A MINI PROJECT REPORT

On

GLA VOICE ASSISTANT

Department of Computer Engineering & Applications
Institute of Engineering & Technology

SUBMITTED TO:-
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SUBMITTED BY:-
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Declaration

We hereby declare that the work which is being presented in the Mini Project "**GLA Voice Assistant",** in partial fulfillment of the requirements for Mini-Project, is an authentic record of our own work carried under the supervision of **Dr. Robin Singh Bhadoria, Assistant Professor, GLA University, Mathura**.

Signature :

Ujjawal Tripathi

(2115990021)

Department of Computer Engineering and Applications
GLA University, Mathura
17 km. Stone NH#2, Mathura-Delhi Road, P.O. – Chaumuha, Mathura – 281406

CERTIFICATE

This is to certify that the project entitled **"GLA Voice Assistant"** carried out in Mini Project is a bona fide work done by **Ujjawal Tripathi (2115990021)** and is submitted in partial fulfillment of the requirements for the award of the degree B.Tech (Computer Engineering & Applications).

Signature of Supervisor:

Name of Supervisor: Dr. Robin Singh Bhadoria

Date:

ACKNOWLEDGEMENT

It gives us a great sense of pleasure to present the report of B.Tech project undertaken during 3rd year. We owe special debt of gratitude to **Dr. Robin Singh Bhadoria**, Assistant Professor, GLA University, Mathura for his constant support and guidance throughout the course of our work. His sincerity, thoroughness and perservance have been a constant source of inspiration for us. It is only his cognizant efforts that our endeavors have seen light of the day. We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department of computer science for their kind assistance and cooperation during the development of our project. Last but not the least, we acknowledge our friends for their contribution in the completion of the project. I would also like to thank all those who directly or indirectly supported or helped me in completing my project in time. I would like to express our gratitude towards my parents and members of my college for their kind cooperation and encouragement which helped me in completion of this project. All of them have willingly helped me out with their ability.

ABSTRACT

This project aims to provide a user friendly environment and a simple way to access information about GLA University. It is quite similar to the virtual assistants but a smaller version of it. This project will enable us to ask the question/queries which are related to GLA University Mathura. The project deals with two of the major qualities, The first is based upon asking the queries to the assistant in the form of both voice and verbal commands. The second consists of the answer that will be given by the assistant in the form of voice output as well as in the form of text too. This assistant helps us to get the required information with the help of single tap. You have to give the voice command to the application and then it responds according to the information stored in our dataset. We have used NLTK and python. In case question is not there in our dataset in that case it searches from the Google and gives the respective information which is popularly known as data scrapping. This application helps to provide information without even typing our query and just by giving voice input as to save the time and get the information without any wastage of time.

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INTRODUCTION

1.1 PROJECT PLAN

1.1.1 ABOUT THE PROJECT

Users primarily interact with the GLA Assistant through **natural voice**. In the same nature and manner as Google Now, the Assistant is able to search the Internet, give information about GLA University, and show information from the Wolfram|Alpha account. In this project, we are proposing a tool using Python, Data Analytics and NLTK that will give you information about GLA University. It will work in almost the similar way as the Google Assistant works. It will be effective and reliable and can easily be used. You can easily give command to the assistant by simply speaking your question or query. This tool can be easily accessed by the user by giving a voice command. It will be helpful in many ways. In this project we just simply give voice command as input and get the output as in voice and also in text form.
Google assistant works by listening to our questions and then works on that question by matching that with its dataset. Our project also works in the same way such that the questions asked are first matched with those present in our dataset and if they are present there then output is displayed on your screen and if it is not present then it makes a Google query and displays the answer according to that question.

1.1.2 Purpose

The purpose of this project is to make things easier the one who wants to know about our college. In our project the main key here is voice. This GLA Assistant uses voice recognition, speech synthesis and natural language processing (NLP) to provide a service through our application which we have implemented.
The implemented project recognizes voice and gives output based on our query. It can cover vast information about GLA and can also answer your query from searching with web with the help of wolframalpha. Apart from our dataset it can give other information also.

1.1.3 Future Scope

This project in future can be used in the similar way as the Google assistant is used. It will start working on just a single tap. It will work always run in your pc in background and will be available as you need it. In future you can open and close applications by using it. You can set reminders, open chrome, gallery etc.

1.1.4 Gathering Material

It involves finding key concepts of the course and gathering information about them. Developers might want to focus on the syllabus of the course to get a general idea of the main ideas and topics.
While working on the project we felt the need to know many newer things we never had worked upon so we take help from many sources listed below

1. Websites
   Some of the websites which were helpful while doing the project was:
   i. www.tutorials.com
   ii. www.geeksforgeeks.com
   iii. https://www.wolframalpha.com/
   iv. https://pypi.org/project/pyttsx3/
   v. https://www.nltk.org/

2. Text books
   i. Python Crash Course (online) by Eric Matthews
3. Mentor
   Our respected mentor Mr. Robin Singh Bhadoria
4. Software
   i. Python IDLE

1.1.5 The Background

The 1990s digital speech recognition technology became a feature of the personal computer with IBM, Philips and Lemout & Hauspie fighting for customers. Much later the market launch of the first smartphone IBM Simon in 1994 laid the foundation for smart virtual assistants as we know them today.
In 1997 Dragon's Naturally Speaking software could recognize and transcribe natural human speech without pauses between each word into a document at a rate of 100 words per minute. A version of Naturally Speaking is still available for download and it is still used today, for instance, by many doctors in the US and the UK to document their medical records.
In November 2014, Amazon announced Alexa alongside the Echo.
By the background of virtual assistants we can assume that the virtual assistants now are days very effective not only in communicating but have changed the prospective of technology. They are a part of several platforms like :

1. Into devices like smart speakers such as Amazon Echo, Google Home and Apple HomePod.
2. In instant messaging apps on both smartphones and via the Web, e.g. Facebook's M (virtual assistant) on both Facebook and Facebook Messenger apps or via the Web
3. Built into a smartphone independent of the OS, as is Bixby on the Samsung Galaxy S8 and Note 8.
4. In appliances, cars, and wearable technology.

Our project (GLA University) is just an approach to build such a type of virtual assistant usually a smaller version of it which is only based on the information regarding the GLA University.

1.1.6 Results and Evaluations

Until now the virtual assistants have primarily been confined to voice input and output. The results that can out after making the project is it enables us to deal with the audio format as well as the text format. The project GLA Assistant is completely bounded to the architecture, academic section, fee structure, available courses and fee structure which is completely related to the boundaries of the University only. The project is ready to respond to the questions, interact with the user using speech recognition and the text.

Evaluations

There is a justification for voice only confinement or can we enhance the user experience by adding a visual output. We hypothesized that providing a higher level of visual/auditory immersion would enhance the quality of user experience as it will provide a more interactive form of interface where the user will enjoy interacting with the assistant. More often, we can enhance the capabilities of the program by instilling the software and converting it into a IOT (internet of things) based software like most popularly assistants siri etc.
But here we will be needing the knowledge of most popular technologies, the software system, some hardware where we can code the program of the software.

1.2 ABOUT NLTK

NLTK is a leading platform for building Python programs to work with human language data. It provides easy-to-use interfaces to over 50 corpora and lexical resources such as Word Net, along with a suite of text processing libraries for classification, tokenization, stemming, tagging, parsing, and semantic reasoning, wrappers for industrial-strength NLP libraries, and an active discussion forum.
Thanks to a hands-on guide introducing programming fundamentals alongside topics in computational linguistics, plus comprehensive API documentation, NLTK is suitable for linguists, engineers, students, educators, researchers, and industry users alike.

NLTK is available for Windows, Mac OS X, and Linux. Best of all, NLTK is a free, open source, community-driven project.

