it seemed rather complex to use for non-technical experts.



The previous version of MobileMonkey was named ChattyPeople. This software has the particularity of offering several predefined bot structures, but they are generally intended for commercial purposes, in the sense that it is aimed at providing advice on purchasing articles.



Tutorbot is a chatbot creation platform that is under development as part of the “Tutorbot for VET” Erasmus + project (2018-1-FR01-KA202-048229). The goal of the project is to give trainers the tools to create their own chatbot in the form of a chatbot creator platform, but also 4 different chatbots, filled with content and connected to the learning outcomes of the VET centres involved in the project, as well as a chatbot design guide and a chatbot creation training module to support trainers and VET organisations in developing their own chatbots.

While the initial structure of Mr. and Mrs. Winston developed on Chatfuel could be summarised as an elaborate giant decision tree, Tutorbot is a tool that processes the natural language of a learner. In other words, the learner types a question about their course, Tutorbot analyses the intent of the user and answers with the most appropriate element it can find from the data it has been fed by chatbot creators, or teachers. For example, if a learner asks “what is the present

simple?”, the chatbot could send them a lesson, an infographic, a text summary, videos or other types of content to choose from according to the material that the teacher provided.

## 2. How does Chatfuel work?

### a. Key features for an educational application

#### i. Automation

The main functionality to use when creating an educational chatbot will be the Automation Tab. It allows you to create the structure of your chatbot and to integrate your content for a smooth user and designer experience.

Here, you will discover its different features and structure:

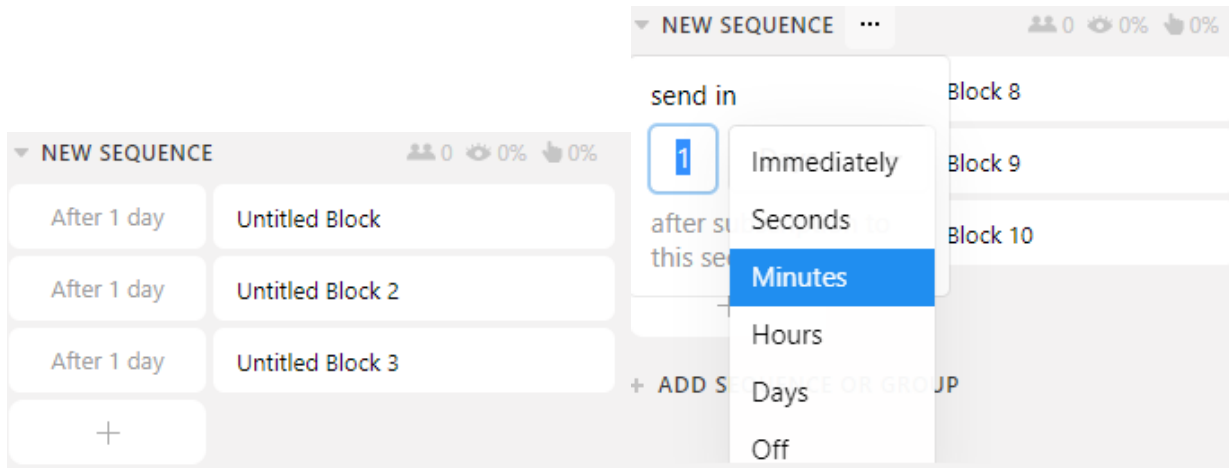
#### Sequences and Groups:

Before integrating your content, you will need to decide whether you want it to be sent through regular reminders or if you just want the user to be able to access it by typing a specific command or through the main menu.

Once you have made that decision you can create different sequences or groups in which you will integrate your content.

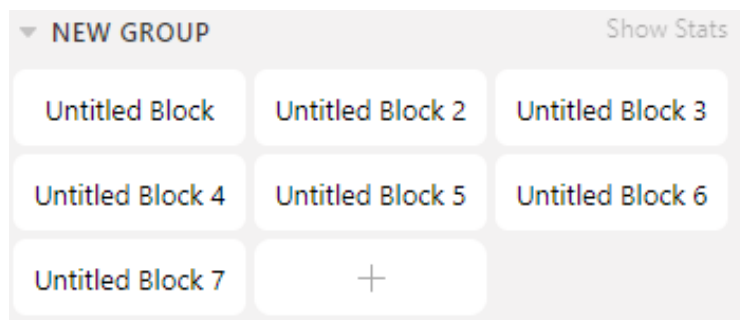
Choose a **Sequence** to set the gap between your messages in seconds, minutes, hours or even days. In Mr. and Mrs. Winston, we decided to use this feature to send the users some daily tasks to revise important grammar or vocabulary points. If you decide to do this, make sure the content you send is engaging and short though, as the users will receive it every day.





Screenshots on Chatfuel.com

Choose a **Group** when you want the users to access the content whenever they want by either typing a specific command or using the main menu. This is the feature that we used when creating Automatic messages, exercises and FAQs in Mr. and Mrs. Winston.

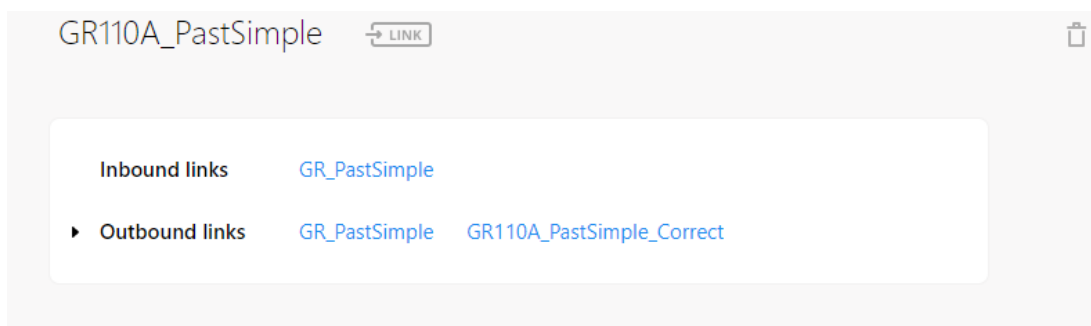


Screenshot on Chatfuel.com

## Blocks

Once you have created your sequences and groups, the next step is to create the blocks you will need within each of them. We advise you to name them with a code name to find the content more easily once you have too much information to just scroll through the Automate Tab.

In Mr. and Mrs. Winston, we have used the structure “GRn°\_Topic” to name grammar exercises and “VOCn°\_Topic” for vocabulary exercises. For example, our grammar exercise n°110 question A, about the Past Simple was named “GR110A\_PastSimple”.

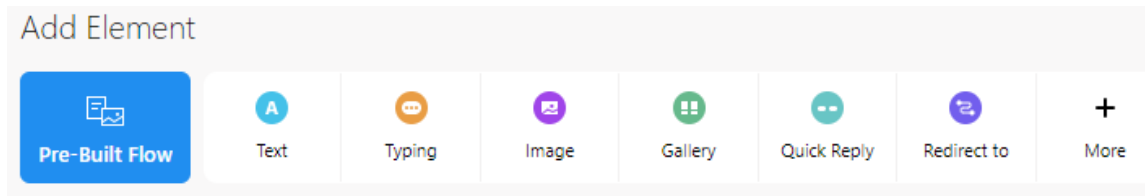


Screenshot of Mr. Winston on Chatfuel

You can then copy a block and move it in any group or sequence if you need to integrate similar content following the same structure.

## Cards

Once the structure is prepared, you will be able to add cards to your blocks to integrate the content itself. Within the block, you will see a bar with the cards to integrate such as text, “typing”, images, quick replies, etc.

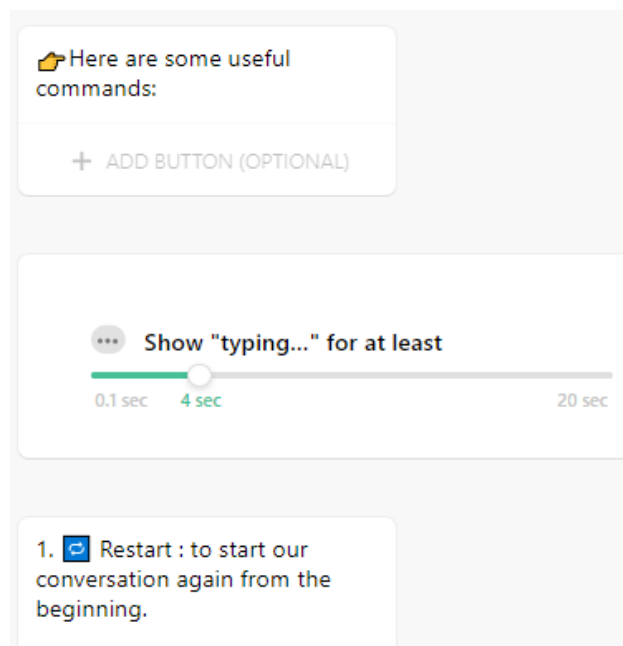


Screenshot on Chatfuel.com

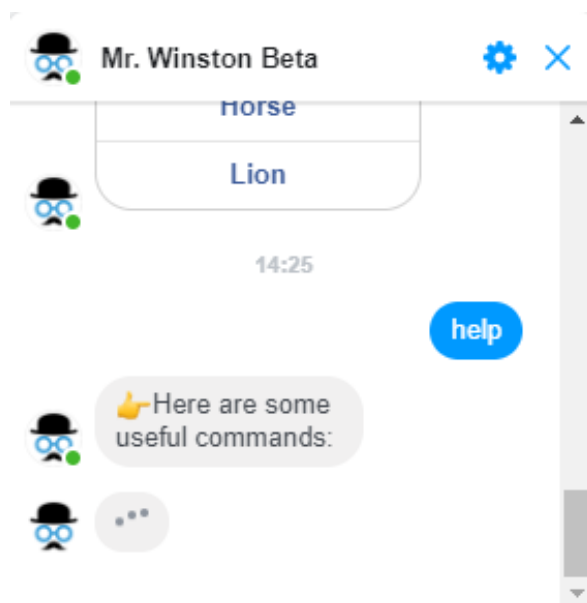
These cards will be described in the section below on how to integrate your content in the chatbot to show you how to practically integrate all types of content.

An important card to bear in mind, though, is the “**Typing**” card, which will make it seem like the chatbot is typing its next message. It is important to put one between different cards in order for the content to arrive progressively in the conversation, avoiding the user to receive all messages at the same time and giving them the time to read everything properly.

Here is how it will look on the platform:



In a user's conversation, the chatbot will show three dots, as if it was typing its next message:



## ii. AI setup

Chatfuel allows your chatbot to have some level of artificial intelligence. However, it is very basic and every AI rule you add to this feature needs to be well-thought out in order to make sure the chatbot understands what the users are most likely to type.

This feature is thus the one in which you will add basic interactions such as greetings, help suggestions, access to the main menu, etc.

The most important thing in this tab is to anticipate the things your users will type to access the content of your chatbot.

