A PROJECT REPORT ON Artificial Intelligence using

python

Submitted in partial fulfillment of the requirement for the award of the degree of

Diploma in Computer Engineering

SUBMITTED BY

Mr. Ritik Bhambid	Exam Seat No . 139152
Mr. Om Tambat	Exam Seat No . 139160
Mr. Sourabh Tambe	Exam Seat No . 139159
Mr.Ziya Bhaksey	Exam Seat No . 139151

Under the guidance of

Mrs. Mandavkar J. H.

MAHARASHTRA POLYTECHNIC

Dalvi Education and Charitable Trust's
MAHARASHTRA POLYTECHNIC
At . Shenale , Post : Soveli , Taluka : Mandangad , District : Ratnagiri-415 203

DEPARTMENT OF COMPUTER ENGINEERING

ACADEMIC YEAR

2020-2021

DALVI EDUCTIONAL AND CHARITABLE TRUST

Maharashtra Polytechnic , Shenale

DEPARTMENT OF COMPUTER ENGINEERING

At-shenale , Post-Soveli , Tal-Mandangad , Dist-Ratnagiri-415203 , Maharashtra

CERTIFICITE

This is to certify that, this project report entitled

"Artificial Intelligence using python"

Submitted by

Mr. Ritik Nilesh Bhambid (Exam Seat No.139152), Mr. Om Bhushan Tambat (Exam Seat No.139160), Mr. Sourabh Sandip Tambe (Exam Seat No.139159), Mr.Ziya Ibrahim Bhaksey (Exam Seat No.139151) for partial fulfillment of the requirement for the award of the degree of Diploma in Computer Engineering as laid down by MSBTE, is a record of their own work carried out by them under my supervision and guidance during year 2020-2021.

Place: Dalvi Educational and Charitable Trust's, Maharashtra Polytechnic, Shanale.

Date:

Mrs. Mandavkar J. H.   Mrs. Nivekar M. K.

PROJECT GUIDE   HEAD OF DEPARTMENT

SIGNATURE OF EXAMINER

PRINCIPAL

DALVI EDUCTIONAL AND CHARITABLE TRUST

Maharashtra Polytechnic, Shenale

DEPARTMENT OF COMPUTER ENGINEERING

At- shenale, Post- Soveli, Tal- Mandangad, Dist-Ratnagiri-415203 , Maharashtra

EXAMINERS CERTIFICATE

This is to certify that the report entitled "Artificial Intelligence Using Python" has been successfully complete during the academic year 2020-2021 by Ritik Nilesh Bhambid , Om Bhushan Tambat , Saurabh Sandip Tambe , Ziya Ibrahim Bhaksey This project completely confirms to the standards laid down by Maharashtra State Borad of Technical Education and has been completed in satisfactory manner as a fulfillment for the Diploma in Computer Engineering of Maharashtra Polytechnic, Shenale.

……………… …………………

Examiner-I(Internal) Examiner-II(External)

Date:

Place: Dalvi Educational and Charitable Trust's, Maharashtra Polytechnic, Shanale.

ACKNOWLEDGEMENT

I take this opportunity to express my gratitude to my guide Mrs. Mandavkar J. H., his/her constant encouragement, wonderful technical guidance and support throughout the course. I sincerely thank Mrs. Nivekar M. K. , Head of Department of Computer Engineering for his/her advice and support during course of this work.

      With deep sense of gratitude we thank to our Principal Prof.   and Management of Dalvi Educational and Charitable Trust for providing all necessary facilities, resources required to complete the task and their constant encouragement and support.

      I express my thanks to all teaching & non-teaching staff for their kind co-operation and guidance foe preparing and presenting this report. I take this opportunity to express my gratitude towards my parent without which it would have not been possible. We are ending this acknowledgement with deep indebtedness to our friends who have helped us directly or indirectly.

Mr. Ritik Bhambid
Mr. Om Tambat
Mr. Sourabh Tambe
Mr.Ziya Bhaksey

DECLARATION

We declare that this written submission representation our ideas in our own words and where other ideas or words have been included; we have adequately cited and referenced then original source. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been when needed.

Name of the Student	Exam Seat No.	Sign
1) Ritik N. Bhambid	139152	
2) Om B. Tambat	139160	
3) Sourabh S. Tambe	139159	
4) Ziya I. Bhaksey	139151	

Date:

CONTENTS

LIST OF FIGURES

ABSTRACT

The project aims to develop a personal-assistant using python programing. Jarvis draws its inspiration from virtual assistants like Cortana for Windows, and Siri for iOS. It has been designed to provide a user-friendly interface for carrying out a variety of tasks by employing certain well-defined commands. Users can interact with the assistant either through voice commands or using keyboard input.

As a personal assistant, Jarvis assists the end-user with day-to-day activities like general human conversation, searching queries in google, bing or yahoo, searching for videos, retrieving images, live weather conditions, word meanings, searching for medicine details, health recommendations based on symptoms and reminding the user about the scheduled events and tasks. The user statements/commands are analysed with the help of machine learning to give an optimal solution.

