Recipe Chatbot

Sophia Zell
sophia.zell@informatik.uni-hamburg.de

Emy Arts
emy.arts@informatik.uni-hamburg.de

***Abstract*—The purpose of this paper is to present a chatbot that handles a recipe / cooking environment and selects the right recipe based on the users needs**

I. Introduction

We tend to use less and less analogue things in our everyday life. It is part of the digital age that there are apps for everything. But who has the actual memory for all the apps. Smartphone applications that serve the mere purpose to provide information can easily replaced by a chatbot. Chatbots do not all provide information, they can also serve a different purpose and they can be classified either based on this purpose or based on the way they have been developed. A classification based on their functionality could be made as follows:

- Information retrieval: these chatbots provide their interlocutor with information retrieved from a database or from the web. An example of these kind of chatbots is Siri.
- Use in a company: this can be for example a customer service and support or internal functionality
- Conversational purpose: these chatbots serve the mere purpose of having a conversational partner. A well known example of this kind of chatbot is ELIZA which will be presented more in detail throughout the paper.

A chatbot can be integrated into messenger services such as telegram or facebook messenger or can be integrated in a website, application or other software program (????an app is considered a software program right????). With the use of a chatbot some additional applications can become redundant. Furthermore when it comes to information retrieval the interaction with chatbots is much more natural than with an application as it somewhat follows the flow of a natural conversation. In this paper, an information retrievel chatbot is developed. The goal of this chatbot is to retrieve a suitable recipe based on time or ingredients which the user inputs.

II. Approaches

In figure 1 the system is described as a finite state automata. For the automata the user's answers were devided into subsentences. For the seperation of the answer the following characters or strings are used: ',', '.', 'and' or an emoticon. After the user's answer is devided into subsentences every subsentence is classified as follows:

- greeting: the initial greeting to the chatbot
- ingredient: the comunication of an ingredient that the user wishes to use.
- time: a time unit within which the user wishes to prepare the dish
- name: the name of the recipe the user wishes to prepare.
- yes: a positive answer to a question asked by the chatbot.
- no: a negative answer to a question asked by the chatbot.
- ϵ: no more other subsentences in the current sentence provided by the user.
- other: a subsentence that is not possible to classify.

The elements of this classification provide the alphabet of our finite automata.

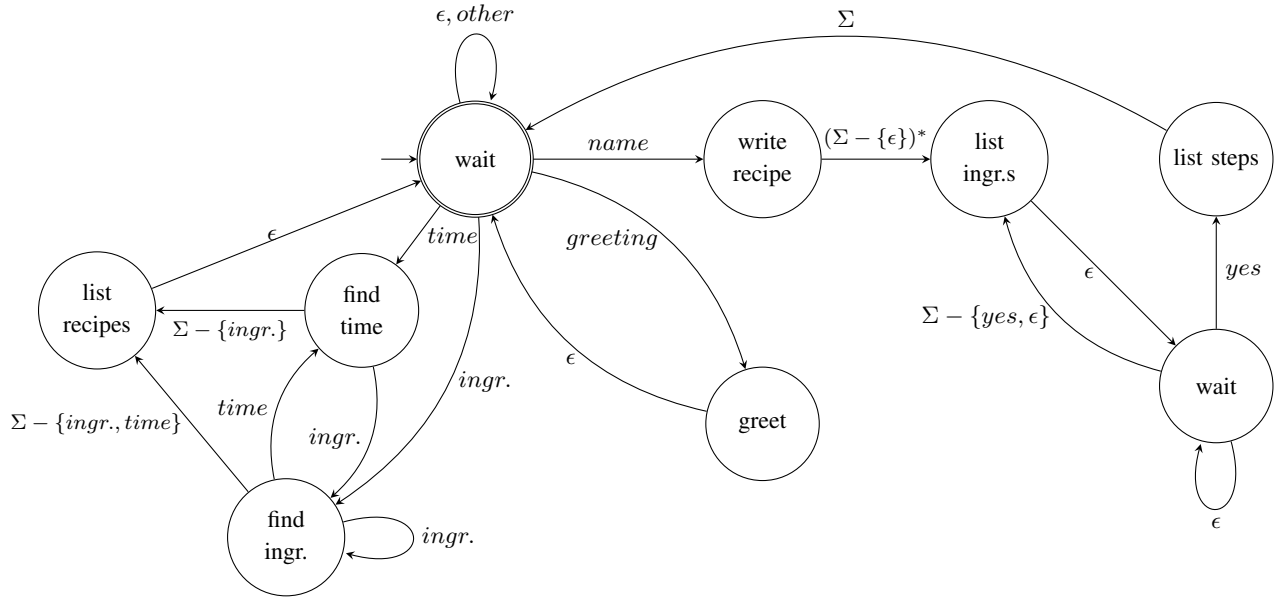

Figure 1. Non deterministic finite state automata

The NLTK toolkit will be used and the following articles will be used to base this work on [1],[3] and [4] [2]

III. Results/Analysis

IV. Conclusion

References

[1] Guillaume Baudart, Martin Hirzel, Louis Mandel, Avraham Shinnar, and Jrme Simon. Reactive chatbot programming. n Proceedings of the 5th ACM SIGPLAN International Workshop on Reactive and Event-Based Languages and Systems (REBLS 18), 2018.

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[4] Shih-Hung Wu, Liang-Pu Chen, Ping-Che Yang, and Tsun Ku. Automatic dialogue template synthesis for chatbot by story information extraction. 2018 IEEE International Conference on Information Reuse and Integration (IRI), 2018.