You will see two boxes:

### “if user says something similar to”

In this text box, you will type the user’s possible inputs to create an AI rule targeting a specific answer or block. As users might type a multitude of unexpected things, you will need to keep it basic in order not to write a novel in that text box. However, you will be able to type many different possible inputs by writing a sentence and clicking on the “enter” key of your keyboard before you write the next one. Bear in mind that AI rules allow small typos or slightly different wording. The chatbot will usually recognise a user’s input even if it contains a typo, as long as it is similar to what you have written in the AI rule.

if user says something similar to

unsubscribe from daily tasks

remove daily tasks

stop daily tasks

stop receiving daily tasks

I don't want to recieve daily tasks

## Example from Mr. Winston on Chatfuel

### “bot replies with”

This box will contain the chatbot’s answer to any of the possible inputs you wrote in the first text box. You have two possibilities:

- The chatbot can answer with a simple text answer:

The screenshot shows two panels. The left panel, titled "if user says something similar to", contains six rounded rectangular buttons with the following text: "Have a nice day", "Have a nice afternoon", "Have a nice evening", "Have a great day", and "Have a great evening". The right panel, titled "bot replies with", contains a text input field with the text "Thank you very much, you too! 😊" and a button below it that says "+ add Block or Text reply".

## Example from Mr. Winston on Chatfuel

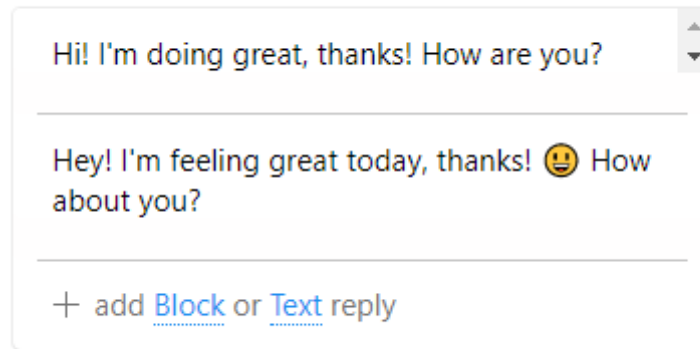
- It can answer with a specific block from the Automate Tab:

The screenshot shows two panels. The left panel, titled "if user says something similar to", contains ten rounded rectangular buttons with the following text: "I'm bored", "Let's do something", "I want to do something", "Show me what we can do.", "Menu", "Main Menu", "Go to menu", "do something", "what do we do", and "what to do now" (with a home icon). The right panel, titled "bot replies with", contains a dropdown menu with "Menu" selected and a button below it that says "+ add Block or Text reply".

## Example from Mr. Winston on Chatfuel

As you can see, it is possible to add more than one bot reply. If you choose to do this, the bot will answer randomly with the answers you added.

bot replies **randomly** with



Hi! I'm doing great, thanks! How are you?

---

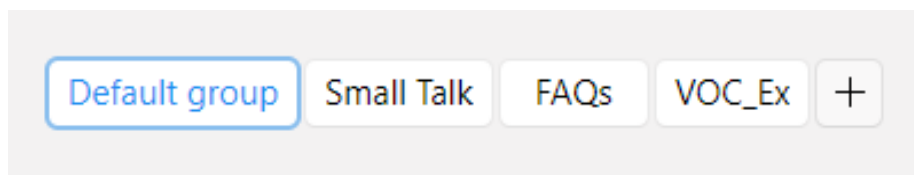
Hey! I'm feeling great today, thanks! 😊 How about you?

---

+ add [Block](#) or [Text](#) reply

Example from Mr. Winston on Chatfuel

You can divide these AI rules by category. This is useful to separate say a category on automatic messages (menu, help, subscribe to a sequence, etc.) and another on small talk (greetings, weather, etc.).



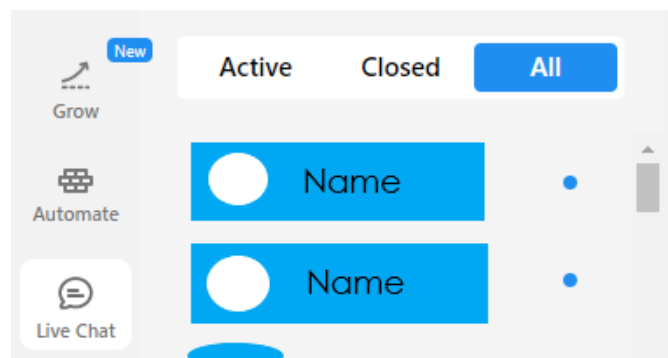
Default group Small Talk FAQs VOC\_Ex +

Example from Mr. Winston on Chatfuel

### iii. Live Chat

In order to follow your users' progress and interactions, you can access all the chatbot's conversations with its users in the "Live Chat" Tab. This feature is useful to make sure the interactions go well and to intervene in case of any issues.

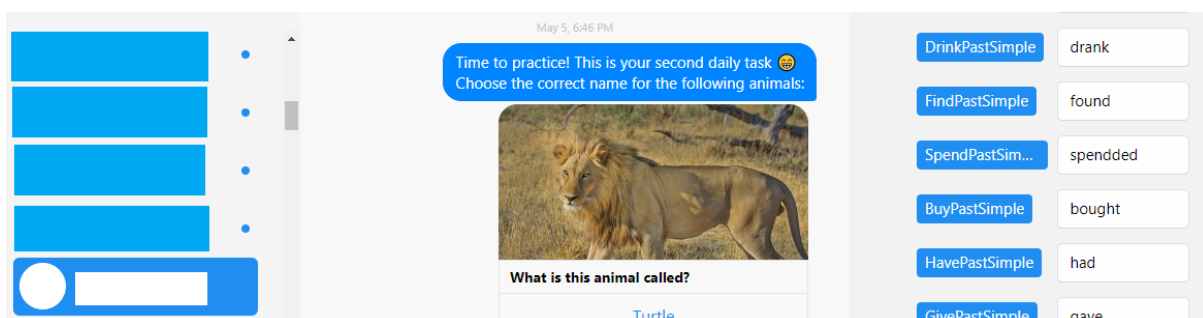
In order to access the conversations, click on "all" as shown below:



Example from Mr. Winston on Chatfuel

In this section, you will find the list of all the users and their conversations with your chatbot. You will see their Facebook profile pictures and name and a blue dot will appear next to them if there has been a new interaction since the last time you checked.

Some of the users' information and answers will be saved as "attributes", which will appear on the right side of the conversation.

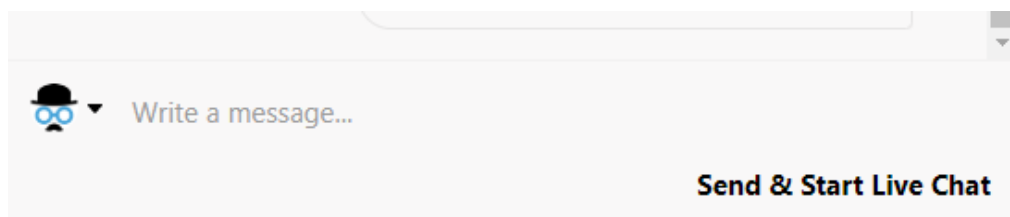


Example from Mr. Winston on Chatfuel



An attribute is an element that saves data about the user (e.g. their name) that you are able to use in further bot answers. It can be very useful for the students to get a more personalised experience as well as to save their answers to send them specific feedback. You will learn more about attributes in the section on content integration.

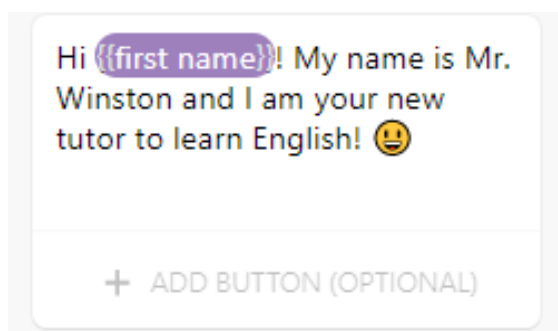
If you notice a problem needing human takeover, you can take control of the conversation by typing your message and clicking on “Send and Start Live Chat”.



Example from Mr. Winston on Chatfuel

## b. Think about your chatbot's personality

Your chatbot's personality is very important. As it will use a lot of automatic messages, the users might get tired of talking to a robot. For students to really feel engaged, the best is to create a motivating chatbot that does not judge them when they make mistakes and offers its help when the students want more explanations on a certain topic. Using attributes, as mentioned above, can also be really helpful for the chatbot to send more personal answers to its users. If you want to integrate one of the user's attributes into your message, such as their first name, you can do so by adding “{{attribute}}” to your message, as shown below:

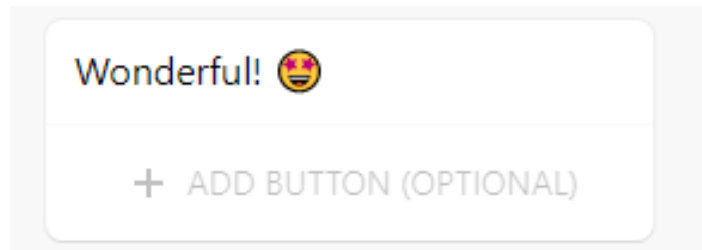


Welcome message in Mr. Winston

Before integrating your pedagogical content, think about how the chatbot will present itself, the content and react to mistakes, successes and even to rude messages.

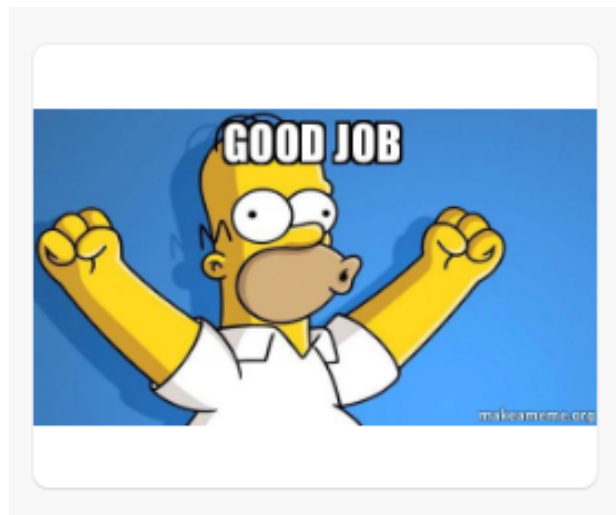
Several things can help in making it more fun to use for your students:

- **Emoji:** Using emoji will give the user a better sense of human interaction, allowing the chatbot to show its emotions and reactions.



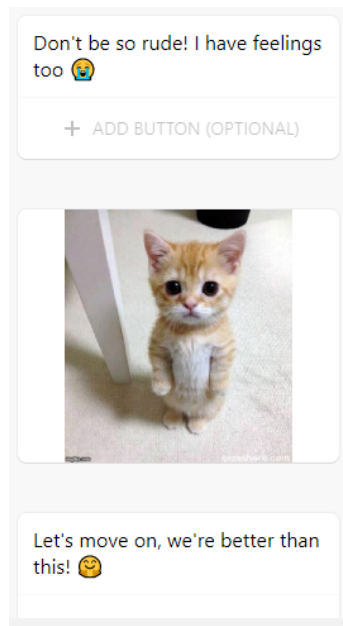
Example from Mr. Winston on Chatfuel

- **GIFs and memes:** by adding GIFs and memes to your chatbot's interactions with the students, you will give it some sense of humour. These two elements are trendy among young people and will make it look friendlier. You can add memes and GIFs using an "Image" card.