Digital Life Assistant which uses mainly human communication means such Twitter, instant message and voice to create two way connections between human and his apartment, controlling lights and appliances, assist in cooking, notify him of breaking news, Facebook's Notifications and many more. In our project we mainly use voice as communication means so the Jarvis is basically the Speech recognition application. The concept of speech technology really encompasses two technologies: Synthesizer and recognizer. A speech synthesizer takes as input and produces an audio stream as output. A speech recognizer on the other hand does opposite. It takes an audio stream as input and thus turns it into text transcription. The voice is a signal of infinite information. A direct analysisand synthesizing the complex voice signal is due to too much information contained in the signal. Therefore the digital signal processes such as Feature Extraction and Feature Matching are introduced to represent the voice signal. In this project we directly use speech engine which use Feature extraction technique as Mel scaled frequency cepstral. The melscaled frequency cepstral coefficients (MFCCs) derived from Fourier transform and filter bank analysis are perhaps the most widely used front- ends in state-of-the-art speech recognition systems. Our aim to create more and more functionalities which can help human to assist in their daily life and also reduces their efforts. In our test we check all this functionality is working properly. We test this on 2 speakers(1 Female and 1 Male) for accuracy purpose.

KEYWORDS:-

Personal Assistant, windows Systems, Automation,

.

Chapter 1

INTRODUCTION

Speech is an effective and natural way for people to interact with applications, complementing or even replacing the use of mice, keyboards, controllers, and gestures. A hands-free, yet accurate way to communicate with applications, speech lets people be productive and stayinformed in a variety of situations where other interfaces will not. Speech recognition is a topic that is very useful in many applications and environments in our daily life. Generally speech recognizer is a machine which understands humans and their spoken word in some way and can act thereafter. A different aspect of speech recognition is to facilitate for people with functional disability or other kinds of handicap. To make their daily chores easier, voice control could be helpful. With their voice they could operate the light switch turn off/on or operate some other domestic appliances. This leads to the discussion about intelligent homes where these operations can be made available for the common man as well as for handicapped

With the information presented so far one question comes naturally: how is speech recognition done? To get knowledge of how speech recognition problems can be approached today, a review of some research highlights will be presented. The earliest attempts to devise systems for automatic speech recognition by machine were made in the 1950's, when various researchers tried to exploit the fundamental ideas of acoustic-phonetics. In 1952, at Bell Laboratories, Davis, Biddulph, and Balashek built a system for isolated digit recognition for a single speaker . The system relied heavily on measuring spectral resonances during the vowel region of each digit. In 1959 another attempt was made by Forgie , constructed at MIT Lincoln Laboratories. Ten vowels embedded in a /b/-vowel-/t/ format were recognized in a speaker independent manner

1.1 PRODUCT GOALS AND OBJECTIVES

Currently, the project aims to provide the Linux Users with a Virtual Assistant that would not only aid in their daily routine tasks like searching the web, extracting weather data, vocabulary help and many others but also help in automation of various activities.

In the long run, we aim to develop a complete server assistant, by automating the entire server management process - deployment, backups, auto-scaling, logging, monitoring and make it smart enough to act as a replacement for a general server administrator.

1.2 Scop

Presently, Jarvis is being developed as an automation tool and virtual assistant. Among the Various roles played by Jarvis are:

1. Search Engine with voice interactions
2. Medical diagnosis with Medicine aid.
3. Reminder and To-Do application.
4. Vocabulary App to show meanings and correct spelling errors.
5. Weather Forecasting Application.

There shall be proper Documentation available on its Official Github repository for making further development easy and we aim to release our virtual assistant as an Open Source Software where modifications and contributions by the community are warmly welcomed.

Chapter 2

PROPOSED SYSTEM

This Software aims at developing a personal assistant for Linux-based systems. The main purpose of the software is to perform the tasks of the user at certain commands, provided in either of the ways, speech or text. It will ease most of the work of the user as a complete task can be done on a single command. Jarvis draws its inspiration from Virtual assistants like Cortana for Windows and Siri for iOS. Users can interact with the assistant either through voice commands or keyboard input.

2.1 Module

- **speechRecognition**

  A.I. assistant is that it should take command with the help of the microphone of the user's system. So, now we will make a function. With the help of the tfunction, our A.I. assistant will return a string output by taking microphone input from the user

- **pyttsx3**

  A python library that will help us to convert text to speech. In short, it is a text- to-speech library.
  It's works offline, and it is compatible with Python 2 as well as Python 3.

- **Wikipedia module**

  we have used an if statement to check whether Wikipedia is in the search query of the user or not. If Wikipedia is found in the user's search query, then two sentences from the summary of the Wikipedia page will be converted to speech with the speak function's help

2.2 **Software Requirement**

Windows XP or above

2.3 **Technology Used**

- PYTHON

2.4 **Hardware Requirement**

- Hard disk – 2GB

- RAM – 1GB

- Processor – dual core or above

Chapter 3

FEASIBILITY STUDY

Feasibility study: Feasibility study is conducted once the problem is understood.It also quantify benefits and cost.Feasibility study is the study which involves the analysis of problem domain and collection of all vital information in relation to the product to select the best system that meets the requirement. It is the important phase of software development process.

The main objective of feasibility study are:

- To analyze if software meets organizational requirements
- To determine if software can be implement using the current technology.
- To find whether the software can be integrated with other existing

Basically the feasibility study can be performed using

3.1 **Technical feasibility study**:

Technical feasibility is the process of validating the technology assumption,architecture and design of project.In this,the organization has to decide which technologies are suitable to develop our project. The technology involved in this project are:

- Tkinter as front end.
- Pyttsx3, SmtpliB, Speech recognition as back end.