NLTK has been called "a wonderful tool for teaching, and working in, computational linguistics using Python," and "an amazing library to play with natural language."

Natural Language Processing with Python provides a practical introduction to programming for language processing. Written by the creators of NLTK, it guides the reader through the fundamentals of writing Python programs, working with corpora, categorizing text, analyzing linguistic structure, and more. The online version of the book has been been updated for Python 3 and NLTK 3.

1.3 Python 3.6.0

1.3.1 Significant improvements in the standard library:

- A new file system path protocol has been implemented to support path-like objects. All standard library functions operating on paths have been updated to work with the new protocol.
- The datetime module has gained support for Local Time Disambiguation

.

1.3.2 Security improvements:

- The new secrets module has been added to simplify the generation of cryptographically strong pseudo-random numbers suitable for managing secrets such as account authentication, tokens, and similar.
- On Linux, os.urandom() now blocks until the system urandom entropy pool is initialized to increase the security. See the **PEP 524** for the rationale.

1.3.3 Windows improvements:

PEP 528 and PEP 529, Windows file system and console encoding changed to UTF-8.

- The py.exe launcher, when used interactively, no longer prefers Python 2 over Python 3 when the user doesn't specify a version (via command line arguments or a config file). Handling of shebang lines remains unchanged - "python" refers to Python 2 in that case.
- python.exe and pythonw.exe have been marked as long-path aware, which means that the 260 character path limit may no longer apply.
- A ._pth file can be added to force isolated mode and fully specify all search paths to avoid registry and environment lookup. See the documentation for more information.

1.3.4 New Features

- **PEP 498: Formatted string literals**
- PEP 498 introduces a new kind of string literals: *f-strings*, or formatted string literals.
- Formatted string literals are prefixed with 'f' and are similar to the format strings accepted by str.format(). They contain replacement fields surrounded by curly braces. The replacement fields are expressions, which are evaluated at run time, and then formatted using the format() protocol.

1.4 Libraries Used

1.4.1 Python Language

Python is advance an interpreted, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects. We use python language in our project in which we import some modules such as pyttsx3, wolfarmalpha, speech_recognition etc.

Python 3.7 is now released and is the latest feature release of Python. They plan to continue to provide bug-fix releases for 3.6.x though the end of 2018 and security fixes through 2021.
Python 3.6.0 is the newest major release of the Python language, and it contains many new features and optimizations. The dict type has been re-implemented to use a more compact representation based on a proposal by Raymond Hettinger and similar to PyPy dict implementation. This resulted in dictionaries using 20% to 25% less memory when compared to Python 3.5.

- Customization of class creation has been simplified with the new protocol.
- The class attribute definition order is now preserved.
- DTrace and System Tap probing support has been added.

1.5 Wolfram Alpha

Wolfram Alpha (also_styled **WolframAlpha**) is a computational knowledge engine or answer engine developed by Wolfram Alpha LLC, a subsidiary of Wolfram Research. It is an online service that answers factual queries directly by computing the answer from externally sourced "curated data", rather than providing a list of documents or web pages that might contain the answer as a search engine might.
Wolfram Alpha, which was released on May 18, 2009, is based on Wolfram's earlier flagship product Wolfram Mathematica a computational platform or toolkit that encompasses computer algebra, symbolic and numerical computation, visualization, and statistics capabilities. Additional data is gathered from both academic and commercial websites such as the CIA's The World Factbook, the United States Geological Survey, a Cornell University Library publication called All About Birds, Chambers Biographical Dictionary, Dow Jones, the Catalogue of Life, CrunchBase, Best Buy,[8] the FAA[9] and optionally a user's Facebook account.

1.6 Regular Expression

A RegEx, or Regular Expression, is a sequence of characters that forms a search pattern.
RegEx can be used to check if a string contains the specified search pattern.
Python has a built-in package called re, which can be used to work with Regular Expressions.
Import the re module. When you have imported the re module, you can start using regular expressions

A regular expression, often called a **pattern**, is an expression used to specify a set of strings required for a particular purpose. A simple way to specify a finite set of strings is to list its elements or members. However, there are often more concise ways to specify the desired set of strings. For example, the set containing the three strings "Handel", "Händel", and "Haendel" can be specified by the **pattern** H(ä|ae?)ndel; we say that this pattern **matches** each of the three strings. In most formalisms, if there exists at least one regular expression that matches a particular set then there exists an infinite number of other regular expressions that also match it—the specification is not unique. Most formalism provide the following operations to construct regular expressions.

1.7 Reflections

Reflection refers to the ability for code to be able to examine attributes about objects that might be passed as parameters to a function. For example, if we write type(obj) then Python will return an object which represents the type of obj.
Using reflection, we can write one recursive reverse function that will work for strings, lists, and any other sequence that supports slicing and concatenation. If an object is a reference to a string, then Python will return the str type object. Further, if we write str() we get a string which is the empty string. In other words, writing str() is the same thing as writing “”. Likewise, writing list() is the same thing as writing [].

1.8 Concept of data scrapping

Data scraping, also known as web scrapping, is the process of importing information from a website into a spreadsheet or local file saved on your computer. It's one of the most efficient ways to get data from the web, and in some cases to channel that data to another website. Popular uses of data scraping include:

- Research for web content/business intelligence
- Pricing for travel booker sites/price comparison sites
- Finding sales leads/conducting market research by crawling public data sources (e.g. Yell and Twitter)
- Sending product data from an e-commerce site to another online vendor (e.g. Google Shopping)

1.8.1 Data Scrapping v/s Web Crawling

Data Scrapping:

- Includes extracting data from various sources.
- Can be done at any scale
- Deduplication is not necessarily a part
- Needs crawling agent and a parser

Data Crawling:

- It refers to downloading pages from the web
- Mostly done at a large scale
- Deduplication is essentially a part
- Needs only crawling agent

1.8.2 Why data scrapping used in the GLA Assistant

As the first step to do in our project is to insert the data set from where the user will be able to find the answer to the queries been asked by him/her. Here the question arises that what if the user ask any question which is not at all present in our dataset? Here the program will not be able to respond anyhow. So to overcome this problem here we have used the concept of data scrapping as it will

provide us the solution for any queries which will ask the user regardless of the answer present in our data set or not.

Again here two things arises that if the answer is present in our data set then there is no need of using the scrapping part in case it turns the other way round the scrapping is ready to respond to it by searching/scrapping the websites and came out with the required results.