Example from Mr. Winston on Chatfuel

- **Reaction to rude messages:** Many users will test the chatbot's boundaries or will get annoyed if blocked at some point in their interaction. This can cause some of them to send rude messages to the chatbot. You can either let the chatbot send them its default message for all the user's inputs it does not understand or create a specific block for rude users.



Example from Mr. Winston on Chatfuel

As you can see, we chose a “cute” response, but you can adapt it to your own chatbot's personality!

## c. How to create automatic messages

As mentioned above, the chatbot is able to recognize user's sentences and to reply according to your roadmap. But sometimes the chatbot would need to initiate the interaction before the user sends any message or send a specific message when the chatbot does not understand what the user typed. This is what we call an automatic message!

Automatic messages are needed in order to ensure a smooth user experience. Chatfuel provides two examples of automatic message: the Welcome Message and the Default Message:

The **Welcome Message** is the first message users will receive when they click on "get started". In this message, the chatbot should introduce itself, explain its function and perhaps give some guidelines regarding its use and interactions. It is a good place to list the main commands that the users will need such as "menu", "help" or "stop". It can also be an opportunity to ask them if they want to subscribe to a sequence, such as daily tasks or daily revisions. Do not forget to explain how users can subscribe or unsubscribe to these sequences at any time during their use of the chatbot.

The **Default Message** is the one the chatbot will send automatically when it does not understand a user's input. It should be applicable to a maximum of cases and be as non-intrusive as possible. It should send the user back to the menu to avoid blocking the interaction. As this will be unpleasant for the user, try to make your Default Message as short and straightforward as you can, and make sure to add some personality to it to lighten the mood.

In addition to these messages, you will probably want to create additional automatic messages to provide a smooth experience to your users. Here are a few other automatic messages we decided to include in Mr. and Mrs. Winston:

- **Menu:** By creating a “Menu” block, you will be able to show all possible options to your users. It will provide an easy way to access the content of the chatbot.
- **Help:** In order for the users to remember different commands they can type at all times, you can create a “Help” block with a reminder of all these commands or further explanations on how to interact with the chatbot.
- **Stop:** The users might be busy and want to stop receiving messages at a certain point. A short message should be sent when the user wants to stop the interaction, to show that the chatbot has understood.
- **(Un)Subscribe to Sequences:** If you asked your users if they wanted to subscribe to a sequence, they could either want to subscribe later or to unsubscribe if they did it immediately. This is why you will need a Block for those who will type “(un)subscribe to [name of the sequence]”.

You can find more tips and tricks on how to create these messages in the section called “Best practices in chatbot design for language education”.

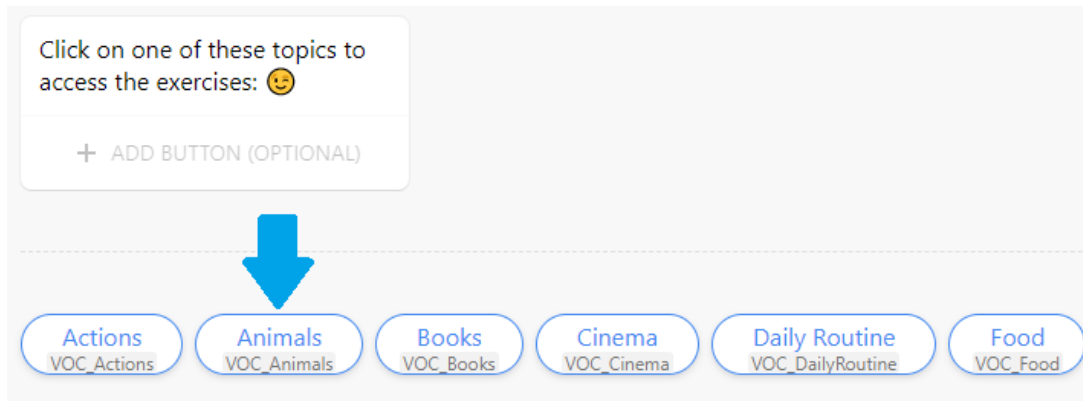
## d. How to integrate the architecture and content you created

### i. Presentation of the menu and implementation of the general architecture

We have mentioned the creation of a “Menu” Block in the previous section of this guide. Every menu will be different according to the chatbot’s purpose. What we suggested in the chapter on the chatbot’s architecture will help you structure the interaction on Chatfuel and integrate your content to create a smooth and enjoyable interaction for your users.

As our chatbots’ purpose is to practice, not to revise lessons, we created a menu where users will choose the type of exercises they want to do step by step. If they need explanations, they will be sent to the FAQs, which will be explained in section iii. They might for instance first choose to work on Vocabulary and then on Animals.

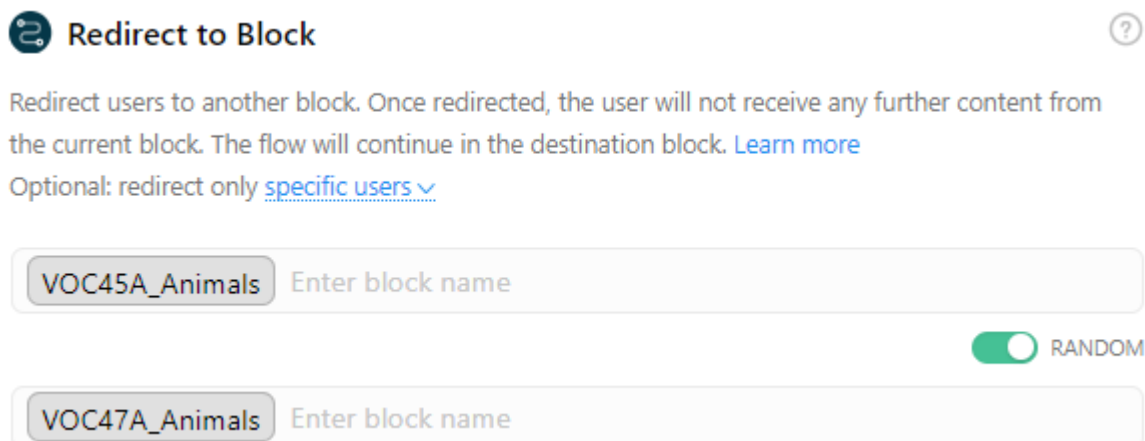




Screenshots of Mr.Winston's menu on Chatfuel

Regardless of the number of exercises you are going to create for your chatbot, you will need to link them to the main menu. As explained above, the exercises can be accessed by structuring the content. Using the same example, if the user wants to access exercises to revise vocabulary about animals, they will first choose "Vocabulary" in the main menu, then choose "Animals" among the proposed topics. This will send them to a general Block that you will create with a "Redirect to block" Card which randomises the exercises sent on the topic.

First, add the code name of the exercises on that topic in the Card and activate the "Random" feature.



Screenshots of Mr.Winston's menu on Chatfuel

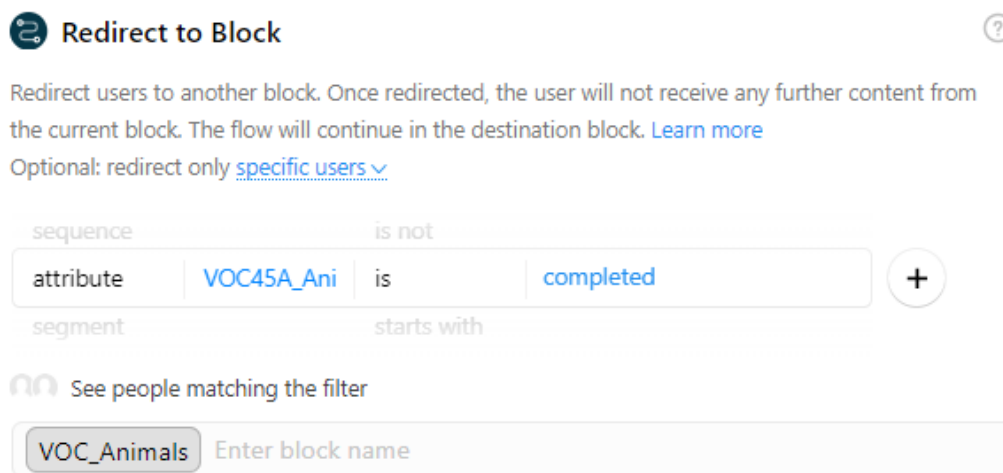


By activating the “Random” feature, the users who choose this topic will receive either one of the available exercises randomly. This can cause an additional issue: the [loop](#).

In order to avoid for the chatbot to send the same exercise twice in a row, several steps will be needed.

### Step 1: In the first of an exercise's Blocks (e.g. VOC45A\_Animals)

- Add a “Redirect to block” Card at the beginning of the Block;
- Click on “redirect only specific users” (in blue);
- Create an attribute with a code name for the Block and establish that if it is “completed”, it will redirect these users to the general block which randomises Vocabulary exercises on the chosen topic (e.g. animals).



Screenshots of Mr.Winston’s menu on Chatfuel


- Right after the “Redirect to Block” Card, add another Card called “Set User Attribute”



- Then, put the randomiser “Redirect to block” Card with all the exercises on the topic.
- Don't click on “specific users”, just add all the exercises on the topic and activate the “Random” button.

### Redirect to Block ?

Redirect users to another block. Once redirected, the user will not receive any further content from the current block. The flow will continue in the destination block. [Learn more](#)

Optional: redirect only [specific users](#) 

Enter block name

RANDOM

Enter block name

Enter block name

Enter block name

Screenshots of Mr.Winston's menu on Chatfuel

### Step 3: In the restarter Block (e.g. VOC\_AnimalsEND)

This Block will only be reached by users who have finished all the exercises on a specific topic.

In order for them to be able to redo the exercises, we need to add this last step.

- Add a “Set User Attribute” Card to your block;
- Set all the attributes of the exercises on the topic as “not set”


USER ATTRIBUTE *	VALUE *
{{ GR31A_Comparative_Animals }}	not set
{{ PH33A_PhrasalVerbs_Animals }}	not set
{{ GR37A_SoNeitherAux_Animals }}	not set
{{ VOC45A_Animals }}	not set
{{ VOC47A_Animals }}	not set

Screenshots of Mr.Winston's menu on Chatfuel

- Add a “Redirect to Block” Card to send the users back to the randomiser so they can redo the exercises as many times as they want.

