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Bachelor Thesis - Synopsis

Chatbots: Development and Application

There have been many headlines about chatbots in recent time; yet still few people use them in their daily lives. That makes it uncertain in which businesses chatbots and their conversational user interfaces may be an improvement over the current, graphical interaces.

In this thesis I would like to develop a chatbot specifically with the goal in mind to create a product people would actually use. Additionally, building on the experience of implementing a practical chatbot, I would like to research what applications chatbots are most suitable for and under which circumstances a chatbot is less benefitial.

The Application

There are many applications to study language and vocabulary. However, I have not yet found any software that suits my personal learning strategy:

- The software should not be restricted to specific languages.
- I would like to decide which words to learn and the software should let me add my own vocabulary.
- Most of the time, I want to memorize phrases or idioms instead of individual words.
- I often need to look up translations. It would be convenient if the software supports translating and remembers my queries for later memorization practice.
- Often, I would like to look up something in the vocabulary I created. The software should be easily searchable.
- When repeating vocabulary it helps me to see my progress. It would be motivating to have statistics for my learning progress.

Structure

First, I define what a chatbot is.

Next, I research on chatbots that have been created in the past and find out which ones have been successful and which ideas did not work.

Then I give an overview of the current situation: Which platforms are there? Are there already any successful applications?

With prior knowledge, I will then start developing my own chatbot. I will first define which use cases I intend to cover and which components are required.

After having a basic concept I will describe how one could implement the application as a classic (browser-based) application. This version will only remain theoretical and serves as a reference for

a subsequent comparison.

Development

I design a concept for a conversational user interface, which combines the individual features of the application.

When the design is finished, I decide on which platform it is most suitable to implement the application first and which other platforms would be good canidates to support later.

After that I determine which programming language and which other development tools should be used.

To control the chatbot you will be able to use explicit commands, since all major platforms support them. Additionally you should be able to use natural language as well. The aim, however, is not to develop a generally intelligent system; it's only necessary to support discussions in the problem domain. Hence I don't plan to build a whole new language processing system; I will use an existing system instead.

During my work on the practical implementation, I document the process including problems that occurred, approaches I dismissed, and how I tested the application.

After I present the finished product, I would like to compare the chatbot with the classic application:

• What limitations does the chatbot have?
• Which features were not possible to implement?
• Are there elements that are not intuitive to use?
• Were there any issues with development?

Furthermore:

• What are the advantages of the chatbot approach?
• How does the user benefit from the conversational user interface?
• Which implementation is easier to use?
• Which steps of the development process have been simpler?

Finally, I would like to give an outlook into the future:

• How can I further develop the language studying application?
• What new platforms could be interesting for this product?
• Which other applications are chatbots useful for?
• How might the platforms themselves evolve?