

Guidelines for the replication and exploitation of the **DIVETOUR CHATBOT** training

“Artificial Intelligence
tool (Accessible Tourism
chatbot) on new skills for
the future of tourism”

[DIVETOUR](#) project



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01

Introduction

One of the main outcomes of DIVETOURL project has been the development of a prototype of a CHATBOT (an “artificial intelligence” driven programme), as an “access guide” of an hotel, to be used and explored by students and trainers of accessible tourism, and as inspiration for tourism providers to become familiar with the digital domain and new IT services applied to improve their accessible offer. The main elements and material to experience the “DIVETOURL CHATBOT” are available on the project online platform “Open Learning Community” (OLC) together with the DIVETOURL outcomes - Game-based Web app on accessible tourism and DIVETOURL cMOOC - and targeted to tourism VET beneficiaries, both students, trainers and operators in the tourism sector.

The DIVETOURL CHATBOT was implemented with the aim of involving students in the experimentation in Spain, Italy and Lithuania to learn about Accessible Tourism for All in a different way, discovering how to implement an innovative product, which is being introduced in the tourism field as in many other domains. This chatbot is designed to inform potential customers about the accessibility features of a tourism facility, in this case, a hotel. It gives trainees an understanding of the concept of “service design”, the expectations of clients, and the importance of the information given, related to the different access needs of tourists.

The objectives set for the realisation and testing of the DIVETOURL CHATBOT were confirmed by the phase of development of this advanced training system.

According to the report on the testing activities made in Spain, Italy, and Lithuania, 62 students, (both of initial and continuous VET) attended the testing of the chatbot.

All students completing the chatbot testing answered feedback questionnaires to evaluate their interest in the learning approach, the information given both on accessible tourism and on the chatbot’s logics, the usefulness of the experience for their studies, present or future work. The results are all very positive between “good” and “very good” scores, and they confirm the partnership’s main expectations:

1. the topic of the accessible CHATBOT IMPLEMENTATION was largely accepted and considered as extremely interesting for both the tourism VET providers /learners and the tourism industry as a different approach (using the principles of “service design”) to understand the needs of clients, the need for the right information and innovative ways to communicate;
2. the need for training on these issues is of utmost importance for a qualified offer of tourism services to all potential customers, including

- seniors and people with specific access requirements;
3. the need of using technology which is accessible both to demand and offer is important and in line with the Digital pillar of the “Tourism Transition Pathway” set by the European Commission.

This success, confirmed by the outcomes of the Chatbot Testing assessments, highlights the need, already pointed out in the project application, for the experience gained in developing accessible tourism training in some EU Member States to be transferred to other European countries and regions; taking advantage of the methods tested by the DIVETOURL partnership and making the training resources replicable and available to a wider audience.

These Guidelines describe how the DIVETOURL CHATBOT implementation and testing system may be replicated, the discipline to which the interested stakeholders have to refer, the conditions set by the partnership to protect Intellectual Property Rights and the visibility of the EU Commission funding.

Sections of the Guidelines refer to the possibility of:

- adaptations to the local national situation and/or to specific end users;
- translations of the DIVETOURL CHATBOT training material and inclusion of national documentation;
- the conditions to give visibility to the DIVETOURL CHATBOT’s specifically created toolkit (Training Kit, Chatbot installation files, Chatbot’s Training Activities presentations, Training tools, etc.).

The Guidelines also provide suggestions and conditions for possible technical implementation in the replication process.

Finally, the evaluation of costs involved in any possible activity of building the chatbot based on new data sets for different tourism providers, either with the support of the actual partnership or autonomously, under specific licences is considered.

DIVETOURL project team places great importance on the possibility of transferability of its training products as this will make the solutions available to many actors, with a wide variety of tourism products thus becoming more inclusive. This would be a valuable contribution towards the strategic goal of making European tourism *Accessible for All*.

02 Overview

Overview of the DIVETOIR CHATBOT

An important goal of the DIVETOIR project was to introduce digital learning materials and to make Artificial Intelligence tools more familiar to trainers and students, as they are becoming an integral part of our life as users and as workers.

The chatbot developed by the project is a simple and effective Artificial Intelligence tool that could be useful in the tourism sector to enhance the quality of information and communication with customers on inclusion and accessibility issues.

The objective of DIVETOIR's chatbot is to make teachers and learners aware of the logic behind these tools, and the different ways they can support customers with specific access requirements.