## Redirect to Block ?

Redirect users to another block. Once redirected, the user will not receive any further content from the current block. The flow will continue in the destination block. [Learn more](#)

Optional: redirect only [specific users](#) 

Enter block name  RANDOM

Screenshots of Mr.Winston's menu on Chatfuel

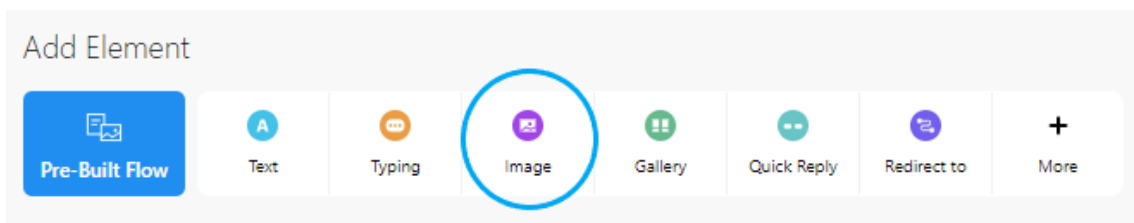
## ii. How to integrate pictures, audio and video files

Before we look into the integration of the different types of created content (FAQs, Exercises and Daily Tasks), let's explore the integration of pictures, audio and video files. To integrate those, you will need to add specific Cards to your Blocks.

### Pictures:

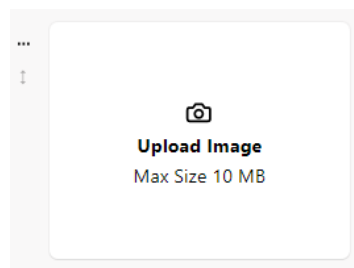
#### 1. Image Card

This is the easiest way to add a picture to your chatbot's interactions. You can upload any picture file in it, including GIFs. To do so, select the "Image" Card in the menu on Chatfuel:



Screenshots of Mr.Winston's menu on Chatfuel

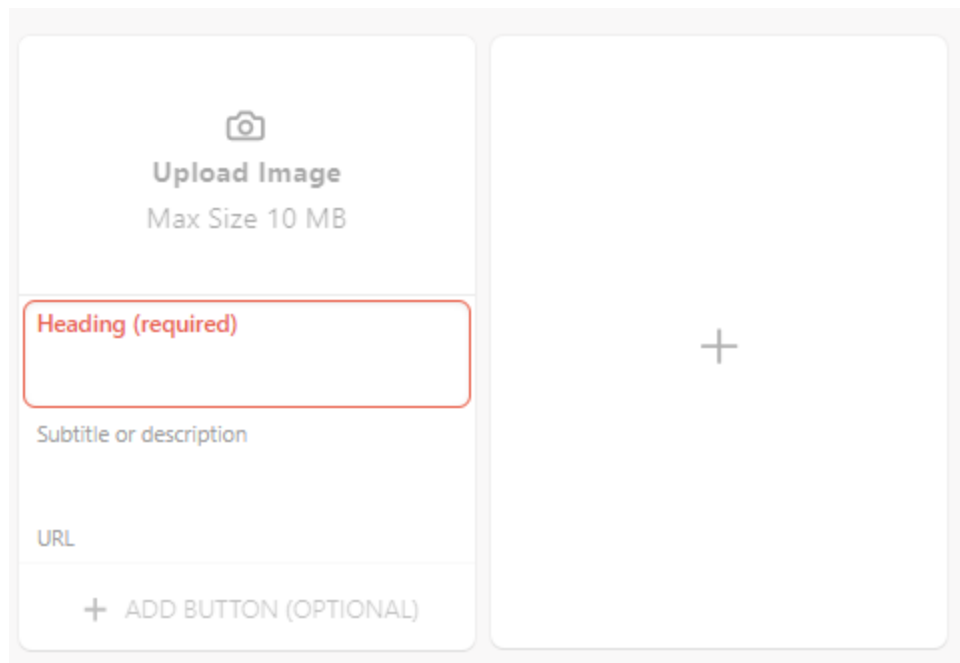
Once you have selected it, simply click on the empty Card and upload a picture from your computer. The empty Card will look like this:



Screenshots of Mr.Winston's menu on Chatfuel

#### 2. Gallery Card

The Gallery Card will be useful when you need to add buttons and text underneath an image, such as in exercises or daily tasks. You can also choose it from the menu on Chatfuel and it will look like this:



Screenshots of Mr.Winston's menu on Chatfuel

To create an exercise or daily task with this card, upload your picture, write your question in the Heading part and add buttons for students to choose from. You will see more specific examples in the part on how to integrate an exercise.

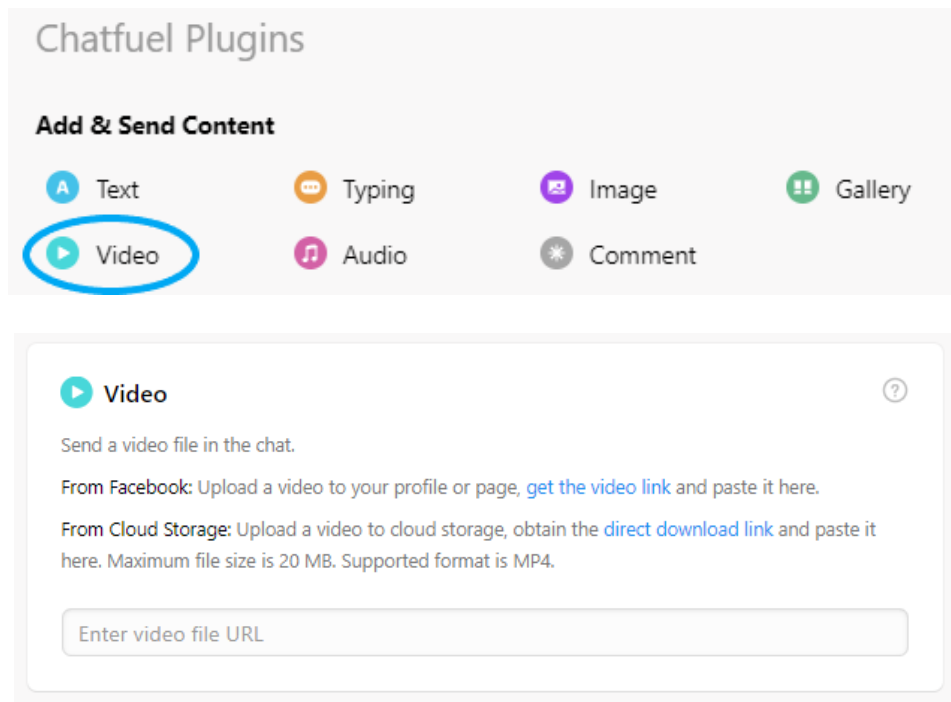
## Videos:

### 1. Link

If you want to share an external video, you can simply use a Text Card where the chatbot recommends the user to view this video by sending the link. If this link is very long, do not forget to shorten it using a URL shortener (such as this one: <https://www.shorturl.at/>) before you write it in the chatbot.

## 2. Video Card

If you want to upload a video of your own, you can also do it by choosing the “Video” Card.



Screenshots of Mr.Winston’s menu on Chatfuel

As you can see, the video needs to be uploaded either from Facebook or from Cloud Storage, by copying the link and pasting it in the Card.

## Audio:

### 1. Audio Card

You can upload an audio file to your chatbot by using an “Audio” Card. The process is more or less the same as for the videos. You will need to enter the URL of the audio file in the Card in order to integrate it.



## Chatfuel Plugins

### Add & Send Content



### Audio

Send an audio file in the chat. Supported formats: MP3, WAV, OGG. Maximum file size: ~20MB. If you use Dropbox, please replace "www" at the beginning of the audio file URL with "dl".

Example: <https://dl.dropbox.com/s/sample.mp3>

Screenshots of Mr.Winston's menu on Chatfuel

### iii. How to integrate FAQs

For an educational chatbot, it is important to define the learning objectives for your users. This means that when designing the FAQs, you will need to think about both the topics you want to explain as well as bear in mind the possibilities offered by the platform. By combining these requirements, you will be able to come up with the best solution for your specific situation.

In the case of Mr. and Mrs. Winston, we decided to create revision infographics containing the important information on the topics covered in the daily tasks and exercises. To do this, we used the graphic design platform Canva.com, which gives access to very interesting possibilities for graphic material creation, even in its free plan.

Integrating these infographics on Chatfuel is very simple as they can be saved in PNG format, which you can then integrate in an “Image” card on Chatfuel. Do not forget to add a short introduction before the chatbot sends the image. We decided to create two infographics per grammar topic: one with an explanation and another one with examples. By clicking on the image on a smartphone, the infographic will appear in full screen.

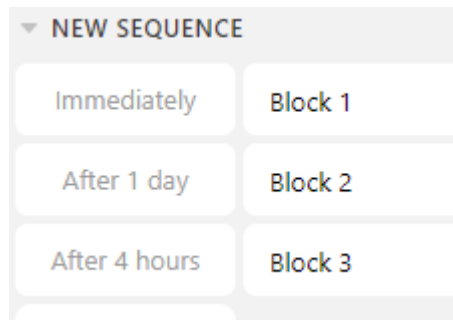
If the users need more explanations, there is a third option where the chatbot sends them a link to a video on YouTube explaining the concept differently. This can greatly help students who need to visualise the content in different ways to fully understand.

### iv. How to integrate Daily Tasks

As explained previously, when you want the chatbot to send tasks or short revisions to your users every day, it should be done by creating a Sequence. You can ask your users to subscribe to the Sequence through the Welcome Message and they will start the Sequence either immediately or at any other time you decide to set.

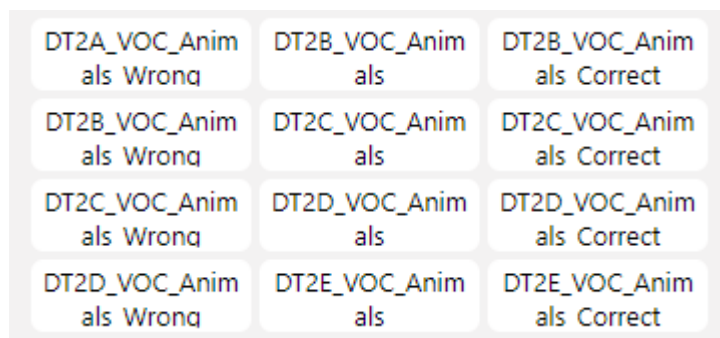
The first block of the Sequence will be scheduled according to the time of the users' subscription to it. The next blocks will be scheduled according to the previous block.

In this example, Block 1 will be sent immediately after the user subscribes, Block 2 will be sent 1 day after Block 1, Block 3 will be sent four hours after Block 2, and so forth.



Screenshots of Mr.Winston's menu on Chatfuel

Here, it gets a bit more complicated as you will want the chatbot to give feedback to the users for their answers to the questions asked in the Daily Tasks. Add the first question of your daily task to the Sequence but put the rest of the task in a Group, including the chatbot's feedback for each task's correct and incorrect answers.



Screenshots of Mr.Winston's menu on Chatfuel

As you can see, we used a code name for these blocks. This is how the continuity of the tasks appear in a Group. In this image, we can see that the second daily task has 5 questions named

from A to E. For each question, we have created feedback for both correct and incorrect answers.

As the structure is very similar in daily tasks and exercises except for the first question being integrated in a Sequence for the daily tasks, learn how to link these blocks smoothly and to create different kinds of tasks and exercises in the following section.