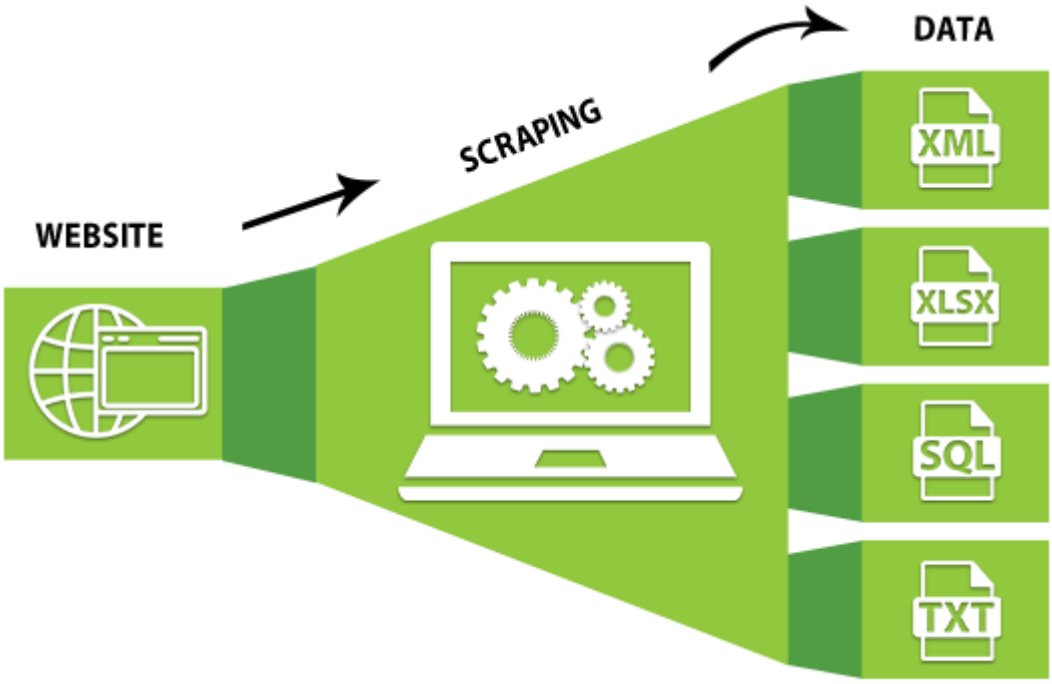


Fig.1

The figure represents that how the data is scrapped from the website or any other source using any parser and the required information is available in any format that we desire namely data in form xml file, xlsx file, sql or can be in text file etc.

- **The crawler**

Fig.2

A web crawler is generally called a **"spider."** It is an artificial intelligence technology that browses the internet to index and searches for the content by given links. It searches for the relevant information asked by the programmer.

The scrapper

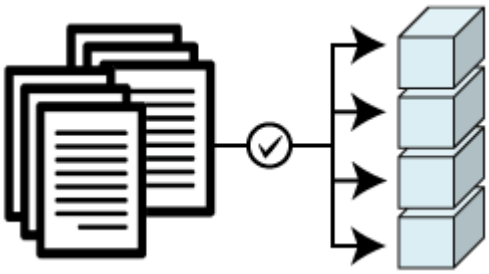


Fig.3

A web scraper is a dedicated tool that is designed to extract the data from several websites quickly and effectively. Web scrappers vary widely in design and complexity, depending on the projects.

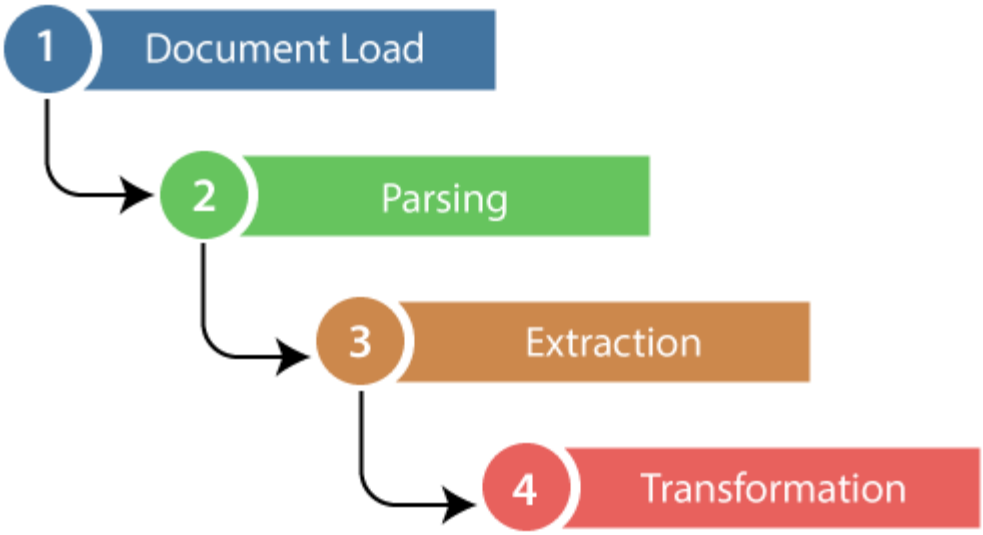


Fig.4
The figure represents the processes involved in the scrapping process.

Step -1: Find the URL that you want to scrape

First, you should understand the requirement of data according to your project. A webpage or website contains a large amount of information. That's why scrap only relevant information. In simple words, the developer should be familiar with the data requirement.

Step - 2: Inspecting the Page

The data is extracted in raw HTML format, which must be carefully parsed and reduce the noise from the raw data. In some cases, data can be simple as name and address or as complex as high dimensional weather and stock market data.

Step - 3: Write the code

Write a code to extract the information, provide relevant information, and run the code.

Step - 4: Store the data in the file

Store that information in required in any file format.

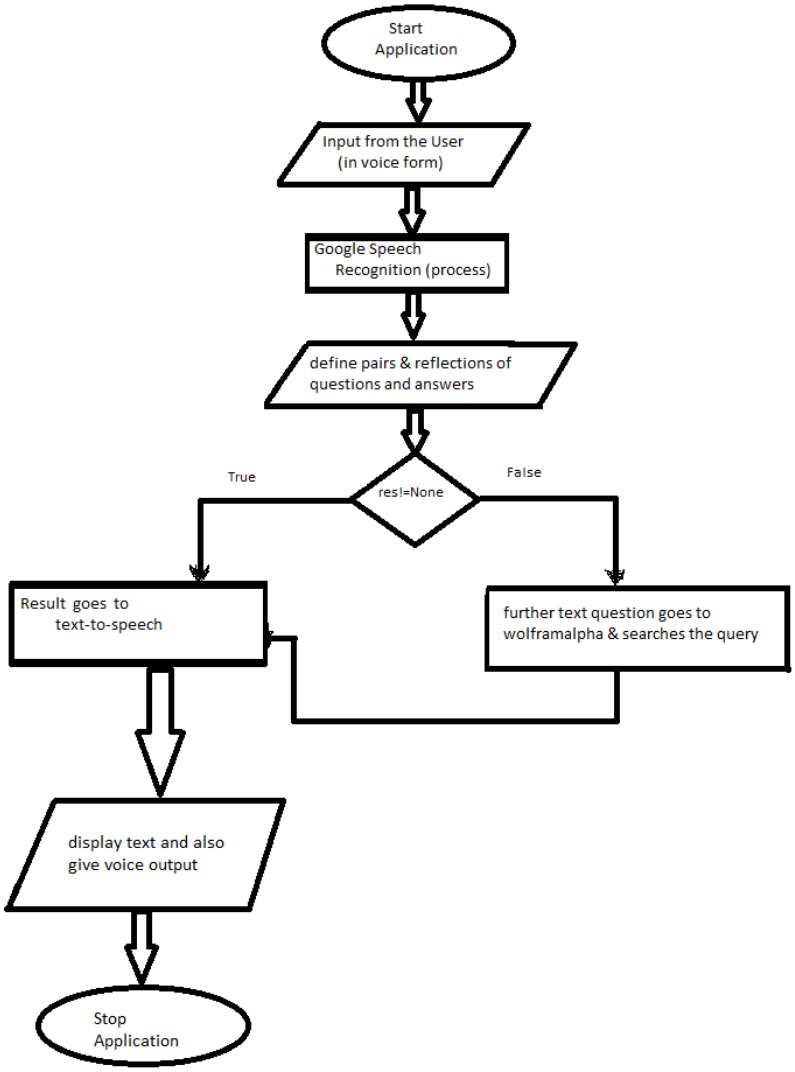
1.8.3 Scrapper code

```
#importing the BeautifulSoup Library
importbs4
import requests
#Creating the requests
res = requests.get("https://en.wikipedia.org/wiki/Machine_learning")
print("The object type:",type(res))
# Convert the request object to the Beautiful Soup Object
soup = bs4.BeautifulSoup(res.text,'html5lib')
print("The object type:",type(soup)
```