Each of this technology are freely available and compatible on device

3.2 **Operational feasibility:**

Operational feasibility study is concerned with issues like whether the system will be used,if it is developed or implemented.It also focuses on whether the proposed project fits with existing business environment.It is used to identify the problem and how it is to be solved.The proposed system is operationally feasible due to following reason:

- It is convinient, flexible and easy to use.
- It saves time and effort.
- Can work with variety of commands
- Secure and Artificial inteligent

3.3 **Economic feasibility study:**

In economic feasibility cost benefit analysis is done in which expected cost and benefits are evaluated.Economic analysis is used for evaluating the effectiveness of proposed system.The project is being developed by freely available software so no cost development is needed. The cost of human efforts and maintainence are taken into consideration

Chapter 4

SYSTEM DEVELOPMENT

4.1 **Introduction**

Design is the abstraction of a solution: it is a general description of the solution to a problem without the details. Design is view patterns seen in the analysis phase to be a pattern in a design phase. After design phase we can reduced the time required to create the implementation.

In this chapter we are introduce context diagram , models , system architecture , principal system object , design model and object interface.

4.2 **Context Diagram**

                      This diagram represents what are the bounders and scope of Aadhaar Based Online Voting System project. It describes the main objective of the system and its entities involved.
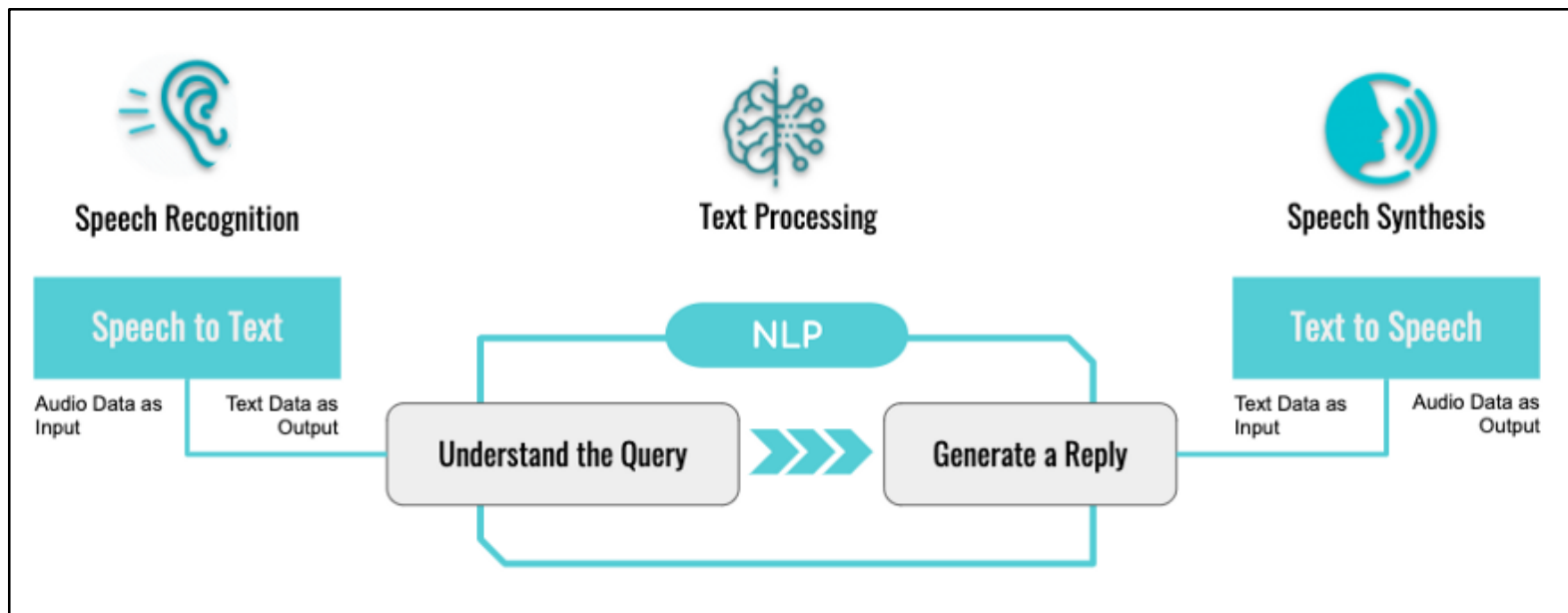
Fig. 4.1 Context Diagram

The User can be done the following:

