# Minor Research Project

on

# Student Information Chatbot

Final Report
Submitted to

P P Savani University

Surat

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# CERTIFICATE

This is to certify that Mr. Savani Jaykumar, Enrollment No. 18SS02IT031 from the Department of B. Sc.IT , has successfully completed the Minor Project on the Student Information Chatbot during Dec, 2019-May, 2020.

Date:

Name and Sign of Supervisor

Dean, SOE

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# ABSTRACT

Automatic conversation system is an intelligent human machine interaction using natural language. Main goal of it is to allow the user and machine to make a natural harmonious conversation. Thus, enabling the machine to recognize human motivation and to respond accurately, is not only an important manifestation of advanced intelligence, but also a very challenging work in harmonious human interaction field. A conversation system consists of speech recognition, speech synthesis, and dialogue management and conversation generation. In this research, we focus on automatic generation of conversation between a computer and a human being with little knowledge of the computer. In this paper, we influenced a PC to end up a preparation to accomplice of a man who isn't great at discussion, to wind up a band together with a man. Therefore, in this research, we are focusing specifically on “chat" by developing which converse mainly by using Python. Our main focus, is to build a Student chat bot which helps the colleges to have 24*7 automated query resolution. This helps the users to have the right information from the source.

# INDEX

# List of Figures/Tables

# CHAPTER 1
# INTRODUCTION

## 1.1 Introduction

This A chatbot.[1] is a computer program which conducts a conversation via textual method. Such programs are often designed to convincingly simulate how a human would behave as a conversational partner, thereby passing the Turing test. Chat bots are typically used in dialog systems for various practical purposes including user service or information acquisition. This system which will provide answers to the queries of the users.

User interfaces for software applications can come in a variety of formats, ranging from command-line, graphical, web application, and even voice. While the most popular user interfaces include graphical and web-based applications, occasionally the need arises for an alternative interface. Whether due to multi-threaded complexity, concurrent connectivity, or details surrounding execution of the service, a chat bot-based interface may suit the need.

Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. Chat bots are usually a stateful services, remembering previous commands (and perhaps even conversation) in order to provide functionality. When chat bot technology is integrated with popular web services it can be utilized securely by an even larger audience.

## 1.2 Problem introduction

Creating a chatbot able to answer every single question about This chatbot is not possible to implement with current technology and within the duration of the project, so the system will be able to answer questions about limited topics. The system will only support questions in standard English.

## 1.3 Motivation and Objective

This Chatbot receives questions from users, tries to understand the question, and provides appropriate answers. It does this by converting an English sentence into a

# CHAPTER 1

# INTRODUCTION (continue)

machine-friendly query, then going through relevant data to find the necessary information, and finally returning the answer in a natural language sentence. In other words, it answers your questions like a human does, instead of giving you the list of websites that may contain the answer. For example, when it receives the question "what is the age of Ravi", it will give a response “I prefer Registration numbers. Since you have been good to me, I'll show the results: Age of Ravi is 21” The goal is to provide chatbot students and faculty a quick and easy way to have their questions answered, as well as to offer other developers the means to incorporate Chatbot into their projects.

# CHAPTER 2

# REQUIREMENT SPECIFICATION

## 2.1 Introduction

It takes a lot of work to turn a chatbot idea into a project. In fact, it requires a complete step-by-step chatbot strategy starting from goal definition to publishing and maintenance.

Once the bot is deployed for end users, it's important to keep a check on its performance and continue to refine its natural language understanding through further training. The bot should be aware if a user is authorized and properly authenticated to chat with it. This ensures that the bot is able to provide the right set of relevant services for a particular user.

## 2.2 Hardware requirements

- Processor – i3
- Hard Disk – 5 GB
- Memory – 1GB RAM

## 2.3 Software requirements

- Windows 7 or higher
- Excel
- Spyder or Pycharm or IDLE

# CHAPTER 3
# ANALYSIS

## 3.1 Existing System

The creation and implementation of chatbots is still a developing area, heavily related to python so the provided solutions, while possessing obvious advantages, have some important limitations in terms of functionalities and use cases. However, this is changing over time. As the database, used for output generation, is fixed and limited, chatbots can fail while dealing with an unsaved query. But this chat bot cannot fail the user can type query if the query cannot match with data so chat bot will massage; I do not understand your questions. there are many popular chatbot in marketing for example Alexa it works on the voice bot that resulted in largest revenues in our chat bot reply with text form and quick replay all information form data. Analytics are often overlooked and underappreciated when it comes to chatbots. While chatbot analytics are unlikely to make or break the success of a chatbot, they can provide valuable insight into opportunities for information about data allowing chatbot can help reply with text of users.

