

## CHATBOTS

### Introduction

- ✚ A chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone.
- ✚ A chatbot can be either a simple rule-based engine or an intelligent application leveraging Natural Language Understanding (NLU).

### Why are Chatbots important

- ✚ A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines.
- ✚ However, from a technological point of view, a chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP).
- ✚ Chatbots are becoming quite popular now a days because it will available **24\*7/365** days.
  - Provide a consistent customer experience
  - Can handle several customers at a time.
  - Cost-effective and hence, results in a better overall customer experience

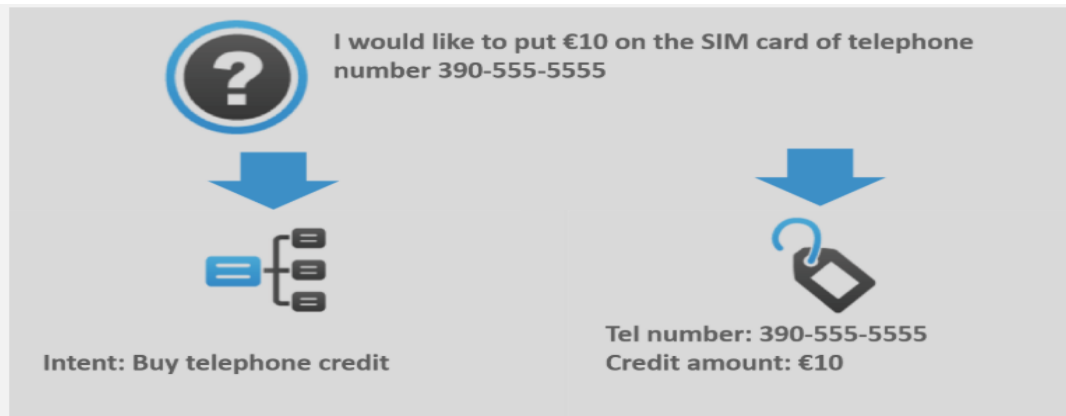
### How a chatbot works

- ✚ There are two different tasks at the core of an any chatbot can do:
  1. User request analysis
  2. Returning the response




**How a Chatbot Works:** As you can see in this graphic, a chatbot returns a response based on input from a user. This process may look simple; in practice, things are quite complex.

- ✚ **User request analysis:** this is the first task that a chatbot performs. It analyzes the user's request to identify the user intent and to extract relevant entities.



**How a Chatbot Works:** Example of user request analysis.

- ✚ The ability to identify the user's intent and extract data and relevant entities contained in the user's request is the first condition and the most relevant step at the core of a chatbot:



✚ If you are not able to correctly understand the user's request, you won't be able to provide the correct answer.

✚ **Returning the response:** once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request.

✚ The answer may be:

- ❖ a generic and predefined text
- ❖ a text retrieved from a knowledge base that contains different answers
- ❖ a contextualized piece of information based on data the user has provided
- ❖ data stored in enterprise systems
- ❖ the result of an action that the chatbot performed by interacting with one or more backend applications.
- ❖ a disambiguating question that helps the chatbot to correctly understand the user's request