Of the various possible informative chatbots that could be developed for this purpose, the partnership decided to concentrate on a typical tourism facility comprising a number of "challenges" for tourists with specific access requirements, a hotel. Hotels are already integrating non-human bots on their websites, and this type of service is becoming more common as it can be an economic and efficient solution for hotels, having a machine answering customers' questions which do not need a real person answering live. A very important choice for the development of the project's bot was to find a reliable dataset as the content of the information given by the bot. The "access guide" of an existing hotel was chosen, to base the testing of the tool on reality. The partnership developed a chatbot giving information on the accessibility conditions of [Gleneagle Hotel](#), in Killarney, Ireland: this hotel participates in a Certified Access Scheme and has a documented [Access Statement](#) (or access guide) in which all the features of the hotel that relate to accessibility are listed, such as the width of the hallways, the presence of steps in the lobby, the availability of parking spaces for people with disabilities, and so on.

"Our mission is to become Ireland's leading leisure provider offering universal access for all. We believe everyone should be treated equally regardless of age, size, ability or disability including long or short-term health conditions and to provide a welcoming environment for all. We are committed to making all our facilities, services, information, communication, ICT and employment accessible."



Mission Statement

The project partners initially, and then learners, were involved in the chatbots' production, by imagining scenarios and possible information needed by "personas" or customers with specific access requirements, linking it to the available information in the hotel's access statement. Finally, the learners were asked to check the proper functionality of the chatbot and to understand if it was necessary to programme it further or to realise modifications.

A series of exercises/activities were developed to test the functionality of the chatbot and at the same time to learn how chatbots work and how they can be implemented.

The set of tools that are available for the use of the DIVETOURE CHATBOT are the following:

1. instructions to use the chosen open-source software used to build the chatbot (BotPress), with links to the software and to guides for "local" installation;
2. file Package to upload the DIVETOURE CHATBOT plus instructions;
3. training kit – Chatbot Logics Presentation;
4. training activities presentation to test the chatbot;
5. excels to complement the training activities to test the chatbot.

The material is useful for both trainees and trainers. The way the experimentation was made shows that the organisation of a group of trainees guided by trainers could be the best solution, as interaction between students can enhance the outcomes, while an experienced trainer can preview which of the proposed exercises is more useful for the level of the group.

03 Benefits

Benefits for future users and takeaways for other stakeholders

Benefits for future users

The activities related to the analysis “in the box” of the DIVETOURE CHATBOT have several benefits for participants. They allow for flexibility, as the main condition for participation is having an internet connection. Depending on the trainees’ availability, progress in the self-learning can be measured at any time. Thus, it saves the time and the costs of travelling to training centres, and allows the learner to stay at their homes/business when needed.

Depending on the previous knowledge of the users and group of users, the DIVETOURE CHATBOT training can be a unique experience or a complement to one of the other products of DIVETOURE (the WebApp, the cMOOC and its training materials).

The specificity of the DIVETOURE CHATBOT is teaching the learners a number of concepts related to technology and IT and the logics of “service design” applied to an informative chatbot. These skills can be used in the context of a new service for a tourism provider or facility like a hotel, a restaurant or tourism agency, as existing chatbot services used by the employer’s company. An existing chatbot can be implemented with a set of information related to accessibility, and the learner will be used to this kind of activity (how to gather information, how to upload it in a chatbot, how to use the chatbot to retrieve accessibility information for clients).

At the same time, the DIVETOURE CHATBOT material can be a very useful tool for trainers who:

- want to test the ability of the learners to understand the needs of people with different disabilities in a real context (an hotel of which we know the accessibility features);
- want to use the service design principles to teach learners how to respond to the clients’ needs;
- want to teach how IT can be used help tourism suppliers and clients with specific access requirements.

Takeaways for other stakeholders

The necessity of knowing the accessibility features of publicly accessible places is equally important for other areas of everyday life beyond tourism. The basic principles of the training can therefore be used much more broadly in society than only in tourism.

Whenever it is important to give information on the accessibility and use of a service, a product or the experience of an event, there is always

the need to anticipate the access needs of users and to know how to use the available information to solve issues, to facilitate procedures, to enable ease of use and alleviate the stress of users.

When chatbots are well programmed and built on up-to-date and reliable accessibility information, they can be very useful to a wide range of visitors, including seniors, families with small children and persons with long-term health conditions.

04 Further use

Who could make further use of the DIVETOURL CHATBOT?