## 3.2 Proposed System

A student information chatbot project is built using artificial algorithms that analyses user's queries and understand user's message. users just have to query through the bot which is used for chatting. The answers are appropriate what the user queries. The user does not have to personally go to the college for enquiry.

# CHAPTER 4

# DESIGN

## 4.1 System Design

A Chatbot refers to a chatting robot. It is a communication simulating computer program. It is all about the conversation with the user. The conversation with a Chatbot is very simple. It answers to the questions asked by the user. During designing a Chatbot, how does the Chatbot communicate to the user? And how will be the conversation with the user and the Chatbot is very important. The design of a Chatbot is represented using diagram as follows:

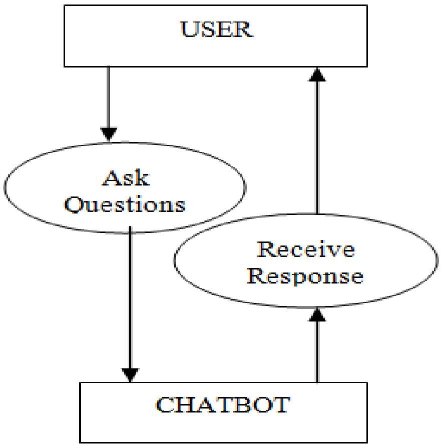

Fig.4.1: Use Case Diagram of Chatbot Design

In today's world computers play an important role in our society. Computers give us information; they entertain us and help us in lots of manners. A chatbot is a program designed to counterfeit a smart communication on a text or spoken ground. But this paper is based on the text only chatbot. Chatbot recognize the user input as well as by using pattern matching, access information to provide a predefined acknowledgment. For example, if the user is providing the bot a sentence like "What is your name?" The chatbot is most likely to reply something like "My name is Chatbot." or the chatbot replies as "You can call me Chatbot." based on the sentence given by the user. When the input is bringing into being in the database, a response from a predefined pattern is given to the user. A Chatbot is implemented using pattern comparing, in which the order of the sentence is recognized and a saved response pattern is acclimatize to the exclusive variables of the sentence. They cannot register and respond to complex questions, and are unable to perform compound activities.

# CHAPTER 4

# DESIGN (continue)

### 4.1.1UML Diagrams of our project

UML is a general-purpose modelling language. The main aim of UML is to define a standard way to visualize the way a system has been designed.

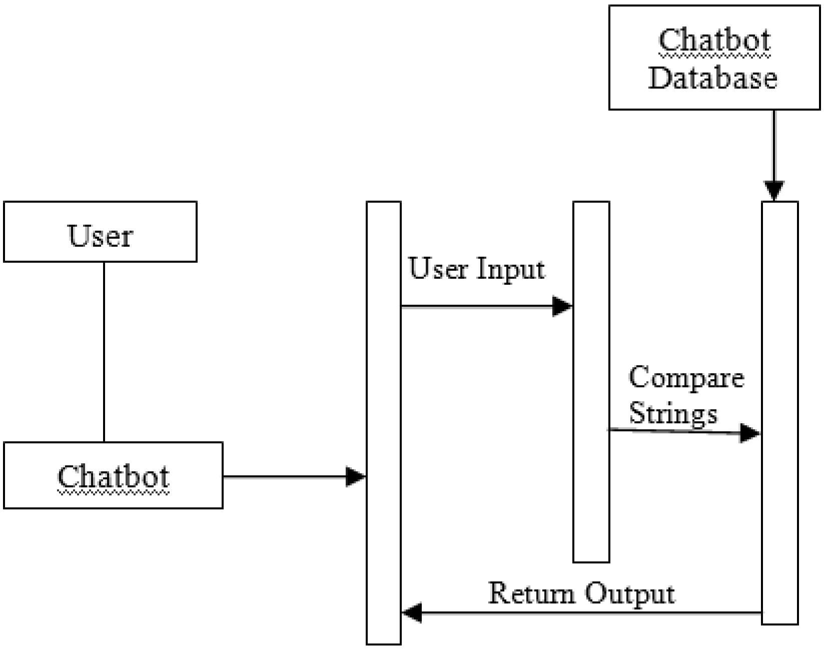

Fig. 4.2: Sequence Diagram Representing UML of the Chatbot

In this diagram can show User Communicate with Chatbot and User can input the Questions. The Chatbot can receive the User Input and Compare Strings with Chatbot Database and Return Output.

