

Assignment - ACR 2

* TITLE: Elementary chatbot

* PROBLEM STATEMENT: Develop elementary chatbot for suggesting investments as per the customer's need.

* OBJECTIVE: To develop a basic chatbot to recommend investments.

* OUTCOME: Developed chatbot for investments.

* SOFTWARE AND HARDWARE REQUIREMENTS: NLTK, Python 3; 64 bit CPU, UNIX/LINUX OS, 8 GB RAM.

* THEORY:

A chatbot is a software application used to conduct an online chat conversation via text or text-to-speech in lieu of providing direct contact with a live human agent. They are designed to convincingly simulate the way a human would behave as a conversationalist.

In order to successfully do the above, the following things should be taken care of

- 1) Understand the target audience.
- 2) Understand the natural language in which communication occurs.
- 3) Understand the intent of the user.
- 4) Come up with responses that can answer user & give further clues.

NLTK (Natural Language Toolkit) is a platform for building python programs to work with human language data.

- It includes easy to use interfaces like text processing libraries.
- Most importantly, it has a module, `nltk.chat`, which simplifies building conversational engines by providing a generic framework.
- The libraries are imported from `nltk.chat.util`, & include the `chat` class & the `reflections` class. It processes the conversation b/w user & bot.
- 'Reflections' is a dictionary; that when a value in a regex group members matches a key in dictionary, it will output value in response.
- Next we have `variable pairs` which is a list of tuples. The first item in the pair is `pattern`, which can be string, or a regular expression.

The next item is a list of possible responses. chat will randomly select a response if the pattern matches the user input. The default response is 'None'.

When the chat class constructor is passed the custom-defined 'pairs' variable algorithm the predefined 'reflections' dictionary, on calling the 'converse' method of the chat class, the chatbot is automated.

* CONCLUSION:

Successfully implemented an elementary chatbot that gives investment recommendations.