The chatbot developed by the DIVETOURL partnership has been developed in order to benefit a wide range of tourism VET providers and tourism professionals, not only during but also after the official end of the project.

Besides the possibility that the DIVETOURL partnership may re-launch a further experimentation of a chatbot, taking into consideration the achievements reached together with the help of the trainees and the very fast developments of IT and AI (in the time of writing this document the use of powerful programs like ChatGPT or other AI based on big datasets), the partnership considers that the CHATBOT tools could be highly beneficial to various other entities, including but not limited to:

- national/local tourism related professional associations in any field of tourism activity;
- educational and vocational training centres or institutions offering schooling in relation to tourism and hospitality management;
- European Networks in contact with tourism professionals.



Useful for

Associations X

SMEs X

VET Providers X

Students X

Teachers X

05 Ways to make further use

What are the ways to make further use of the training tools implemented for the training and testing of the DIVETOURL CHATBOT?

a. General overview

The training kit comprising all tools available to install, use and test the DIVETOURL CHATBOT can be further used and eventually developed in various ways (see also the related conditions described further below):

- the training material will be available within the CHATBOT section of the project OLC <https://divetour.eu/chatbot/> well beyond the official end of the project, thus it is there for further consultation;
- the CHATBOT materials - Training Kit, Chatbot installation files, Chatbot's training Activities presentations, Training activities tools - can be translated / replicated as they are and be integrated in various training programmes at national / local level;
- the CHATBOT training material can be translated / replicated and further enriched by references to national / local requirements and / or best practice examples of tourism establishments;
- references to the additions shall be made clear indicating the sources that are different from the DIVETOURL's own, original content;
- a shortened set of information (quoting parts of the contents) is also possible, to integrate parts in other existing training programmes.

Below (in point b. and chapter 7) there is a detailed description on the different training materials developed and the conditions that apply to their further use.

b. Detailed description

The Chatbot developed by partners with open-source software Botpress

The chatbot developed by the project is built with the use of an open-source programme called BotPress. The chatbot has not been uploaded for its use online as costs for its maintenance are too high to be covered by partners, but also because its use offline, uploaded on a local computer, gives users, learners and trainers more control over it, and the possibility to "dive" into the mechanism that makes it work.

On the chatbot page of the OLC, it is possible to download the programme and guides to install it. There is also the possibility, for expert users, to start a new chatbot, but it is recommended for training purpose to download the DIVETOURL CHATBOT files to be used for testing.

The following steps are then requested (explained in the page):

1. download the package of files - they are the source files of DIVETOURL's chatbot;
2. click on "Import Existing" and select the file package just downloaded;
3. train the chatbot to recognize users' human language.
4. open the chat window;
5. start writing to the chatbot and follow the dialogues by clicking the different buttons and, when there is a chance, writing your questions directly.

The chatbot can be freely used with the content (the "access guide" of Gleaneagle Hotel) uploaded and the logics used by the project to guide through the functional spaces and services of the tourism facility. It is recommended to test the chatbot only after having read the [Guide on the Use of Chatbots](#), developed by the partners, so as to understand how to take the most advantage of it.

There can be the possibility of shaping a chatbot on the content of another "access guide" of a tourism facility, but for help in its development, contacts with the partnership must be taken as this activity would go beyond the project's scope and it implies further work and efforts to be foreseen.

Sample of DIVETOURL chatbot conversation

The screenshot shows a chatbot interface with the following conversation:

- Chatbot:** Hello! I'm Divi, the chatbot of DIVETOURL project . My responsibility is to help you to find information about the Gleaneagle Hotel's accessibility.
- User:** What information are you looking for?
- Chatbot:** Of course!
- User:** What information are you looking for about the restaurant?
- Chatbot:** Great! I can tell you different information about the accessibility of our restaurant, including:
 - Type of service
 - Restaurant access
 - Door type
 - Entrance width
 - Buffet counter height
 - Space between tables and chairs
 - Type of tables
 - Lighting
- User:** All you need to do is to type your question!
- Chatbot:** Tables are rectangular. Free height under the table for knees is 71cm or 64cm depending on the tables.
- User:** Is this what you were looking for?

At the bottom, there are three buttons: "Yes, thank you! 🙏", "Keep asking questions 🗨️", and "Back to previous menu 🏠".

The training activities developed to test the DIVETOURL CHATBOT

The DIVETOURL CHATBOT page of the OLC comprises also a number of tools to perform a number of activities to use and test the chatbot, learning more about service design, accessibility needs, and natural language driven chatbots.