# CHAPTER 5

# SYSTEM IMPLEMENATION (continue)

## 5.1 Sample code

```
from chatterbot import ChatBot
from chatterbot.trainers import ChatterBotCorpusTrainer
from chatterbot.trainers import ListTrainer

import pandas as pd

# Importing the dataset
dataset = pd.read_csv('student_dataset.csv', sep=',')

d_sex = dataset['Sex']
d_age = dataset['Age']
d_regno = dataset['RegNo']
d_name = dataset['Name']
d_marks = dataset['Marks']
d_mobno = dataset['MobNo']

# Create a new instance of a ChatBot
bot = ChatBot(
    "Terminal",
    storage_adapter="chatterbot.storage.SQLStorageAdapter",
    logic_adapters=[
            "chatterbot.logic.MathematicalEvaluation",
        {
            'import_path': 'chatterbot.logic.BestMatch'


        },
        {
            'import_path': 'chatterbot.logic.LowConfidenceAdapter',
 'threshold': 0.50,
          'default_response': 'I am sorry, but I do not understand.'
        }
    ],
    input_adapter="chatterbot.input.TerminalAdapter",
    output_adapter="chatterbot.output.TerminalAdapter"
)

lowest_name = ''
lowest_regno = ''
topper_name = ''
topper_regno = ''
no_of_failures = 0
failures = ''
no_of_people_90 = 0

for i in range(0,len(d_marks)):
    if d_marks[i] == min(d_marks):
        lowest_name = d_name[i]
        lowest_regno = d_regno[i]

    if d_marks[i] == max(d_marks):
        topper_name = d_name[i]
        topper_regno = d_regno[i]

    if d_marks[i] < 40:
        no_of_failures = no_of_failures + 1
        failures = failures + ', '+ d_name[i] +' ('+d_regno[i]+')'
```

# CHAPTER 5

# SYSTEM IMPLEMENATION (continue)

```
 if d_marks[i] >= 90:
     no_of_people_90 = no_of_people_90 + 1



bot.set_trainer(ChatterBotCorpusTrainer)
bot.train("chatterbot.corpus.english")
bot.set_trainer(ListTrainer)
for i in range(0,len(d_marks)):

  bot.train([
       "Give me the complete details of {}".format(d_regno[i]),
       "\nHere are the details:Registeration No.: {}; Name: {}  Age: {}  Sex: {}  Marks: {}
Mobile No.: {}".format(d_regno[i], d_name[i], d_age[i], d_sex[i], d_marks[i], d_mobno[i]),
       "complete details of {}".format(d_regno[i]),
       "\nHere are the details:Registeration No.: {}; Name: {}  Age: {}  Sex: {}  Marks: {}
Mobile No.: {}".format(d_regno[i], d_name[i], d_age[i], d_sex[i], d_marks[i], d_mobno[i]),
  ])

  bot.train([
     "what is the marks of {}".format(d_regno[i]),
     "Marks of {} - {} is {}".format(d_regno[i], d_name[i], d_marks[i]),])
  bot.train([
     "what is the age of {}".format(d_regno[i]),
     "Age of {} - {} is {}".format(d_name[i], d_regno[i], d_age[i]),])
  bot.train([
     "what is the mobile number of {}".format(d_regno[i]),
     "Mobile number of {} - {} is {}".format(d_regno[i], d_name[i], d_mobno[i]),])
  bot.train([
     "what is the marks of {}".format(d_name[i]),
 "I prefer Registeration numbers.. Since you have been good to me, I'll show the results :
Marks of {} - {} is {}".format(d_regno[i], d_name[i], d_marks[i]),])
    bot.train([
        "what is the age of {}".format(d_name[i]),
        "I prefer Registeration numbers.. Since you have been good to me, I'll show the
results :Age of {} - {} is {}".format(d_name[i], d_regno[i], d_age[i]),
        ])
    bot.train([
        "what is the mobile number of {}".format(d_name[i]),
        "I prefer Registeration numbers.. Since you have been good to me, I'll show the
results :Mobile number of {} - {} is {}".format(d_regno[i], d_name[i], d_mobno[i]),
    ])

bot.train([
  "what is the class average?",
   "The class average is {}".format(sum(d_marks)/len(d_marks))
])

bot.train([
  "what is the lowest marks?",
   "The Lowest marks is {}".format(min(d_marks))
])

bot.train([
  "how many failures?",
  "These many guys got below 40 {}".format(no_of_failures)
])

bot.train([
"who all failed?",
  "Sad.. But these people could'nt cross 40  {}".format(failures)
])

bot.train([
  "what is the highest marks?",
  "The highest marks is {}".format(max(d_marks))
])

bot.train([
  "who got the highest marks?",
  "The highest marks is {}, obtained by {} - {}".format(max(d_marks), topper_name,
topper_regno)
])

bot.train([
  "who got the lowest marks?",
  "The lowest marks is {}, obtained by {} - {} - Feel sad for the
chap".format(min(d_marks), lowest_name, lowest_regno)
])

bot.train([
   "Who all got above 90"
   "{}".format(no_of_people_90)
       ])

bot.train("chatterbot.corpus.english")

CONVERSATION_ID = bot.storage.create_conversation()
```

```
def get_feedback():
    from chatterbot.utils import input_function

    text = input_function()

    if 'yes' in text.lower():
        return False
    elif 'no' in text.lower():
        return True
    else:
        print('Please type either "Yes" or "No"')
        return get_feedback()



print("\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n\n
\n\n\n\n\n\n\n\n\n\n\nHi, I'm Silence - The Chatbot\nHere to help!\n\n")
from chatterbot.utils import input_function

while True:
    try:
        input_statement = bot.input.process_input_statement()
        statement, response = bot.generate_response(input_statement, CONVERSATION_ID)
        bot.output.process_response(response)
        print('\n')

    except (KeyboardInterrupt, EOFError, SystemExit):
        break
```