- ☐ Set User
- ☐ Select Voice
- ☐ Set Email-ID & Password
- ☐ Speck commands

4.3 **Module**

4.3.1] **Interaction Model**

In a dynamic model that shows how the system interacts with its environment. We use case diagram.
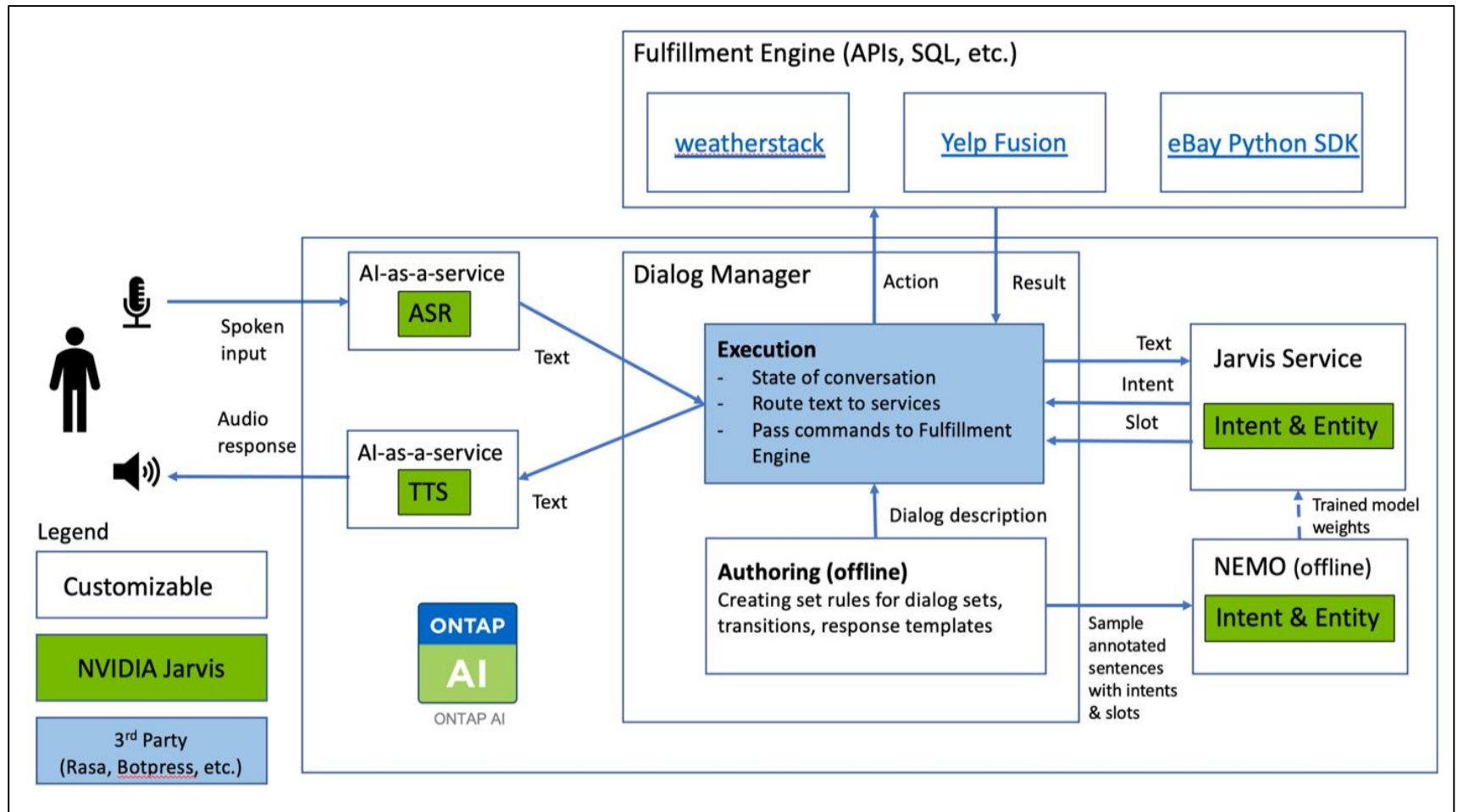
Fig. 4.2 Interaction Model Diagram

4.3.2 **Activity Diagram**

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all type of flow control by using different elements such as fork, join, etc
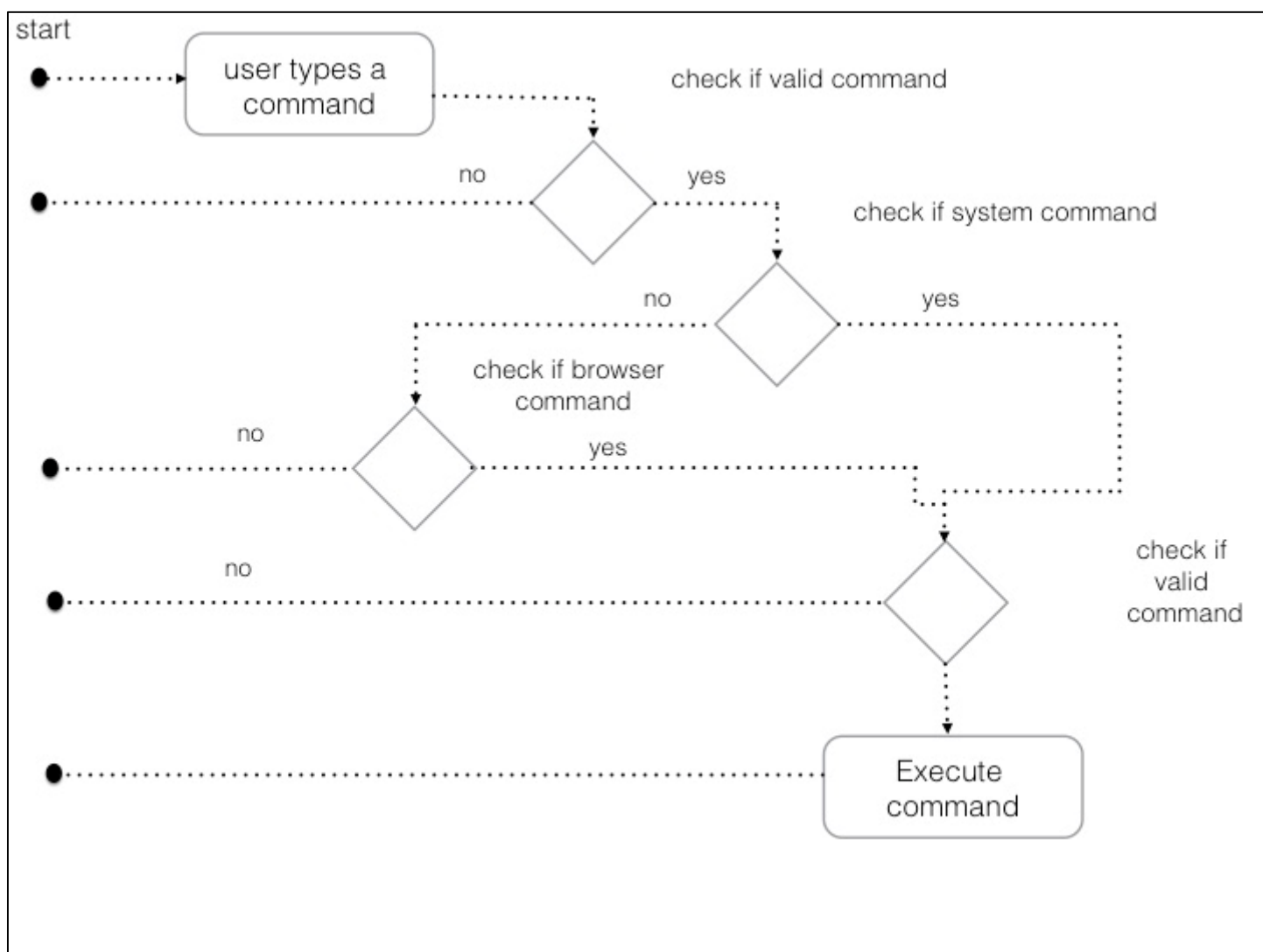
Fig. 4.3 Activity Diagram