The material is formed by:

1. a presentation of the three proposed Training Activities;
2. Activity1 Spreadsheet: Asking questions to the chatbot playing one of the given “personas”;
3. Activity2 Spreadsheet: Reflecting on the importance of each information provided by chatbot for the different personas;
4. Activity3 Spreadsheet: Writing “utterances” to feed the chatbot’s database and its ability to recognise customers’ questions.

All material is free to use as it is linked to the DIVETOURL CHATBOT testing. In case users would like to use/adjust these tools to test a new chatbot developed for different purposes, it will be possible quoting the DIVETOURL project which developed the original tools.

Macroarea	Area	Intent	Answers	Utterance 01	Utterance 02	Utterance 02
Restaurant Breakfast room	Venue space and characteristics	Buffet counter height	The height of self-service counters is 72cm.	.....	.....	.....
Restaurant Breakfast room	Food and beverages	Menu formats	Large print menus are available. Pictorial menus are available.	.....	.....	.....
Main entrance	Access	Alternative accessible entrance	The main entrance is accessible for all guests.	.....	.....	.....
Accommodation Guest rooms	Accessible guest rooms	Door width	The clear opening width of the guestroom door is 84 or 86cm, depending on the room.	.....	.....	.....
Parking	Parking	Route surface	The pavement surface of the route to the entrance is made of asphalt and slate paving stones.	.....	.....	.....

Sample of Activity3 Spreadsheet

06 Replication

Conditions of replication and use of the DIVETOIR CHATBOT and its testing activities

In the following tables we are summarising, according to possible replications of the DIVETOIR CHATBOT, whether they might be carried out from a legal point of view, their opportunity to be developed, how to proceed for the replications and who should be contacted to do so.

As presented in the previous paragraphs, the main possibilities to replicate the DIVETOIR CHATBOT testing have been identified as:

- use of the Chatbot developed by partners with the open-source software Botpress;
- use of the training activities and tools developed to test the DIVETOIR CHATBOT.

Different possible actions have been foreseen, to prepare possible stakeholders who might want to use, modify, or otherwise exploit the training tools developed by the project. A general description for these possible actions is to be found in the tables below. Furthermore, the partnership is making the training content developed in the framework of the project available under the general conditions described in the tables below.

Use of the Chatbot developed by partners with the open-source software Botpress

Action	Possible YES/NO	How do i proceed?	Who do I contact?
Use and or translate the chatbot as it is	Yes	As the chatbot content is made within the European project and is already available through the project, it is possible to use it without modifying it for other purposes quoting the owners (the European Commission and the partnership of DIVETOURE). In case of translation, please mention "translated from the English original". Please note that Botpress is not implemented in 12 of the most used languages, while there is the possibility to add more natural language extensions. It has to be checked by the users.	There is no need to contact the partnership. The partnership would be pleased to be informed of any use of the produced material. Please contact DIVETOURE partnership through https://divetour.eu/contacts/
Changing the content (the information of the tourism facility)	Yes, but it requires work and knowledge	It is possible to programme the chatbot to answer with information coming from a different set of data (for example the access guide of another hotel). It is a long process and it is not recommended to do that without the advice of the partnership. As it would be a very different outcome, a mention of the initial chatbot, the name of the project and EU programme would be appreciated.	Contact with the partnership in case of advice needed as the case implies consistent work. The partnership would be in any case pleased to be informed of any new chatbot inspired by the DIVETOURE ONE. Please contact DIVETOURE partnership through https://divetour.eu/contacts/
Writing new questions for the chatbot	Yes	It is possible as it is part of the job of the chatbot. The chatbot itself may learn more natural language "utterances" and it will remain available on the local server of the user.	-
Making the DIVETOURE chatbot available for direct online use	No	The partnership decided not to have an online usable version of the chatbot. Moreover the content of the CHATBOT "the access guide of Killarney Hotel" is available thanks to a kind agreement with the hotel, so further contacts should be taken.	Please contact DIVETOURE partnership through https://divetour.eu/contacts/