# CHAPTER 5

# SYSTEM IMPLEMENATION (continue)

## 5.2 Sample data

| RegNo | Name | Sex | Age | Marks | MobNo |
|---|---|---|---|---|---|
| 16BIS0068 | Yash | M | 19 | 91 | 9310148994 |
| 16BCB0011 | Hitanshu | M | 20 | 85 | 9855748964 |
| 16BME0205 | Paresh | M | 19 | 71 | 9585874695 |
| 16BNM2025 | Ravi | M | 20 | 72 | 7985643295 |
| 16BCE1450 | Anjali | F | 21 | 75 | 8585759545 |
| 16BIS0103 | Keshav | M | 20 | 80 | 9658965896 |
| 16BCS0001 | Aisha | F | 20 | 64 | 9856325623 |
| 16MIS2010 | Ankita | F | 18 | 90 | 9413652789 |
| 15BME0505 | Ravi | M | 21 | 13 | 9586478569 |
| 14BCL1003 | Sach | M | 22 | 39 | 9636963698 |
| 16BCI0501 | Hari | M | 20 | 40 | 9687412365 |
| 16BNI7465 | Saanchi | F | 20 | 65 | 9875461235 |
| 16BCY5469 | Shiva | M | 20 | 81 | 9696968596 |
| 16BEC4650 | Ambu | M | 21 | 70 | 9658522563 |
| 17BCV3205 | Nitya | F | 20 | 90 | 6985745896 |
| 16BME0999 | Aalind | M | 21 | 69 | 9812365478 |

Table5.1:sample data for chatbot

# CHAPTER 6

# CONCLUSIONS AND FUTURE SCOPE

In this project, we have introduced a chatbot for student information that is able to interact with faculty and student. This chatbot can answer queries in the textual user input. The main objectives of the project were to develop an algorithm that will be used to identify answers related to user submitted questions. To develop a database were all the related data will be stored and to develop a web interface. The web interface developed had one-part simple users. A database was developed, which stores information about questions, answers, keywords, logs and feedback messages. An evaluation took place from data collected. after received feedback from the first deployment, extra requirements were introduced and implemented.

ADVANTAGES:

- This application saves time for the student as well as teaching and non-teaching staffs.
- User does not have to go personally to college office for the enquiry.
- Getting an instant response.
- Easy communication

## FUTURE SCOPE

1. Linguistic and conversational ability must improve.
2. Voice interface.
3. Faster problem solving
4. Better insights & consumer analytics

# REFERNCES

[1]Chatbot: chat robot, a computer program that simulates human conversation, or chat, through artificial intelligence. Typically, a chat bot will communicate with a real person.

[2]UML:The **Unified Modeling Language** (**UML**) is a general-purpose, developmental, modeling language in the field of software engineering that is intended to provide a standard way to visualize the design of a system.