4.3.3. **Sequence diagram**

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart.
A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario
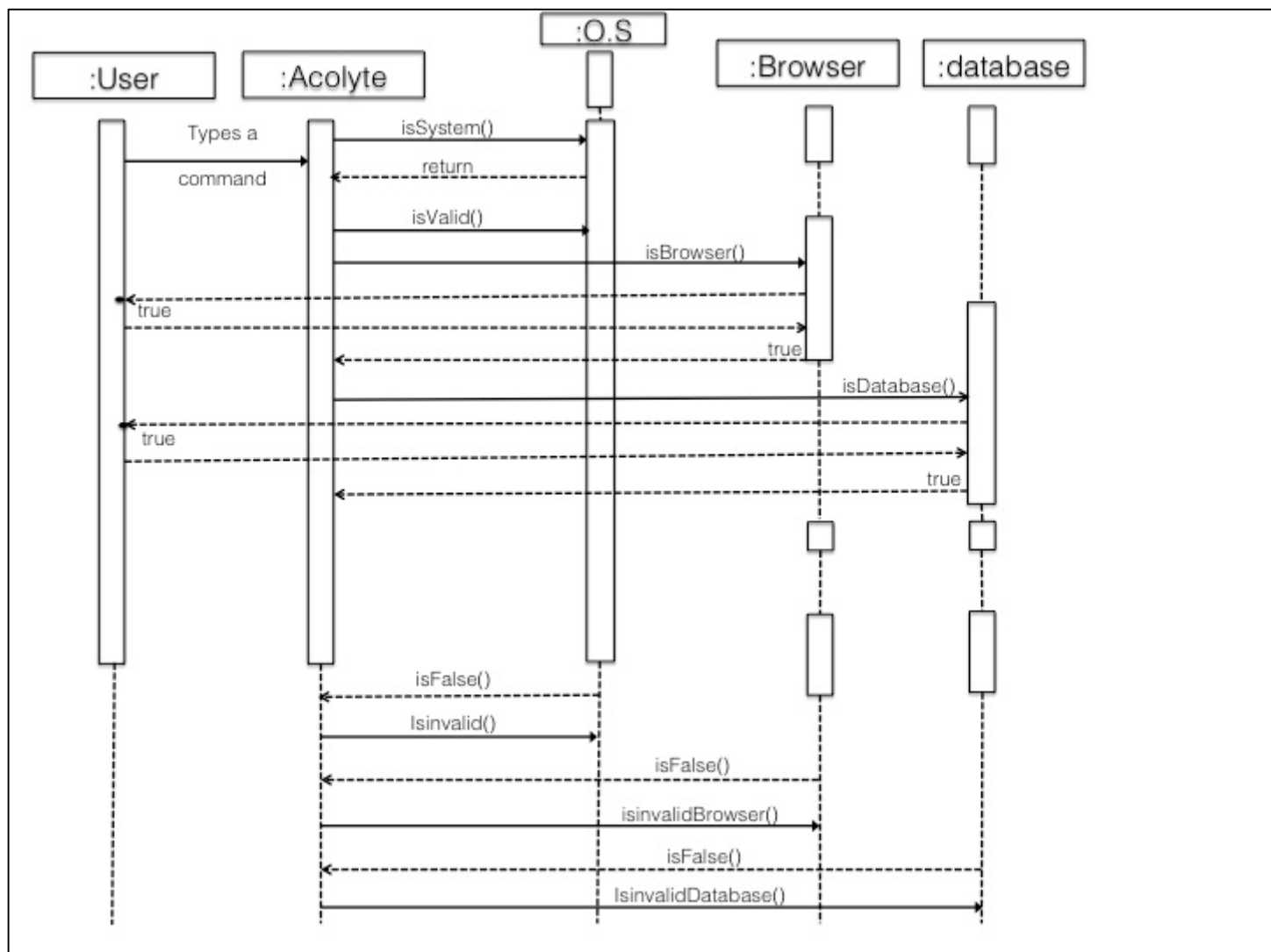
Fig.4.4 Squence Diagram