SPECIFICATION AND DESIGN

2.1 Flow Chart

Flow Chart

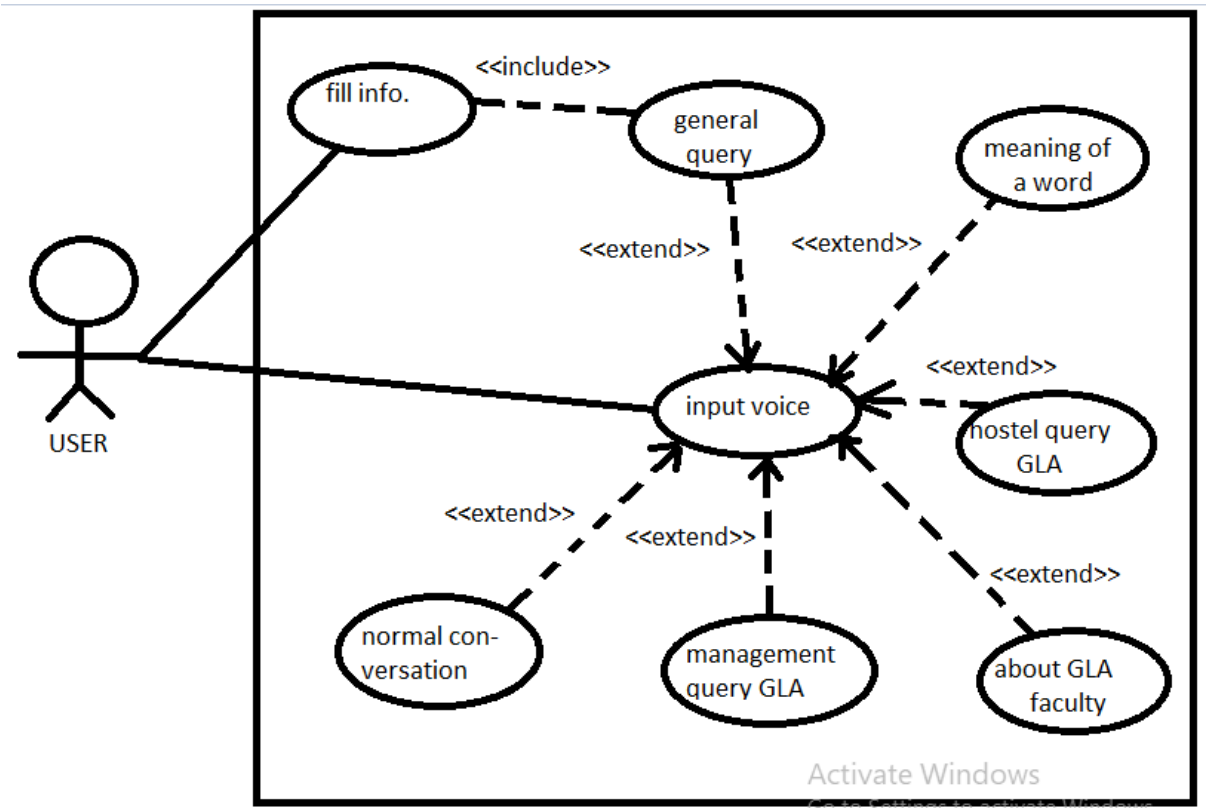


2.1.1 Flow Chart Explanation

The figure represents the main process involved in the project. Firstly it accepts the input in voice and text commands. There are many libraries which are working behind each step like for playing and audio there is an I/O library named as **pyaudio** which enables the user to play and record audio on a variety of platforms like windows or any other operating systems etc. After recording the query which is being asked by the user the process of conversion takes place either from text to speech and vice-versa. For this there is a library called **pyttsx3** and **speechRecognition.** The first one is responsible for you to synthesize text in to audio you can hear either it is a text to speech package. The latter one namely the **speechRecognition** is a speech to text package, it is responsible which enables the ability of a machine or a program to identify the words and phrases in spoken language and convert them into machine readable form. After the conversion as the dataset involves the pairs and reflections to answer the searching takes place from the dataset and the program provide the solution in case it turns the other way the scrapping part is responsible for searching the web and fetch out the required information and the required information which is asked by the user is displayed on the interface of the program. And here the program stops.

