Software Engineering - Experiment 2

Topic – Healthcare Chatbot

Branch – Computer Science and Engineering Cyber Security(CSE-TE)

Prepared by :

51 Sejal Singh

52 Vaibhav S Singh

68 Atufa Shaikh

69 Arfeen Sudhozae

Title : Data Flow Diagram (DFD)

Tools Used:

1.Natural Language Processing (NLTK).
2.Python ArtiFicial Intelligence Markup Language (PyAIML)
3.Pattern Matching
4.Regular Expressions
5.Kivy Python Graphics Library

Introduction:

The concept of chatbots has not been a new in this technological growing society. Our project acutely deals with an important section of this growing entity, focusing the usage of the chatbots in the field of education, especially higher education. The current model of the project is made to handle the growing student population in the country, helping streamline the process of the admissions across various institutes across India. The model deals on a real time basis with the students clearing the rings of doubts in minds of students over the whole admission procedure. Currently students rely on the knowledge of parents, relatives and acquaintances and obviously the ranking institutes as well questionnaire sites like Quora, to know about any specific institute. It is not practically feasible for the institutes to fix up a real time doubt clearing assistant to assist the admission seekers. This is where our chat bot comes to the aid. It is designed to meticulously help students discover the institutes which they desire to go. The bot works on the real time data provided by the institutes itself to increase reliability and increasing transparency for students. We would like to increase the scope of the project in line with the e-governance(Digital India) drive of the government towards introducing chatbots across the various departments of the government. It can drastically help reduce the red tapes, making services meant for the common people, more accessible to them.

We are trying to implement a Domain Specific Knowledge System working on the area of the personal assistance required during counselling procedure. Another added advantage of the current module would come in the form of lowering of burden on the individual institutes which comes in the form of thousands of calls and emails, which are hard to manage considering the seasonal nature of counselling and no specific staff for it. Thus considering the vast scale of admissions here, the chatbot seems to be a big burden reliever if implemented on a large scale with efficient approach, helping thousands choose the best and most suitable for them.

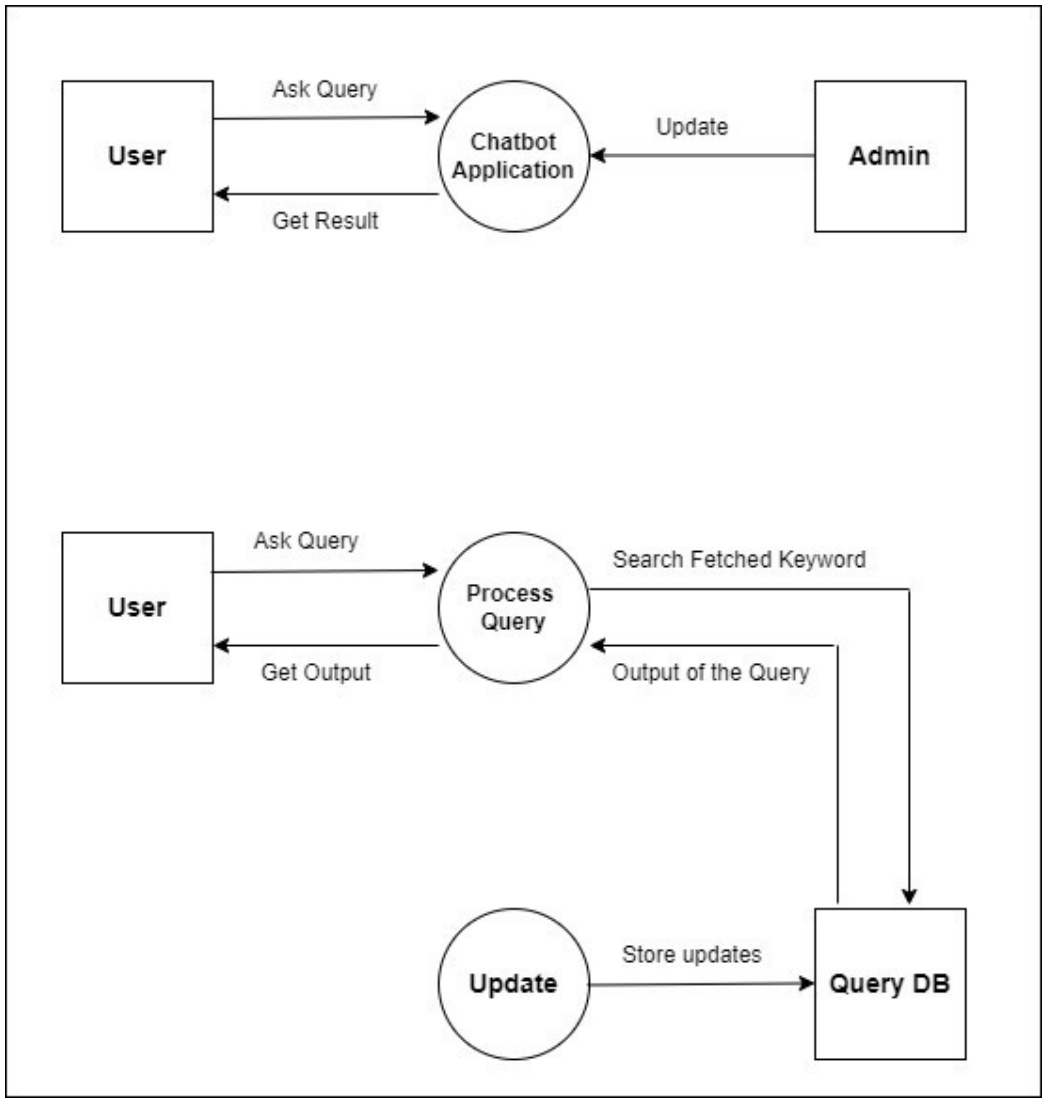
Conceptual framework:

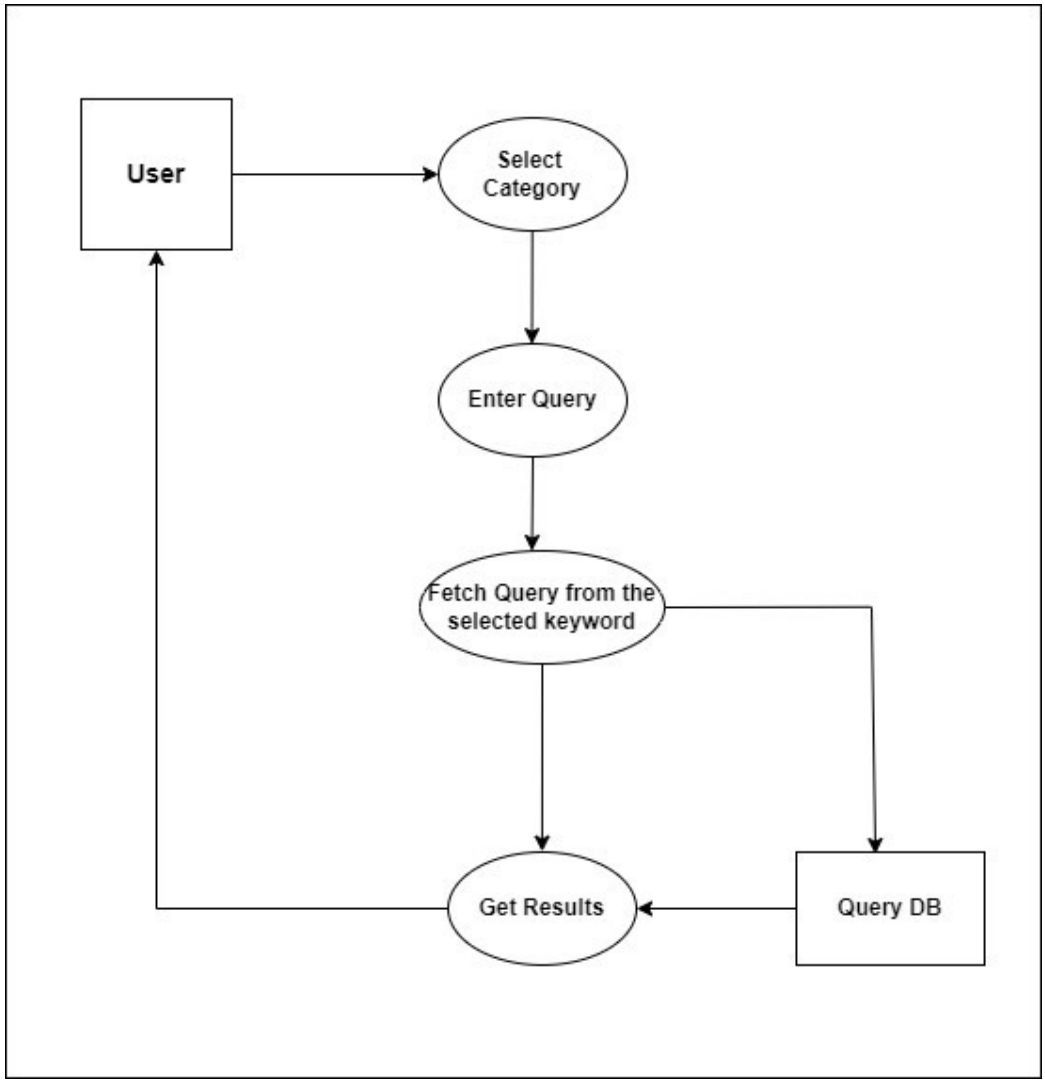
The current chatbot handles the input queries by the users including the greetings. The bot is presently restricted to a specific institute i.e. it can handle queries related to one institute. One possible future off shoot of the project can be making the bot compatible to handle many institutes at a time, making it eligible to handle queries regarding multiple institutes at a single window. The answers initially may be related to the general data of the institute as info about professors, placements and research stats but later it can incorporate the reviews of various users and the feedback by different students, parents, alumni and any other related member of a specific institute.
The current system responds to queries in three categorised ways:
1.Salutations: Responses to the greeting by the users in an addressable manner, making it user friendly.
2.Domain Specific Responses: These include responses regarding the specific institutes being inquired for.
3.Apologetic Responses: These include responses to queries which seem tough to retrieve, being quietly answered with an apologetic response.

We will be using Python as programming language along with AIML (Artificial Intelligence Markup Language) to do pattern matching for response selection.
The following phases have been involved in making of this bot.
Training Phase:
We used Natural Language Processing library NLTK to process raw queries (training set) and convert them into a set of synonymous words (reduced query). This in short describes the context/concept of the query. The golden rule here applies, more data, better results.

The expected answer to such reduced query is known and we use this knowledge to generate aiml/xml ?les for pattern matching purposes.

Pattern Matching Phase:
User input is again broken down to a reduced query using NLP and we used AIML ?les generated from phase 1 to Find the closest possible pattern existing in our database for which the answer is known.If such pattern exists information is retrieved from the database or the bot tries to stall the conversation to keep the user interested or apologize for the inability to answer.


User
Ask Query
Chatbot Application
Update
Admin
Get Result
User
Ask Query
Process Query
Search Fetched Keyword
Get Output
Output of the Query
Update
Store updates
Query DB



Correction Parameters	Formative Assessment [40%]	mely completion Practical [40%]	Attendance / arning Attitude [20%]	
Marks obtained				