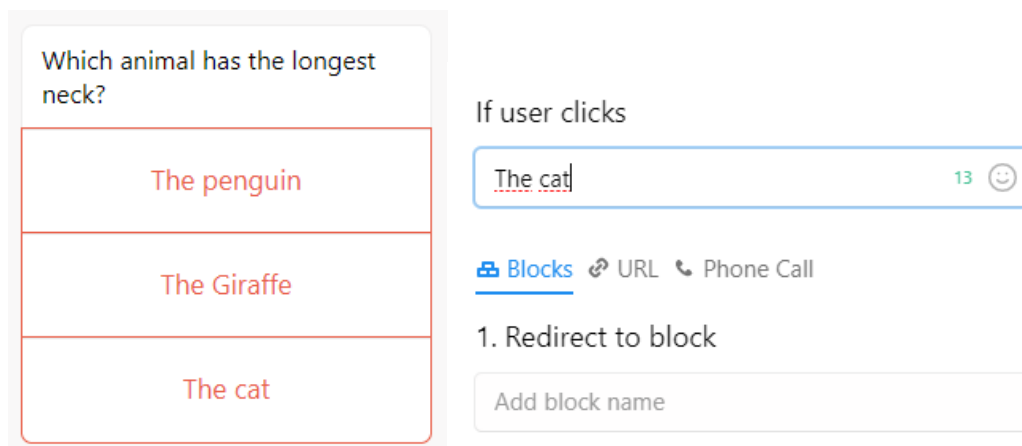
## v. How to integrate exercises

As explained above, the difference with the daily tasks is that exercises will be fully integrated in a Group. You can create as many groups as you want according to the categories of content you need to integrate. Let us dive into the Cards and features to use for the integration of the content of daily tasks and exercises.

There are two possible ways of testing the user's knowledge:

### 1. Buttons

When you add a **Text** card, you will notice that you can add up to three buttons below. If you want to provide more answers, you can choose to use a Quick Reply card instead, which allows you to provide up to 11 choices. Remember that the answers cannot exceed 20 characters, spaces included.



Screenshots of Mr. Winston's menu on Chatfuel

You can see that the buttons will turn red if you do not link them to another block. To do so, you can click on them and add the name of the block you want the chatbot to send if the user clicks on it. Once it is done, you will see the name of the linked block below the answers.

Which animal has the longest neck?

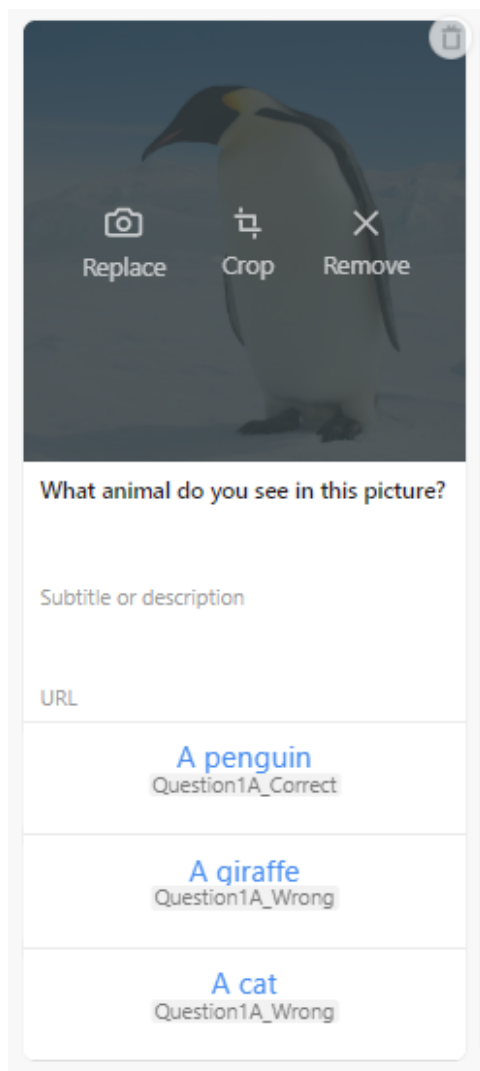
The penguin  
Question1A\_Wrong

The Giraffe  
Question1A\_Correct

The cat  
Question1A\_Wrong

Screenshots of Mr.Winston's menu on Chatfuel

If you need to put buttons after an [Image](#), we recommend using the Gallery card and only putting one image in it. Its “Heading” can be the question of the task such as “What animal do you see in this picture?” The same restrictions and procedures apply to the buttons under an image in terms of number, characters and linking.



Screenshots of Mr. Winston’s menu on Chatfuel

## 2. Save User Input

Another way for the users to interact with the chatbot is to type their answers. As the Artificial Intelligence of this kind of chatbot is rather limited, it will be better to do this only when a few answers are possible. You can thus use the Card called “Save User Input” in which you will type your question for the users. Their answers will then be saved as what is called an “Attribute”.

**Save User Input** ⓘ

Ask bot users questions and save their responses to user attributes. You can then utilize attributes in broadcasting user filters, Redirect to Block plugin or export them via Notify Admin via Email or JSON API plugins. [Learn more](#)

MESSAGE TO USER \*      VALIDATION      SAVE ANSWER TO ATTRIBUTE \*

What is the Past Simple form of the verb to go? 😊      None ▾      {{ Question1A|}}

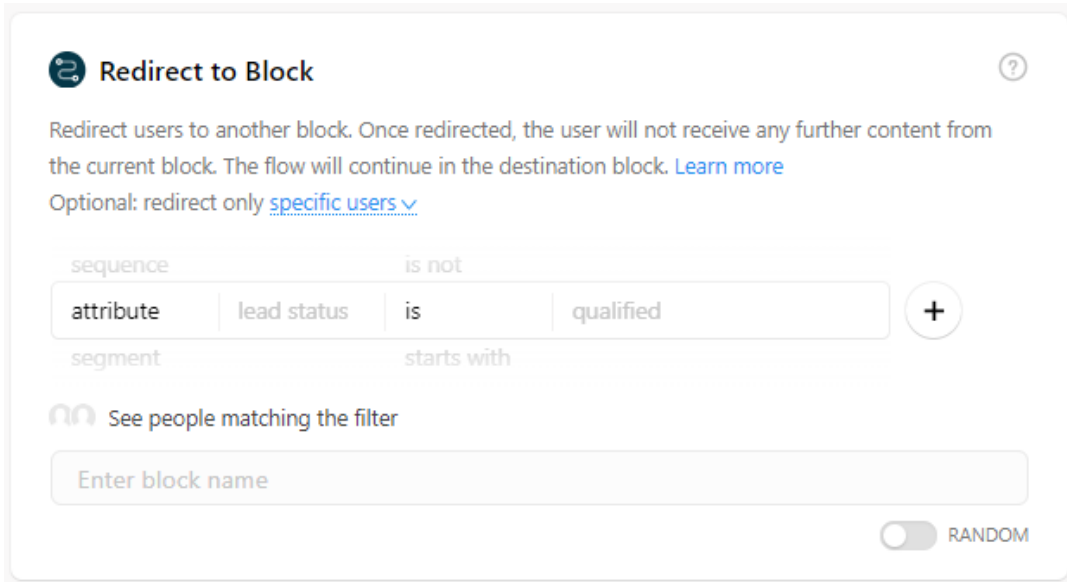
+ ADD FIELDS

**Modify Default Plugin Phrases >**

Screenshots of Mr.Winston’s menu on Chatfuel

Once this Card is created, you will need to add two other Cards called “Redirect to Block”. This will allow your chatbot to send targeted feedback. To do so, you will create one of these Cards to redirect users who got the correct answer and another one for users who got the wrong answer. Therefore, you will need to choose the option to “redirect only specific users”, which is suggested on the card (in blue).



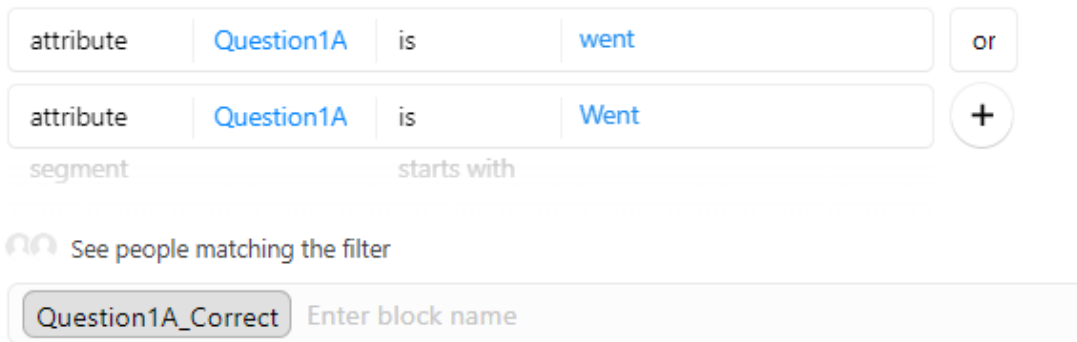


Screenshots of Mr.Winston's menu on Chatfuel

As you can see, you can send the users to another Block according to their Attribute.

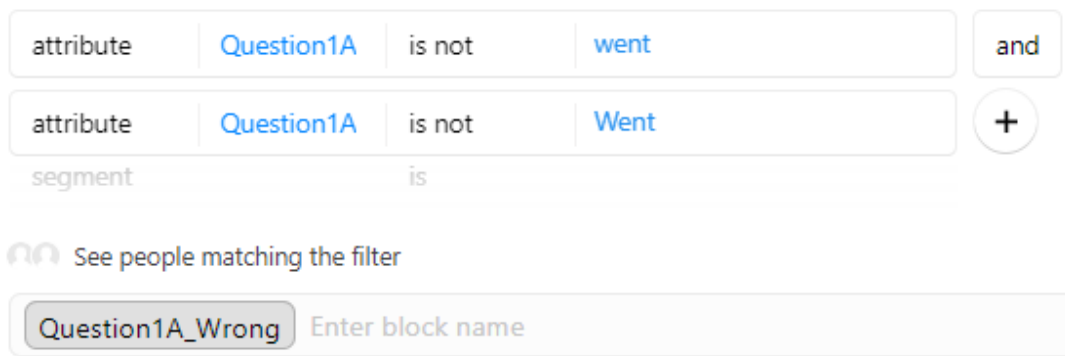
Let's continue with an example:

- For those who have the **correct answer**:



Screenshots of Mr.Winston's menu on Chatfuel

- For those who have the **wrong answer**:



Screenshots of Mr.Winston's menu on Chatfuel

Note that we put two options for if the user starts their answer with a capital or lowercase letter. This is important because, unlike the Set up AI Tab, this Card does not allow for typos or any answer different from the ones entered by the designer.