4.4 **Software Development Life Cycle**
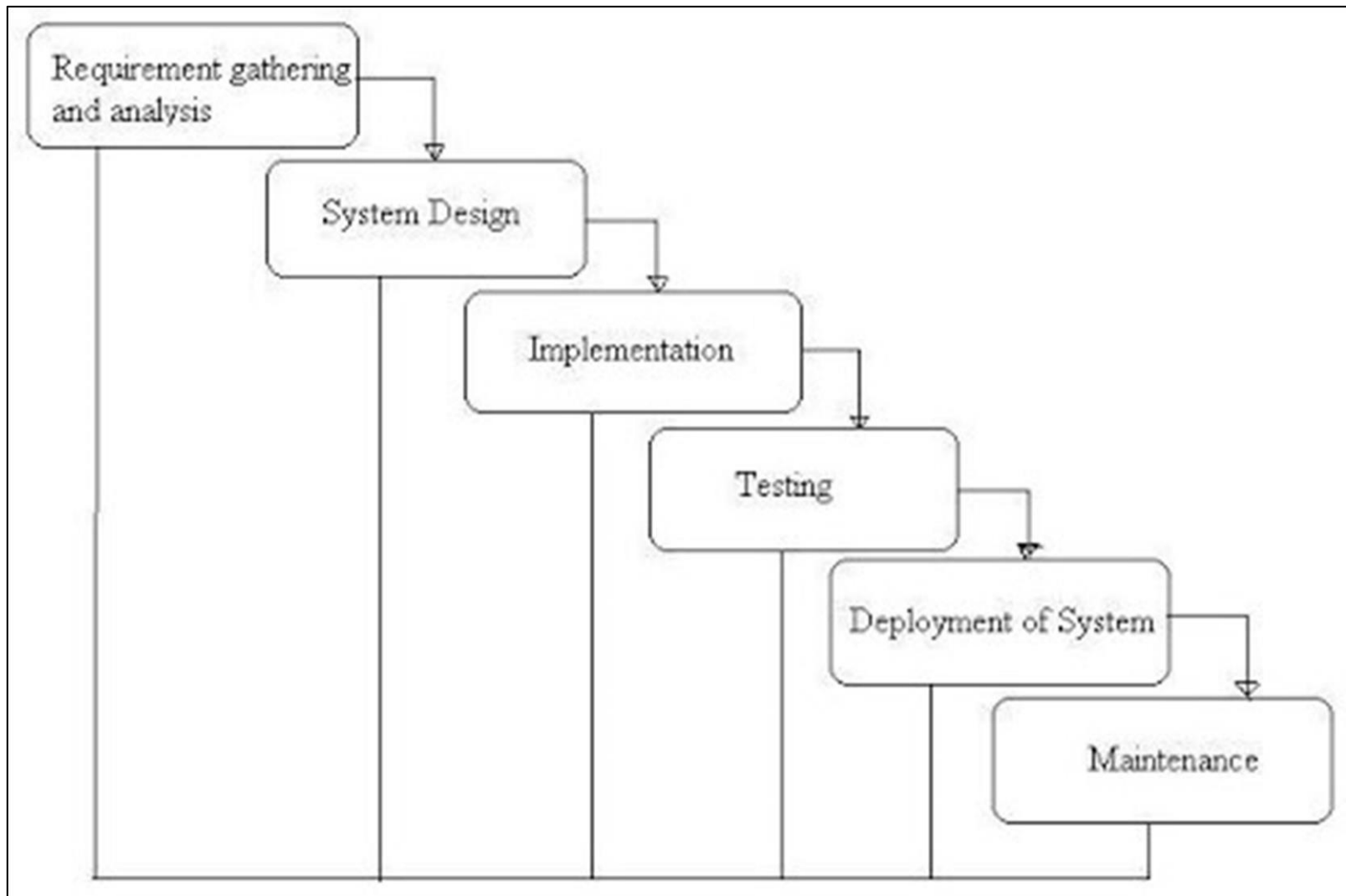
Fig.4.5 Software Development Life Cycle