2.2 Use Case Diagram

USE CASE DIAGRAM

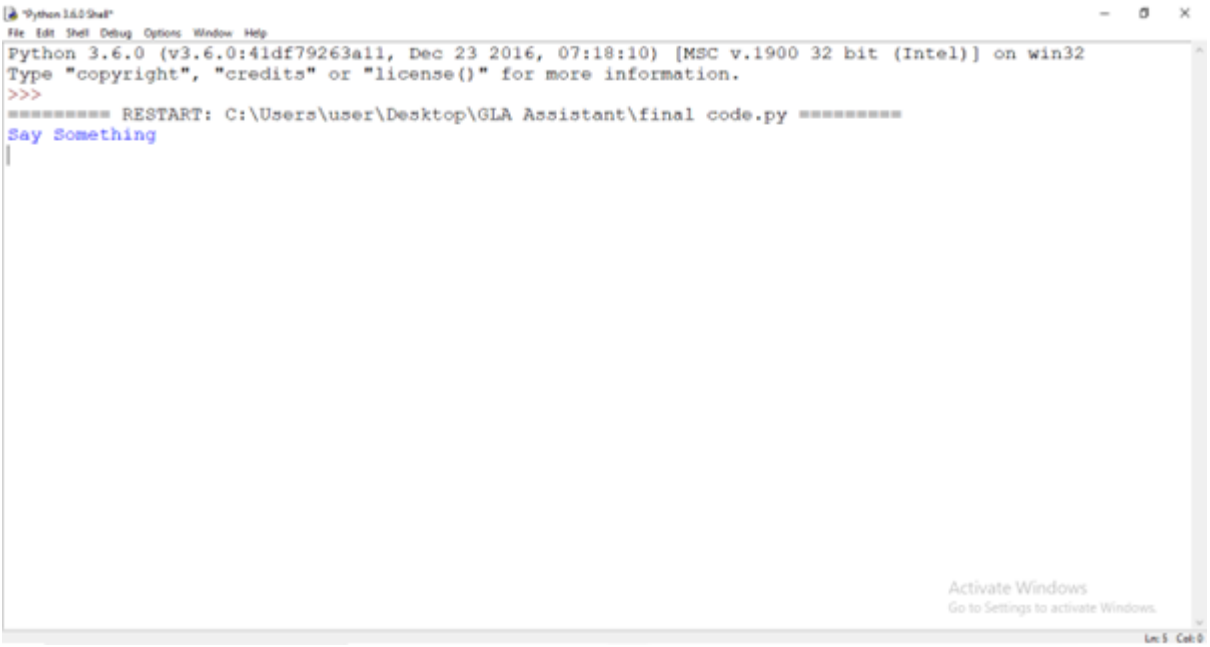


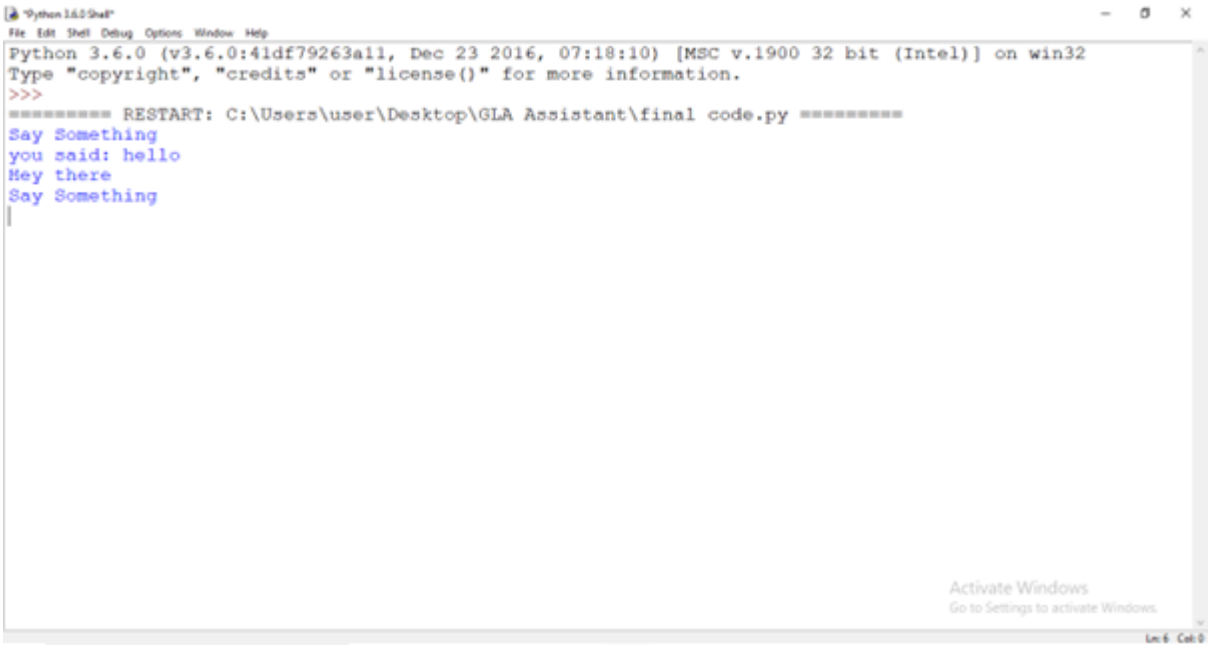
2.2.1 Use Case Diagram Explanation

It represents the use case diagram which is showing that the how the user is interacting with the interface, how he/she is able to ask the queries, how it is made possible to get the required information which is more briefly explained in the above figure.