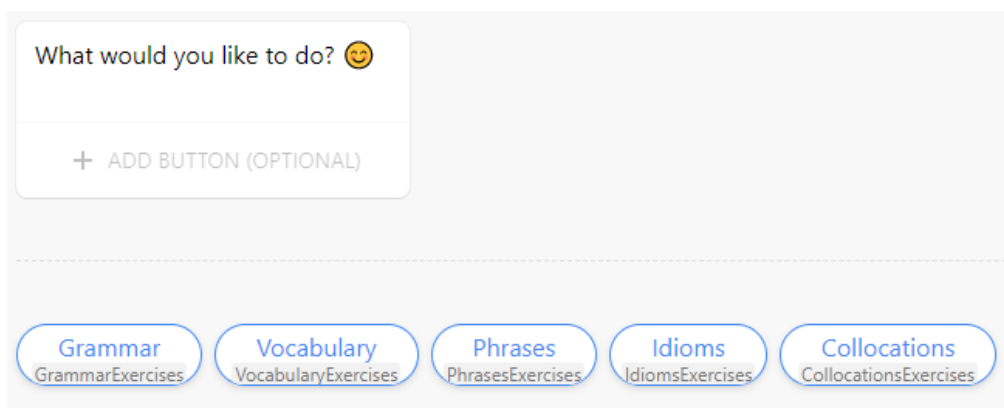
One last thing to bear in mind is that users might want to stop the interaction in the middle of an exercise. If they are supposed to type their answers, such as in the last example above, you will need to add another “redirect to block” Card where the user can type “Stop” and get the appropriate answer from the chatbot.

**Congratulations, you now know all the basics to create your very own tutor chatbot!**

### 3. Best practices in chatbot design for language education

In addition to Chatfuel’s automatic messages, we have decided to add some of our own. Here is how we have done it in Mr. and Mrs. Winston:

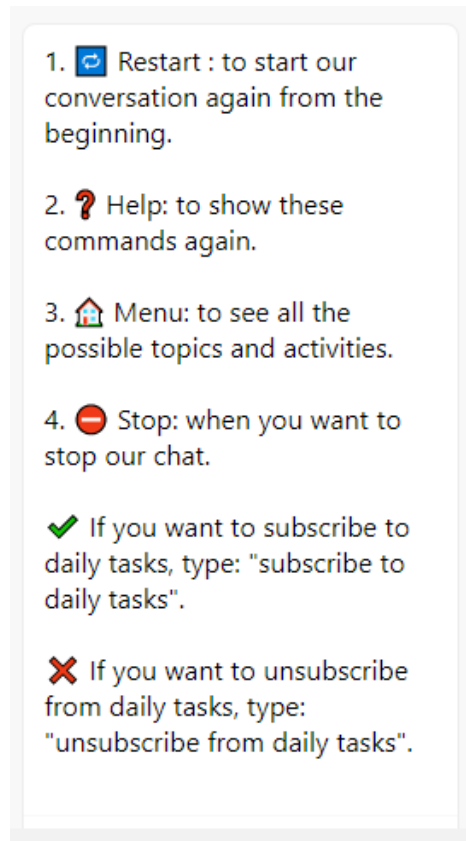
- **Menu:** We created a menu Block for users to access our exercises by choosing on which topic they want to work. We strongly recommend using Text cards with “buttons” (3 choices or less) or “quick replies” (more than 3 choices) to avoid relying on what the users might type.



Text card and Quick Replies in Mr. Winston’s Menu on Chatfuel

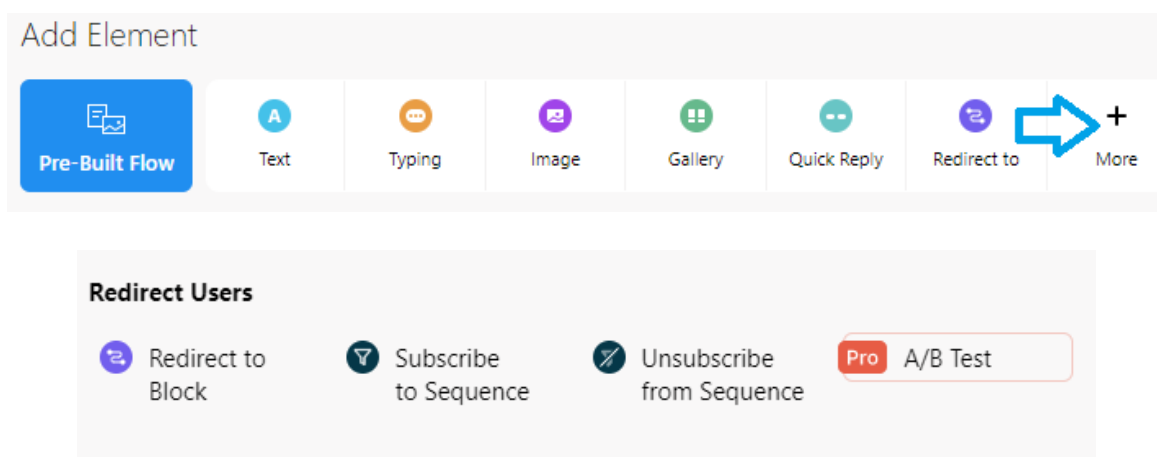
As you can see, each quick reply will send the users who click on them to other blocks on the topic they chose.

- **Help:** In the Welcome Message, the chatbot explained how to explore its different options. However, the users might struggle to remember all the commands they need to type. This is why the “help” Block we have created in Mr. and Mrs. Winston will remind them of all these commands. We decided to do it with a simple Text card, using emoji to better illustrate them.



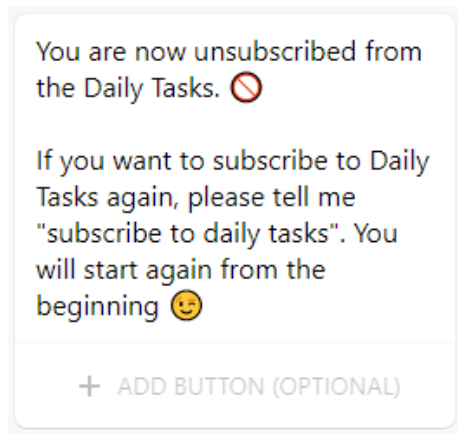
Text card in Mr. Winston on Chatfuel

- **Stop:** In our chatbots, we created an AI Rule for the users who type “Stop” to simply receive a Text card saying “bye-bye! 🙋”. This allows for the chatbot to end the conversation nicely and quickly. Whatever you choose your bot to say, keep it short so it does not bother the user who wanted to stop the conversation.
- **(Un)Subscribe to Sequences:** We created this function to make sure users could freely manage their subscription to the daily tasks. We created an AI Rule in which users who type “subscribe to daily tasks” or “unsubscribe from daily tasks will be sent to a specific Block in which we added either a “Subscribe to sequence” or “Unsubscribe to sequence” card:



Screenshots showing where to find the “(Un)Subscribe to Sequence” Cards on Chatfuel

Do not forget to add a text card with a confirmation of their successful (un)subscription to the Sequence!

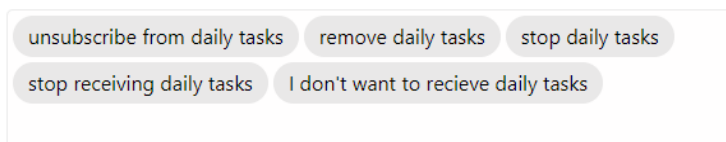


Example of confirmation message in Mr. Winston on Chatfuel

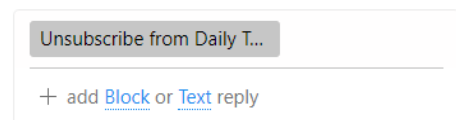
For all of these automatic messages, we created an AI Rule in the “Set Up AI” Tab. We recommend adding different possible user’s inputs to make sure they access the message they want, even if they forgot the exact command.

### Here is how we did it in Mr. Winston:

if user says something similar to



bot replies with



Screenshot of AI Rule in Mr. Winston on Chatfuel

# PART 5

## TEST THE CHATBOT

### 1. What to test for

When you create a new product or service, before spreading it or putting it on the market, you have to consider whether the result expected is consistent with your expectations. In other words, between the design of a chatbot and its use on a large scale, it is necessary to consider carrying out a testing phase that allows you to evaluate the consistency of the product created with the objectives that that you had set from the beginning.

Once defined for what reason or purpose you want to build a chatbot, what utility it must have, what architecture you want it to have and on which platform you want to insert and build your chatbot, you need to test the tool. This is useful to understand if all the work previously carried out has been consistent and it is effective in achieving the objective of improving foreign language learning. You need to achieve some evidence that your chatbot is useful for your students.

Testing with end users represents an important phase because it allows you to identify any design errors, ensuring that the product/service is easy to use and functional to the educational / training objective envisaged.

It is therefore important that during the chatbot testing phase, the test can be conducted directly with a selected group of chatbot end users.

For that purpose you have to submit a questionnaire in order to collect impressions and evaluations on the experience of using the chatbot. At the end of this process you'll establish its effectiveness.

To test the chatbot we recommend using a procedure that follows these points:

1. Define the test goal
2. Choose a population restricted to the survey
3. Choose the investigation method
4. Collect and interpret user responses
5. Modify the chatbot following the feedback received and analysed

As for **the test objective**, it is important to note:

- the possible presence of typing and formatting errors (are there errors in writing, punctuation, etc. in the texts or exercises?)
- any inconsistency in the chatbot architecture (i.e. the usability of the different sections of the chatbot: does the user understand how to navigate and know how to use the information that the chatbot provides them?)
- possible cultural misunderstandings that were inserted during the creation of the chatbot contents (are there jokes, phrases, images that are not clear or that could offend a particular category of users?)
- the level of difficulty of the contents (i.e. if the proposed lessons and exercises are understandable and reflect the expected level of learning for which the chatbot was conceived)



- the perception of satisfaction during the use of the chatbot and in its interaction (i.e. understanding if the relationship established with the chatbot is simple, understandable, pleasant and satisfying as the chatbot must be tool that helps and supports the teacher)

The **choice of a target group** for the survey: it means thinking about which type of users you want to have the chatbot tested so that it can obtain the most useful information, it also means deciding on the number of the group, or rather a number of users reasonably sufficient to obtain qualitative and quantitative statistical data. This depends a lot on what your chatbot's target audience is in general. For example, if the target of the chatbot that you built are the third year classes at your school, you will try to select a group of 5 to 10 students who can test the tool and who can give you feedback on the objectives that you have previously considered.

The cheapest, simplest, and most useful **method of investigation** from the point of view of the necessary resources and the timing of implementation is certainly the creation of a questionnaire in paper or computerized format to be sent and received online.

Once the questionnaires have been collected, the answers can be analysed to verify the objectives set in the construction of the test and the analysis can be integrated with one-to-one interviews, if necessary.

Finally, the **chatbot will be modified**, taking into consideration **the information collected and analysed** to create a final version of the chatbot that can be used by all the users envisaged.

## 2. How to create a questionnaire

To create a questionnaire (both in paper and in electronic format) that is useful for obtaining reliable and usable data, it is important to consider some characteristics:

- use clear and direct language, avoiding using too technical terminology;
- do not use biased questions that suggest one answer over the other(s);
- avoid ambiguous questions: try to be objective and neutral, trying to ask specific and not too general questions;
- do not create a questionnaire with too many questions;
- use open and closed questions knowing that the use of open questions is useful to stimulate unexpected answers, while closed questions, such as single or multiple choice, allow you to collect statistically more coded data in a single system. You can use a Likert scale, for example, from level 1 to 5:

1. Not at all agree - 2. Disagree - 3. Undecided - 4. Agree - 5. Very much agree

or

1. Very unsatisfied - 2. Unsatisfied - 3. Neutral - 4. Satisfied - 5. Very satisfied

To structure a questionnaire it is necessary to create sections that include different areas of interest, or the contents that you want to analyse and for each section to create consistent questions taking into account the suggestions mentioned above.