4.5 Use Case Diagram

A use case is a set of scenarios that describe an interaction between a user and a system. A use case diagram displays the relationship among actors and use cases. The two main components of a use case diagram are use cases and actors.
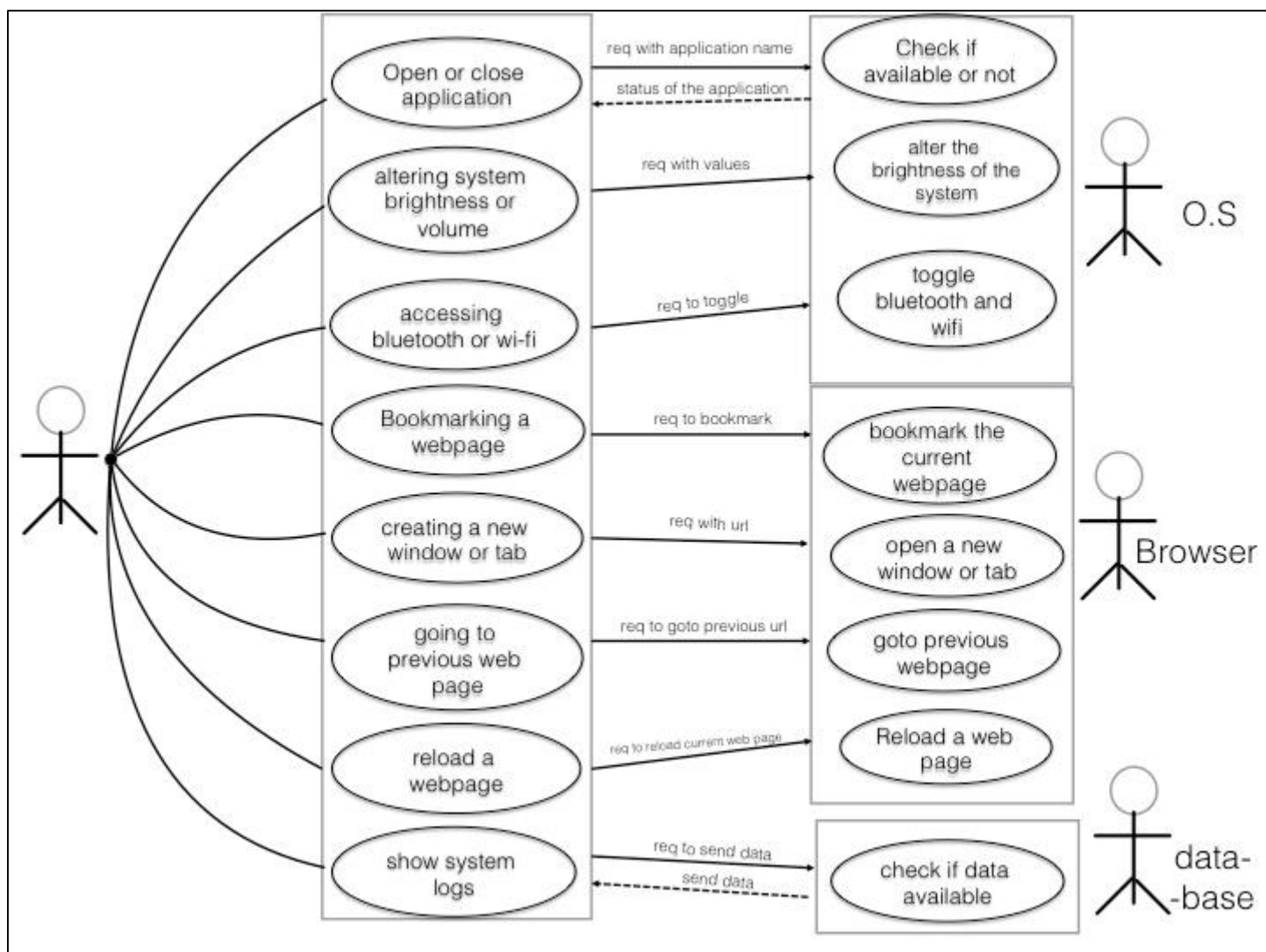
Fig. 4.6 Use Case Diagram

4.6 **Entity Relationship Diagram**
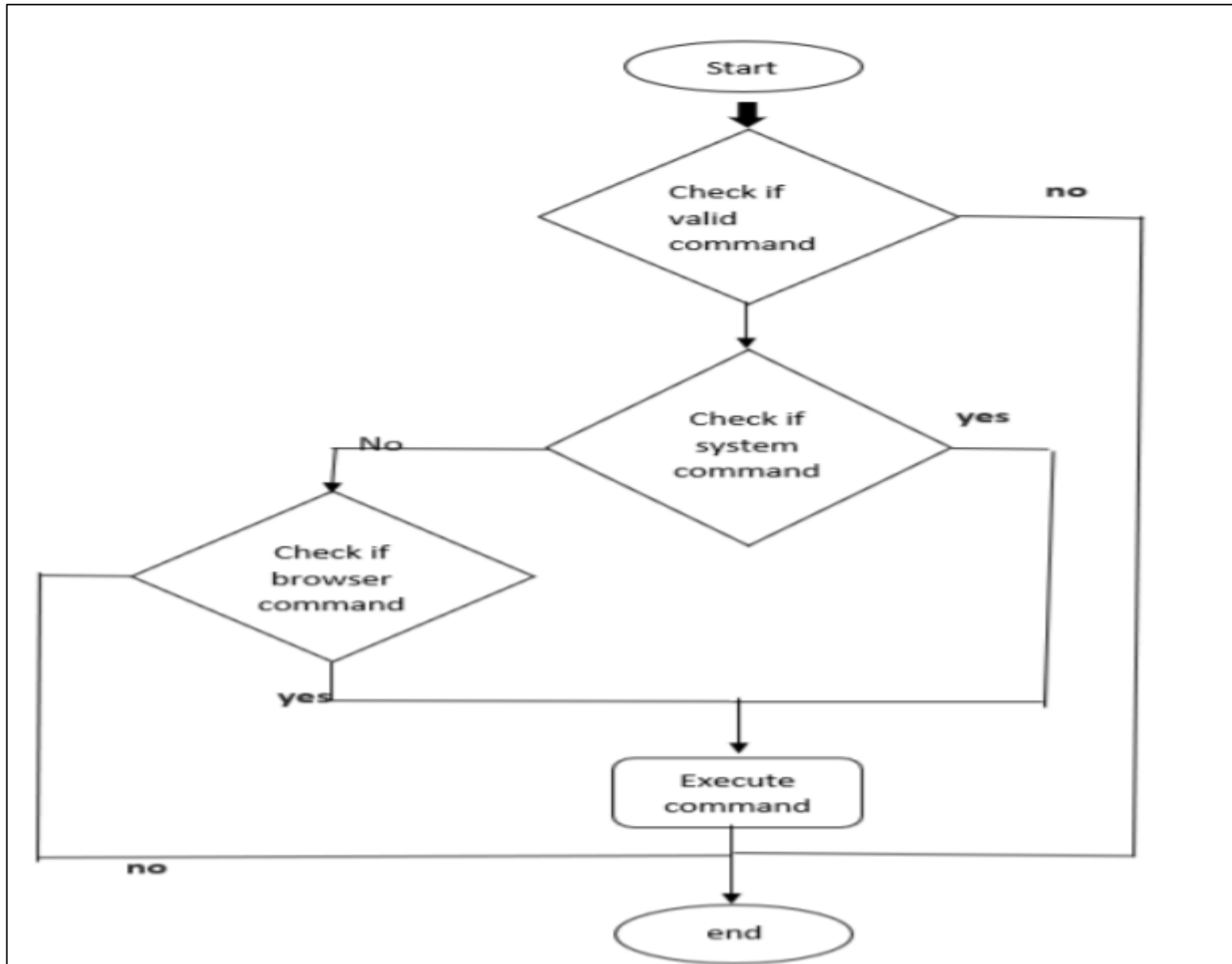
Fig. 4.7 Entity Relationship