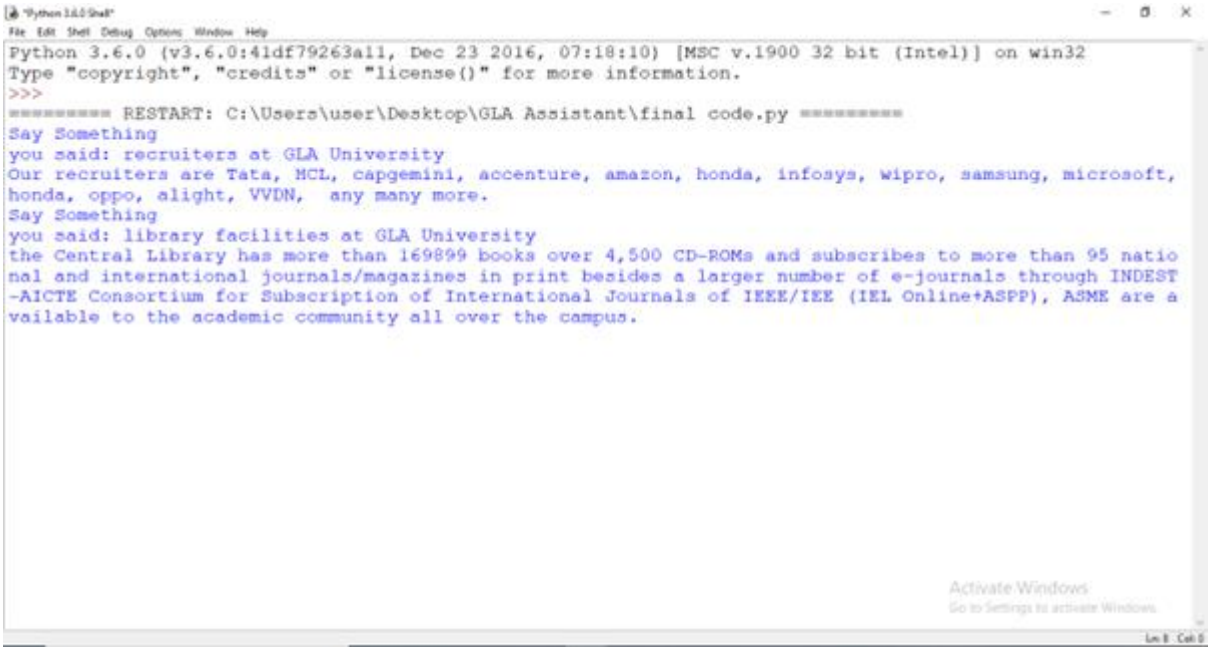
User Interface

3.1 SCREENSHOTS OF THE PROGRAM






File Edit Shell Debug Options Window Help
Python 3.6.0 (v3.6.0:41df79263a11, Dec 23 2016, 07:18:10) [MSC v.1900 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\user\Desktop\GLA Assistant\final code.py ==========
Say Something
you said: GLA University
G L A University is one of the best private universities in Uttar Pradesh
It is ranked top most among the private colleges
Activate Windows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>>>
========== RESTART: C:\Users\user\Desktop\GLA Assistant\final code.py ==========
Say Something
you said: recruiters at GLA University
Our recruiters are Tata, HCL, capgemini, accenture, amazon, honda, infosys, wipro, samsung, microsoft,
honda, oppo, alight, VVDN, any many more.
Say Something
you said: library facilities at GLA University
the Central Library has more than 169899 books over 4,500 CD-ROMs and subscribes to more than 95 natio
nal and international journals/magazines in print besides a larger number of e-journals through INDEST
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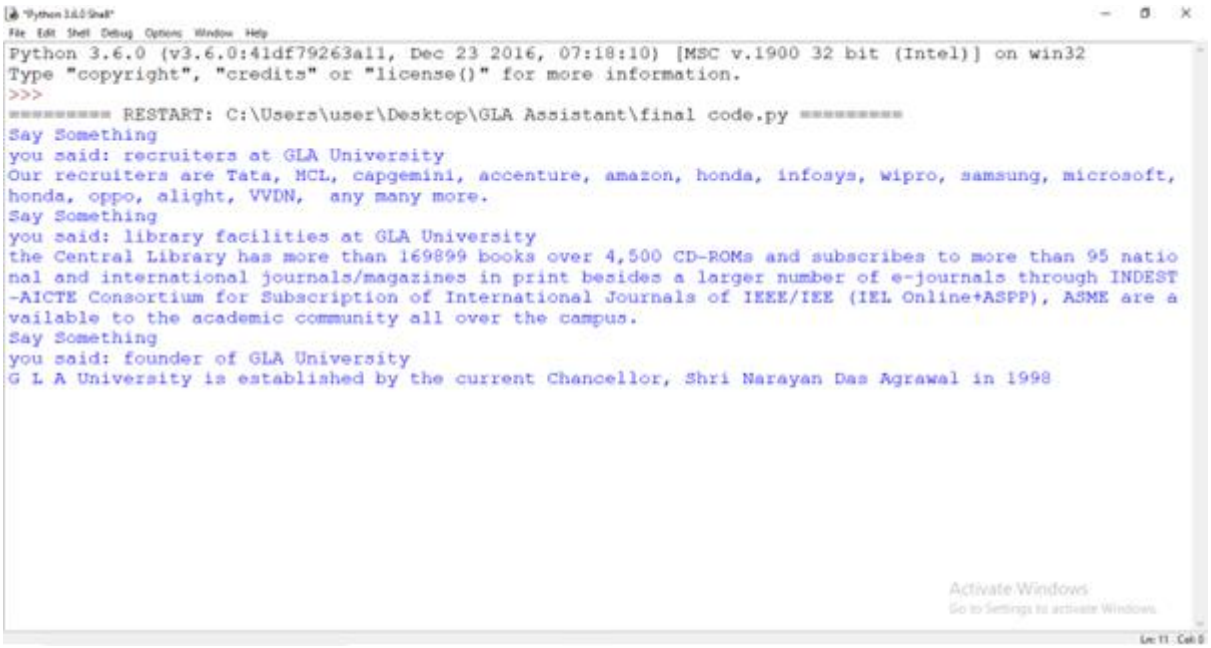
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Say Something
you said: recruiters at GLA University
Our recruiters are Tata, MCL, capgemini, accenture, amazon, honda, infosys, wipro, samsung, microsoft,
honda, oppo, alight, VVDN, any many more.
Say Something
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the Central Library has more than 169899 books over 4,500 CD-ROMs and subscribes to more than 95 natio
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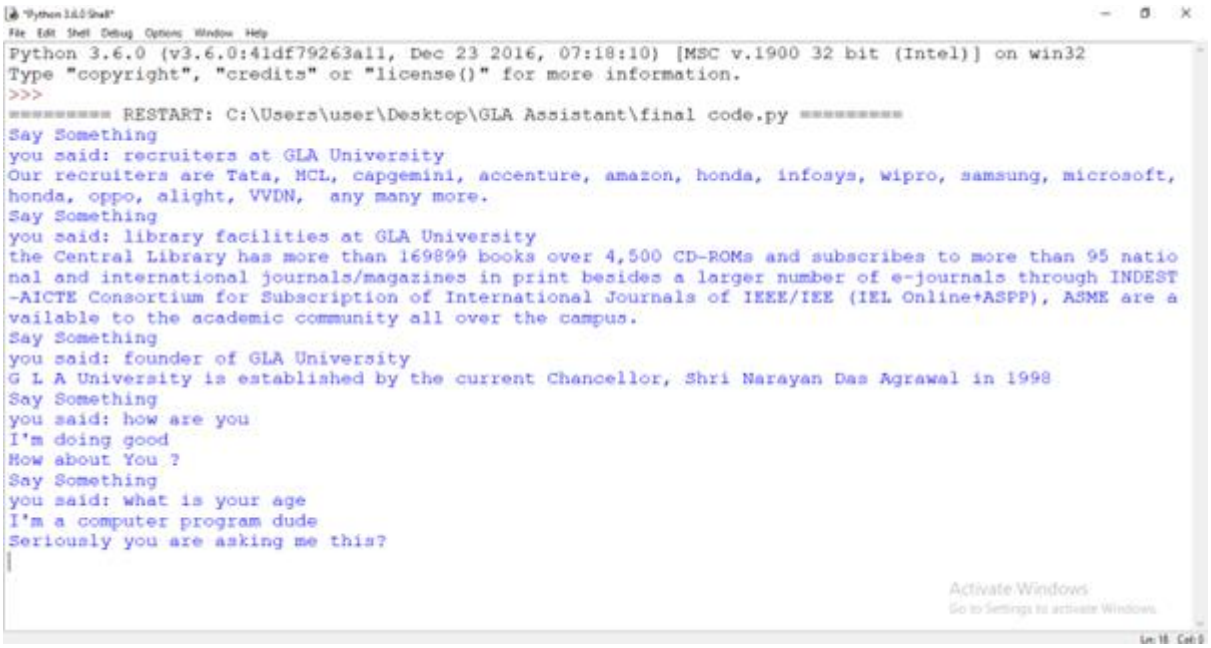
vailable to the academic community all over the campus.
Say Something
you said: founder of GLA University
G L A University is established by the current Chancellor, Shri Narayan Das Agrawal in 1998
Activate Windows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Say Something
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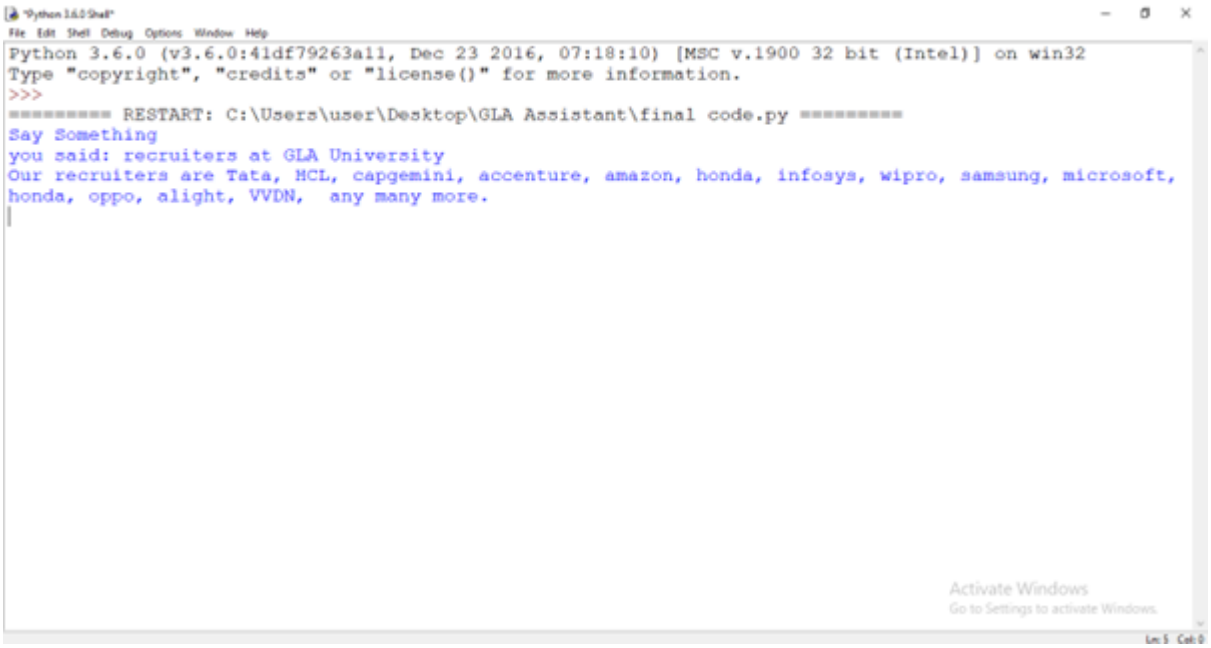
vailable to the academic community all over the campus.
Say Something
you said: founder of GLA University
G L A University is established by the current Chancellor, Shri Narayan Das Agrawal in 1998
Say Something
you said: how are you
I'm doing good
How about You ?
Say Something
you said: what is your age
I'm a computer program dude
Seriously you are asking me this?
Activate Windows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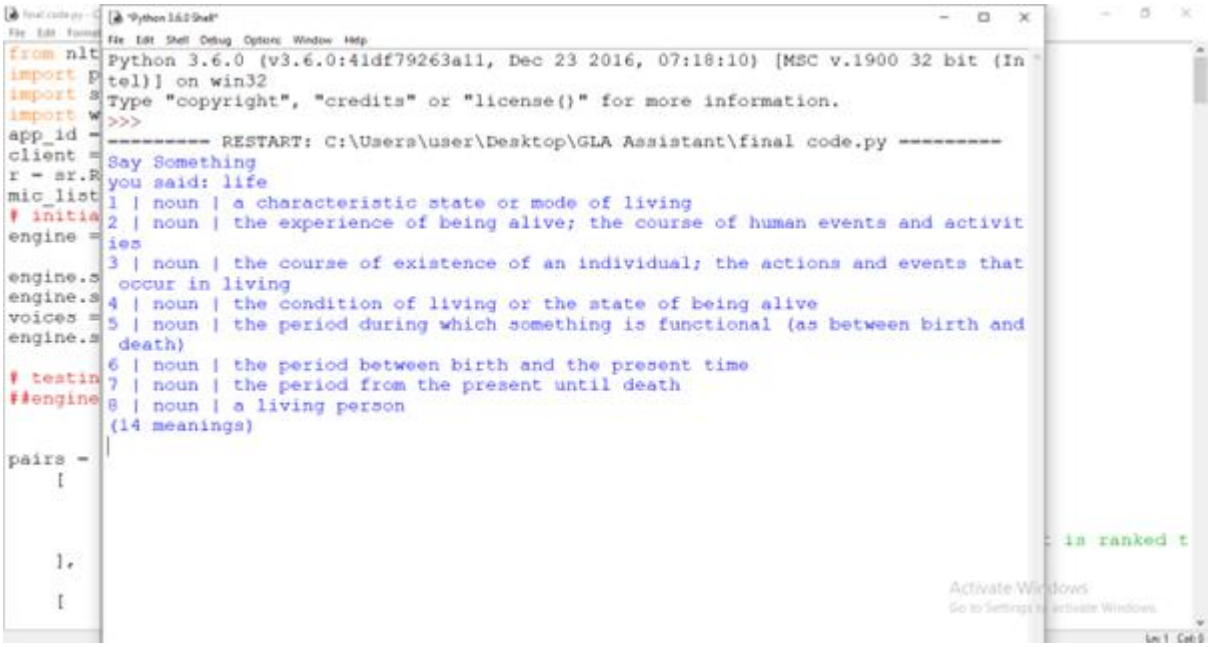
Our recruiters are Tata, HCL, capgemini, accenture, amazon, honda, infosys, wipro, samsung, microsoft,
honda, oppo, alight, VVDN, any many more.