The training activities developed to test the DIVETOURL CHATBOT

Action	Possible YES/NO	How do i proceed?	Who do I contact?
Use the training tools as they are	Yes	As the tools are made within the European project and are already available online, it is possible to use them without modifying them for other purposes quoting the owners (the European Commission and the partnership of DIVETOURL).	<p>There is no need to contact the partnership, when the tools are used as they are.</p> <p>The partnership would be pleased to be informed of any use of the produced material.</p> <p>Please contact DIVETOURL partnership through https://divetour.eu/contacts/</p>
Translate the tools	Yes	It is possible to translate the tools (already available in Italian, English, Lithuanian, Spanish, Slovenian), quoting the authors and owners (the European Commission and the partnership of DIVETOURL).	<p>There is no legal need to contact the authors, but DIVETOURL partnership would be pleased to track any use of its material.</p> <p>The partnership would be pleased to be informed of any use of the produced material.</p> <p>Please contact DIVETOURL partnership through https://divetour.eu/contacts/</p>
Modify the content of the activity tools	Yes	It is possible to partly modify the content of the activity tools but would be desirable to quote the original work, the project and the authors.	<p>There is no legal need to contact the authors, but DIVETOURL partnership would be pleased to track any use of its material.</p> <p>Please contact DIVETOURL partnership through https://divetour.eu/contacts/</p>

07 Business opportunities

As already mentioned, all products and services developed within the DIVETOURL project have to be open and available for users without any fee. It is a consequence of the fact that DIVETOURL is a European project funded by the Erasmus plus programme. Hence, everybody interested in gaining knowledge and improving skills in accessible tourism, and preparing an adequate tourist offer, has the freedom to use the DIVETOURL CHATBOT and its testing tools, provided that he or she meets some basic requirements specified in the previous parts of the document (e.g. registering, respecting Intellectual Property Rights etc.). It needs to be emphasised that the project partnership is obliged to assure open access to the outcomes of the project, namely, educational materials. However, it does not include the software with which the chatbot has been developed, as this is not an outcome itself, but an open-source software used by the project on which DIVETOURL has no right and no responsibility in case of policy changes, software development and future compatibility.

Moreover, the testing activity on the CHATBOT is an activity and not a content, while the tools are made available for possible trainers or for self-learning.

Thus, there should be no procedural barriers for the partnership to make profits by running CHATBOT training and testing initiatives using DIVETOURL materials. Importantly, the content of the CHATBOT and its tools would be still available for free on the DIVETOURL Open Learning Community even during running of the CHATBOT experimentation. But participants of a DIVETOURL CHATBOT experimentation would be offered additional services, such as:

- tutoring – it is much more productive to learn when one has a possibility to use a tutor's knowledge and skills, and to learn not only from the educational materials, but also through direct interactions with experts;
- help of administrators and experts – in case of any doubts or possible technical problems, one does not need to worry, one can just contact with an administrator; one would be also informed about any important things related to the course;
- exchanging best practices – this kind of relation is very important allowing a mutually beneficial discussion that can help to improve one's business performance and avoid mistakes;
- chances for new business contacts – if someone is looking for business partners to carry out some common undertaking, the CHATBOT TESTING experience in class can seem to be also a good chance.

In conclusion, performing a training session on the Accessible Tourism Chatbot and its testing enriches its value proposition to a significant extent.

Benefits for potential customers wishing to organise an Accessible Tourism Chatbot learning experience are therefore:

- being supported by administrators and experts;
- getting in touch with the peers.

As already said, the skills gained by carrying out the CHATBOT learning experience (service design, linking demands of tourists and services supplied, the logics behind the chatbots) can be used by persons wanting to work in the tourism sector not only to implement existing chatbots or helping companies doing them, but also to understand better what clients with specific access requirements ask for and to be able to cater for them and give the right information.

Currently, it is possible to outline basic personal and non-personal costs related to particular services that can be offered within the CHATBOT.

A table below presents a few examples.

Service	Cost
Tutoring	Tutoring, up-to-date materials and information, self-preparation, gaining experience in the field.
Help of CHATBOT administrators and experts	Monitoring and providing help and information.
Testing	Up-to-date knowledge, developing evaluation skills, preparing tests, distributing tests, managing a process, developing IT skills, checking tests.
Shaping a new chatbot with different information	Choosing a new tourism facility around which to build an accessible tourism chatbot, or audit a tourism facility to develop an access guide. Organising the information to create the chatbot logic stream. Preparing a first set of utterances (the questions of users leading to the available answers of the chatbot).
To obtain an offer for making a new Accessible Tourism CHATBOT learning experience, the DIVETOIR partnership can be contacted through the project website at: https://divetour.eu/contacts/ .	



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