The questionnaire should not be too long, so you have to carefully choose the questions that can effectively gather the desired information.

Always remember to insert an initial sentence that explains the reason for the investigation and the collaboration requested and the use that will be made of the information. A final sentence of thanks for the time spent, if you like.

Therefore, a structure for a questionnaire could be the following:

	Introduction
Part 1	Questions about typing errors
Part 2	Questions about the structure of the chatbot
Part 3	Questions about cultural misunderstandings
Part 4	Questions about the level of difficulty of the contents
Part 5	Questions on the satisfaction of the interaction
	Conclusion

### 3. Questionnaire example

An example of questionnaire to test our Mr. Winston Chatbot can be structured as follows:

	<p><b>Introduction</b></p> <p>The chatbot is a learning tool, so I am asking you to test it in order to help me to do a revision of it. Please explore each part of the chatbot (exercises, FAQs, daily tasks, grammar, vocabulary, etc...) and write down any errors or impressions about your experience using the chatbot.</p> <p>First of all, read all the questions from the questionnaire carefully to get an idea of what to pay attention to while using the chatbot.</p> <p>Your feedback on the tool and its usefulness for your learning is important for improving it.</p>
Part 1	<ul style="list-style-type: none"><li>- Did you find any typos? If yes, could you please list them down here:</li></ul>

Part 2	<ul style="list-style-type: none"> <li>- Is it easy to navigate the chatbot? Level 1 – 5 answer</li> <li>- Did you immediately understand how to use the chatbot?</li> <li>- Do you understand how to switch from one section of the chatbot to another? Yes /No. If not, on what occasion?</li> <li>- Are the instructions usually clear? Level 1 – 5 answer</li> <li>- Are there topics not covered in the chatbot that you would have liked to find? Yes /No. If yes, please specify which ones.</li> </ul>
Part 3	<ul style="list-style-type: none"> <li>- Regarding the topics and examples covered in the chatbot always understandable? If not, please explain why.</li> <li>- Are the images used in the chatbot appealing and understandable? Yes /No. If not, please specify which ones.</li> <li>- Were the emoji, gifs and memes that you saw in the chatbot funny and attractive? Yes /No. If not, please specify which ones.</li> <li>- Did you feel offended in any way by an image/GIF in the chatbot? Yes /No. If yes, please specify which ones.</li> </ul>

Part 4	<ul style="list-style-type: none"> <li>- Which topics did you find to be the most difficult while using the chatbot?</li> <li>- Did you have any difficulties while doing the grammar exercises? Yes /No If yes, please specify which ones.</li> <li>- Do you think the infographics/FAQs of the chatbot help you to effectively understand the content? Level 1 – 5 answer</li> <li>- Are the daily tasks fulfilling? Level 1 – 5 answer</li> </ul>
Part 5	<ul style="list-style-type: none"> <li>- Level 1 – 5 answer</li> <li>- Overall, did you find studying with the chatbot satisfying?</li> <li>- Do you think this chatbot is a friendly and appealing tool? Level 1 – 5 answer</li> <li>- How was the interaction with the chatbot? Level 1 – 5 answer</li> <li>- Do you think the chatbot helped you in some way? (for example, memorizing more vocabulary, understanding grammar rules better, etc.) Level 1 – 5 answer</li> <li>- Did you have fun with it? Level 1 – 5 answer</li> </ul>

	<p><b>Conclusion</b></p> <p>Thank you for your time. Your answers will be used to create a better and more useful language-learning tool. If you have any additional remarks or suggestions, please write them below:</p>
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you can more specifically choose the questions in the list above based on the structure you have given to your chatbot to obtain information that most interests you.

If you want to use, for example, a Google form, you can create a questionnaire that can easily be sent to your user.

## 4. How to gather data

Using a Google form or any other form creation tool, the application automatically creates statistics, or records the answers based on the type of questions asked. The data are automatically inserted into a spreadsheet file which can be downloaded to your computer and the application itself can create summary graphs of the acquired answers.

If the questions are relatively few, you can use them simply by scrolling through the answers and writing down the most significant ones.

The way in which you can use the data depends very much on the significance of the answers received, or in other words, whether the data you have acquired is useful for understanding if you have built your chatbot well.

It is very important how you build your questionnaire. You can use many open questions, which must be treated qualitatively (means that you have to interpret the meaning of the answers without using measurement scales). Otherwise, only closed questions that provide quantitative feedback on the dimensions being investigated can be used.

Finally, you can choose to use both types of questions to build your questionnaire.



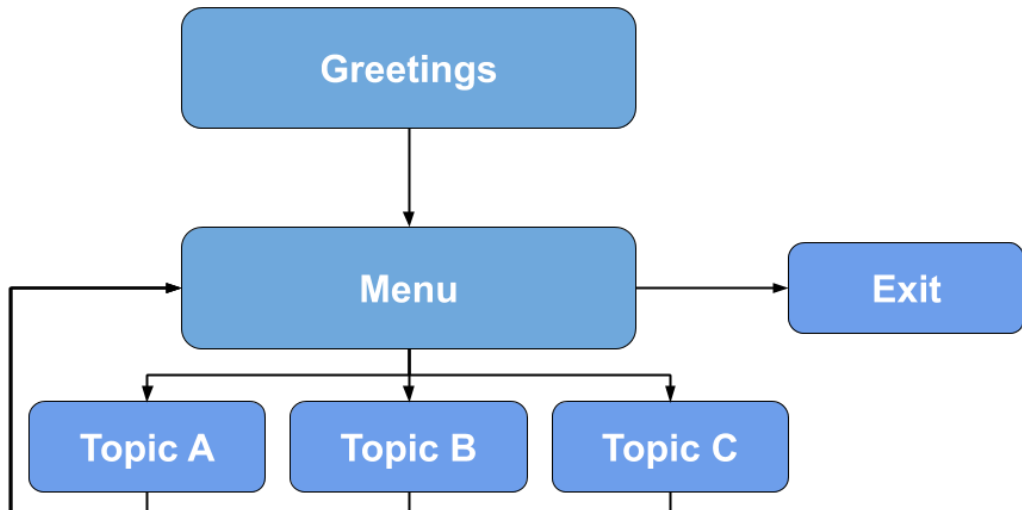
## 5. How to analyse data

Testing your chatbot with a small sample of users produces a set of data that is easily readable and empirically interpretable. In this case, the analysis of the data collected from the questionnaires, once summarized in tables or graphs, can become a starting point for a further investigation to be carried out verbally, perhaps with an interview centred on the critical points highlighted.

At the end of this phase, you will have reasonable certainty that you have created a chatbot that is the expression of your goals and efforts to create a clear, fun, encouraging, stimulating and useful tool for your students.