Python 3.6.0 (v3.6.0:41df79263a11, Dec 23 2016, 07:18:10) [MSC v.1900 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\user\Desktop\GLA Assistant\final code.py ==========
Say Something
you said: life
1 | noun | a characteristic state or mode of living
2 | noun | the experience of being alive; the course of human events and activities
3 | noun | the course of existence of an individual; the actions and events that occur in living
4 | noun | the condition of living or the state of being alive
5 | noun | the period during which something is functional (as between birth and death)
6 | noun | the period between birth and the present time
7 | noun | the period from the present until death
8 | noun | a living person
(14 meanings)

Implementation

4.1 Code For The Project

```
from nltk.chat.util import Chat, reflections

import pyttsx3

import speech_recognition as sr

import wolframalpha

app_id = "HPEGVV-T8WLEEJ734"

client = wolframalpha.Client(app_id)

r = sr.Recognizer()

mic_list = sr.Microphone.list_microphone_names()

# initialisation

engine = pyttsx3.init()


engine.setProperty('rate', 150)

engine.setProperty('volume', 10.0)

voices = engine.getProperty('voices')

engine.setProperty('voice', voices[1].id)


# testing

##engine.say("My first code on text-to-speech")



pairs = [
```

```
 [
        r"How are you?(.*)",
        [
            "i am doing good. What about you"]
    ],
 [
        r"Hello(.*)",
        [
            "hii"]
    ],


[
        r"Who are you(.*)",
        [
            "I am G L A assistant...You can ask me about G L A University."]
    ],
 [
        r"(.*)Who is the chancellor of GLA Univercity(.*)",
        ["Mr.Narayan Das Agrawal."]
    ],


  [
        r"(.*)Who is the pro Chancellor of GLA University(.*)",
        ["Mr. Professor D. S. Chauhan"]
    ],
```

```
 [
        r"(.*)Who is the GLA University registrar(.*)",
        ["Mr. Ashok Kumar Singh."]
    ],

    [
        r"(.*)Who is the HOD of CSE Department(.*)",
        ["Dr. Rohit Aggrawal H.O. D. & Professor, Department of Computer Engineering & Applications"]
    ],

    [
        r"(.*)Who is the Pro Vice Chancellor of GLA University(.*)",
        [
            "Dr. Anoop Kumar Gupta is currently positioned as the Director at G L A University, Mathura. Dr. Gupta has implemented the e-Governance project at GLA University as well as overseen the website and brochure of the University."]
    ],
 [
     r"(.*)Who is the Founder of GLA University(.*)",
     ["It was the year 1991 Shri Narayan Das Agrawal decided to fulfil the dream of his father, Late Shri Ganeshi Lal Agrawal, of establishing an institute for quality education to the people and the region & beyond."]
 ],

    [
        r"(.*)GLA University cafeteria Facility(.*)",
```

```
        [
            "We have 4 cafeterias in campus that helps the students to fulfil their cravings as and when they want. The cafeteria offers a good menu of multi-cuisine delights, amidst a lively, jolly atmosphere."]
    ],


    [
        r"(.*)GLA University medical facility(.*)",
        ["24*7 hours medical facility is available in our university"]
    ],


    [
        r"(.*)Gla University Full address(.*)",
        ["17km Stone, NH-2, Mathura-Delhi Road Mathura, Chaumuhan, Uttar Pradesh 281406"]
    ],


    [
        r"(.*)code of conduct and Ethics policy(.*)",
        [
            "For information about code of conduct and ethics policy, please visit:http://www.gla.ac.in/Uploads/image/98imguf_GLA-University--Code-of-Conduct-and-Ethics-Policy-Updated.pdf"]
    ],


 [
     r"(.*)Who is Your Project Mentor(.*)",
```

["Dr.Robin Singh Bhadauriya Sir is our project mentor. He is Assistant Professor in GLA University Mathura Institute of Engineering & Technology. Department of Computer Engineering & Applications."]

],

[

r"(.*)How many areas does GLA have?(.*)",

["110 acres Spread across 110 acres of land, the university is home to more than 10,500 students enrolled in a variety of professional courses."]

],

[

r"(.*)Which company comes in GLA University?(.*)",

["The major recurites of GLA University in 2022 includes Wipro,Accenture,Microsoft,Capegemini,Durafloor concrete Solution LLP,etc."]

],

[

r"(.*)Is GLA University Degree valid(.*)",

["Yes,Since GLA University has been accredited and approved by bodies such as UGC, AICTE, NAAC(A), AIU etc."]

],

[

r"(.*)GLA University training and placement department(.*)",

[

" G L A University has training and placement department i.e Placement training plays a major role in shaping up the career goals of students. It is the dream of every engineering student to get placed in a top organization visiting their campus for

recruitment.Training of students and equipping them with life skills has become an important responsibility of the institution."]

],

[

r"(.*)GLA University training and development department(.*)",

[

"G L A University has training and development department i.e. Training and development refers to educational activities within a company created to enhance the knowledge and skills of employees while providing information and instruction on how to better perform specific tasks."]

],

[

r"(.*)executive Council(.*)",

[

"Mr. Narayan Das Agrawal (Business)Chairperson and many more.for further details visit : https://www.gla.ac.in/about-us/executive-council."]

],

[

r"(.*)Who creates you(.*)",

["I created By Ujjawal Tripathi with the help og N L T K library...Thank You"]

],

[

r"(.*)GLA University attendence criteria(.*)",

```
        ["It is mandatory to fullfil 75% attendance for each student"]
    ],

    [
        r"(.*)is there any in GLA University entrepreneurship cell(.*)",
        [
            "At E-Cell G L A U members from various backgrounds and departments combine their meticulous talents to help the youth achieve their dreams"]
    ],
 [
        r"(.*)GLA University library information(.*)",
        ["There are more than 175000 books available in our library."]
    ],

    [
        r"(.*)GLA University library Timigs(.*)",
        ["Library timings is from 8 am to 11 pm for boys and for girls it is form 8 am to 6 pm."]
    ],

    [
        r"(.*)GLA University library facilities(.*)",
        [
            "the Central Library has more than 169899 books over 4,500 CD-ROMs and subscribes to more than 95 national and international journals/magazines in print besides a larger number of e-journals through INDEST-AICTE Consortium for Subscription of International Journals of IEEE/IEE (IEL Online+ASPP), ASME are available to the academic community all over the campus. "]
```

```
    ],


    [
        r"(.*)GLA University clubs of our College(.*)",
        ["There are different different clubs in our college such as natraj club, udaan , aashayein, abacus, ASME etc"]
    ],


    [
        r"my name is (.*)",
        ["Hello %1, How are you today ?", ]
    ],
    [
        r"what is your name ?",
        ["My name is G L A Assistant and I know almost everything about G L A University"]
    ],
    [
        r"how are you?",
        ["I'm doing good\nHow about You ?", ]
    ],
    [
        r"sorry(.*)",
        ["Its alright", "Its OK, never mind", ]
    ],
    [
```

```
        r"i'm(.*)doing good",
        ["Nice to hear that", "Alright :)", ]
    ],
    [
        r"hi|hey|hello",
        ["Hello", "Hey there", ]
    ],
    [
        r"(.*)age?",
        ["I'm a computer program dude\nSeriously you are asking me this?", ]

    ],
 [
        r"(.*)IQAC(.*)",
        [
            "The Internal Quality Assurance Cell (IQAC) was constituted in GLA University on January 4, 2016,with the aim of working towards realization of the goals of quality enhancement and sustenance through internalization of quality culture and institutionalization of best practices."]
    ],
[
        r"(.*)aim of GLA University(.*)",
        [
            "The aim of G L A is to provide education of high quality to fulfill the needs of higher education in the society."]
    ],
```

```
    [
        r"(.*)NIRF(.*)",
        [
            "The methodology draws from the overall recommendations broad understanding arrived at by a Core Committee set up by MHRD, to identify the broad parameters for ranking various universities and institutions."]
    ],

    [
        r"i work in (.*)?",
        ["%1 is an Amazing company, I have heard about it. But they are in huge loss these days.", ]
    ],
    [
        r"(.*)raining in(.*)",
        ["No rain since last week here in %2", "Damn its raining too much here in %2"]
    ],
    [
        r"how(.*)health(.*)",
        ["I'm a computer program, so I'm always healthy ", ]
    ],
 [
        r"(.*)recruiters(.*)",
        [
            "Our recruiters are Tata, HCL, capgemini, accenture, amazon, honda, infosys, wipro, samsung, microsoft, honda, oppo, alight, VVDN,  any many more."]
    ],
```

```
[
    r"(.*)top 5 recruiters at GLA University (.*)",
    ["Our top recruiters are:Amazon, microsoft, accenture, salesforce, samsung."]
  ],
[
    r"(.*)number of hostlers(.*)",
    [
      "We have 15 boys hostels and 4 girls hostels that have about 5000+ residents,our college has 4500+ boys and 1500+ girls hostlers."]
  ],
[
    r"(.*)GLA University hostel details(.*)",
    ["There are facilities for indoor and outdoor games. Green lawns are provided,24x7 electric and power supply."]
  ],
[
    r"(.*)GLA University no Ragging policy(.*)",
    ["Ragging is strictly prohibited in our campus."]
  ],
[
    r"(.*)GLA University hostel security(.*)",
    [
      "hostels are provided 24 hours security with our best group of guards. Students are 24 hours under surveillance and biometric is compulsory for every student."]
  ],
[
```

```
        r"(.*)about GLAMS portal(.*)",
        ["for the ease of students to access their information, we have provided an online portal."]
    ],
  [
        r"(.*)GLA University attendence criteria(.*)",
        ["It is mandatory to fullfil 75% attendance for each student"]
    ],
 [
        r"(.*)GLA University leave and Outing details(.*)",
        [
            "girls are provided outing till 6.30 pm whereas boys till 8pm and it is compulsory for everyone to follow the timing criteria of leave and outing"]
    ],
  [
        r"(.*)why GLA University(.*)",
        [
            "At G L A University we offer a nurturing environment that fosters sharp learning skills, a top-of-the-line curriculum that offers the best in education along with pioneering placement opportunities."]
    ],
 [
        r"(.*)GLA University sports Facilities(.*)",
        [
            "All the playing grounds are located strategically across the university thereby making sports part of one's life no matter where the person is in the university. G L A IPL (G L A Cricket Championship), Volleyball, Football, Badminton, Basketball, Chess tournaments every year."]
```

```
    ],
[
        r"(.*)GLA University campus Facilities(.*)",
        ["Security ,Madical facility ,play groud ,24 hr electricity ,etc"]
    ],
[
        r"(.*)GLA University rules and Regulations(.*)",
        ["Intentionally damaging property and equipment of the hostel,Gambling in Any Form
is not allowed"]
    ],
[
        r"(.*)alumni of our GLA University (.*)",
        ["More than 4000+ G L Aians are Working Abroad with the most reputed companies."]
    ],
[
        r"(.*)average placement of GLA University(.*)",
        ["The average placement rate of G L A University is 80 to 85 %"]
    ],
[
        r"(.*)clubs of our College GLA University (.*)",
        ["There are different different clubs in our college such as natraj club, udaan , aashayein,
abacus, ASME etc"]
    ],
 [
        r"(.*)admission help/ helpline(.*)",
        ["For admission related information, you can call : 6399020004, 6399020005"]
```

```
    ],
[
        r"(.*)total number of students in GLA University (.*)",
        ["More than 16000 students."]
    ],

    [
        r"(.*)nuumber of faculty in GLA university(.*)",
        ["There are over 700 faculty in G L A."]
    ],
    [
        r"quit",
        ["Bye bye take care It was nice talking to you See you soon "]
    ],
]

chat = Chat(pairs, reflections)
while 1:
    with sr.Microphone(device_index=1, sample_rate=48000, chunk_size=1024) as source:
        r.adjust_for_ambient_noise(source)
        print("Say Something")

        audio = r.listen(source)
    text = 'GLA University'
    try:
```

```
        text = r.recognize_google(audio)
        print("you said: " + text)
    except:
        print("Something error\n Please Try Again ")

    res = chat.respond(text)
    if not res:
        value = client.query(text)
        res = next(value.results).text

    print(res)
    engine.say(res)
    engine.runAndWait()  ##chat.converse()
    if text in ('quit' ,'bye', 'goodbye'):
        break
```

Conclusion / Reference

5.1 APPLICATIONS:

- This can be implemented in Chat bot.
- Can be used as your assistant.
- To gain information about GLA.
- More enhanced version of the project can be used just like the virtual personal assistants.
- Virtual assistants in Military
  The militaries are adopting the use of virtual reality in their training as it allows them to undertake a huge range of simulations. VR is used in all branches of service: the army, navy, air force, marines and coast guard. In a world where technology is adopted from an early age and children are accustomed to video games and computers, VR proves an effect method of training. VR can transport a trainee into a number of different situations, places and environments for a range of training purposes.

- VR in Education :
  VR uses for education don't stop at the military or medical field, but extend to schools with virtual reality also adopted in education for teaching and learning situations. Students are able to interact with each other and within a three-dimensional environment. They can also be taken on virtual field trips, for example, to museums, taking tours of the solar system and going back in time to different eras. Virtual reality can be particularly beneficial for students with special needs, such as autism.

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- https://pypi.org/project/PyAudio/
- https://pypi.org/project/SpeechRecognition/
- https://pypi.org/project/pywin32/