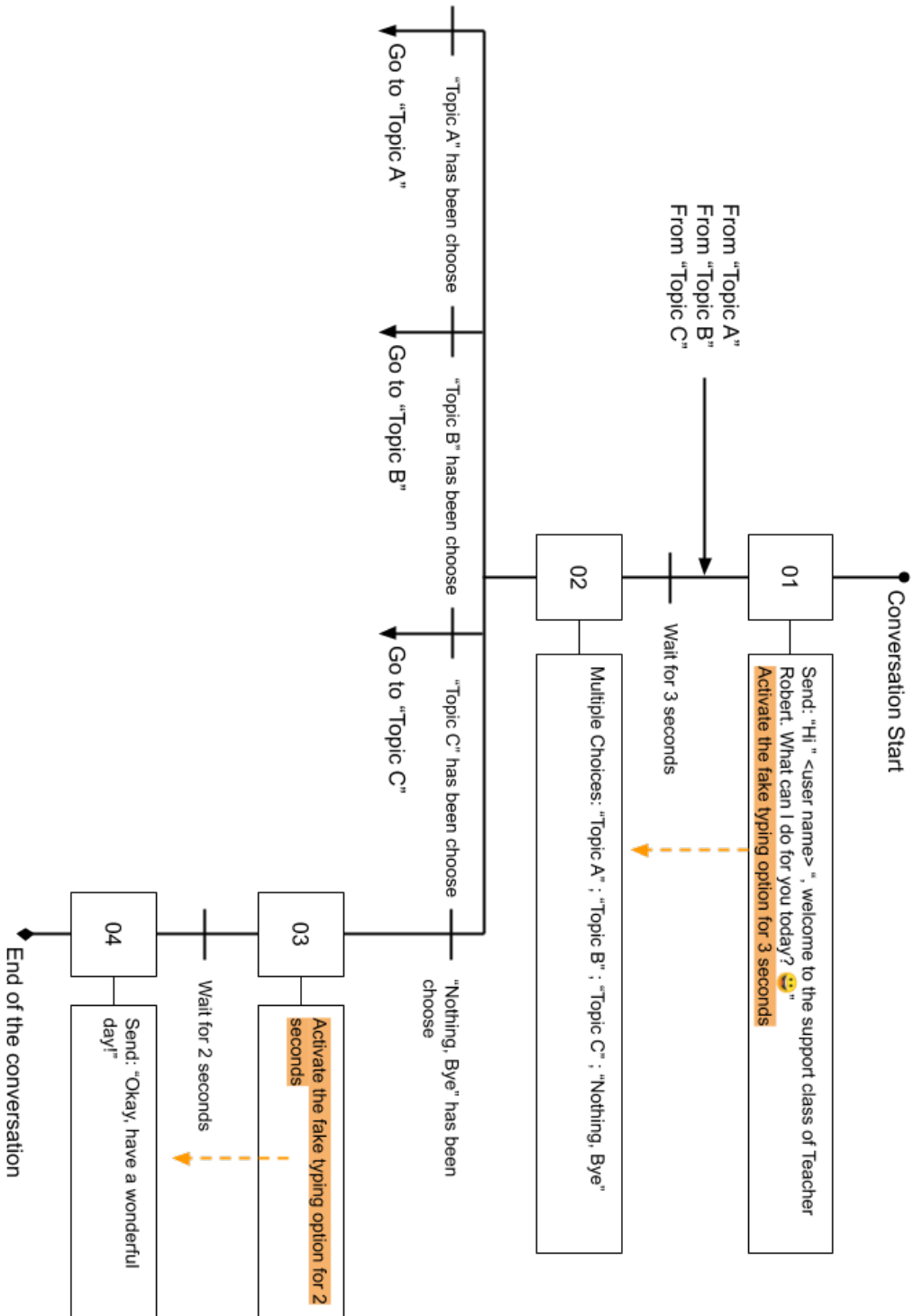
# ANNEXES

## 1. Architecture (global view)

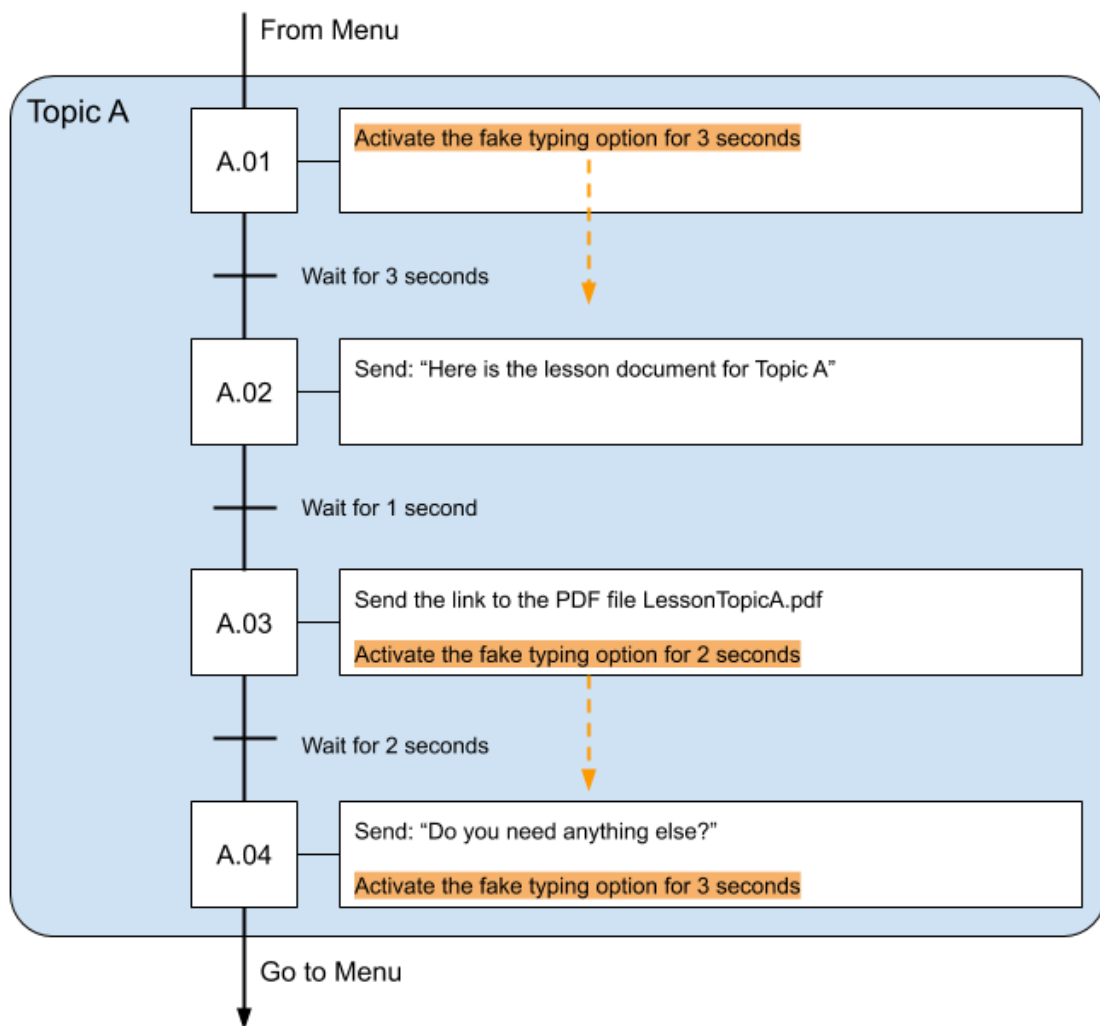


## 2. Detailed architecture

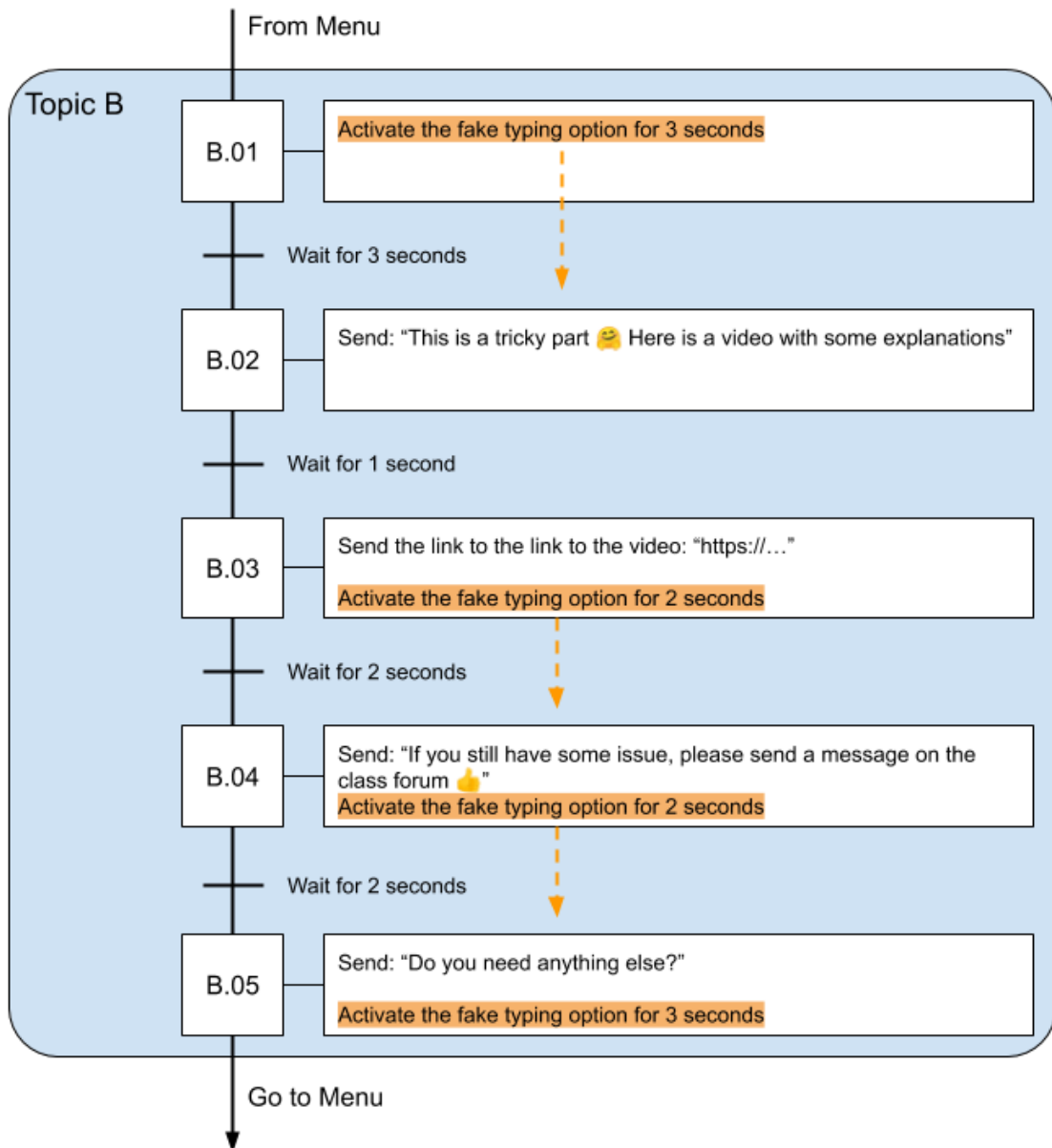
### a. Main core



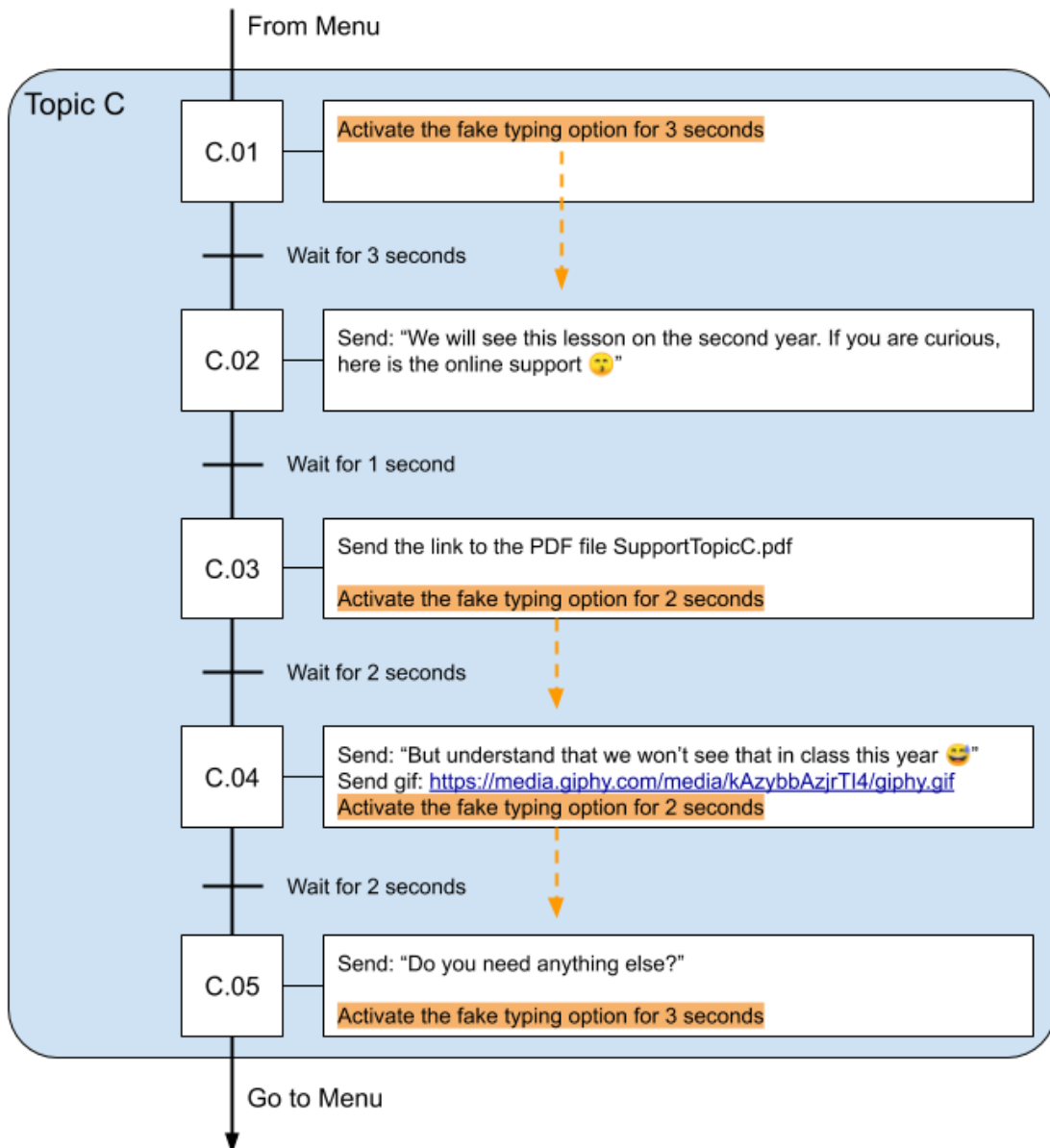
## b. Topic A



## c. Topic B



## d. Topic C





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Project code: 2018-1-BE01-KA202-038594



<http://mrwinstonchatbot.eu/>



#MrWinstonchatbot



Mr Winston the chatbot



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