4.7 Data Flow Diagram
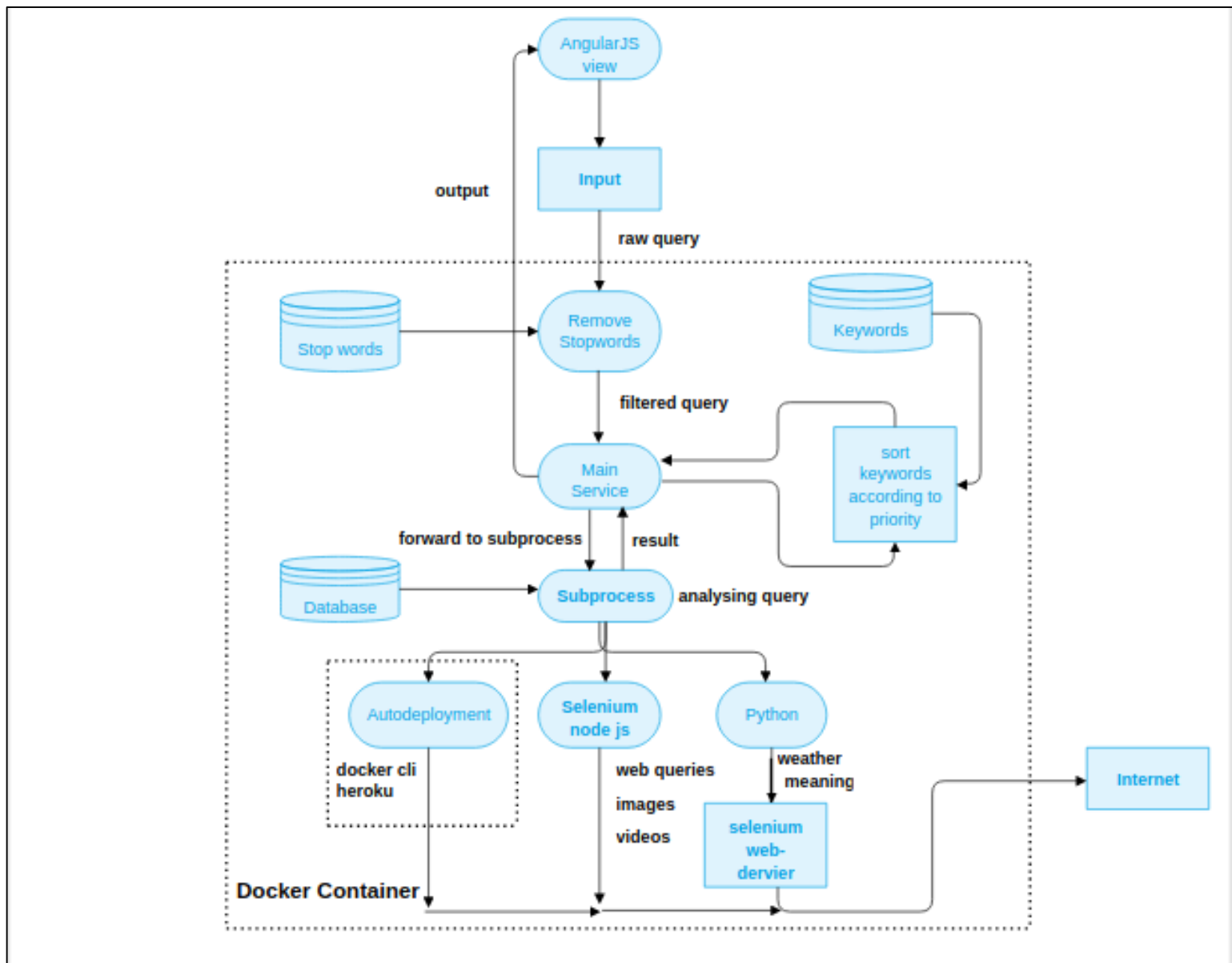
Fig. 4.8   Data Flow Diagram

4.8 Verification and Validation model
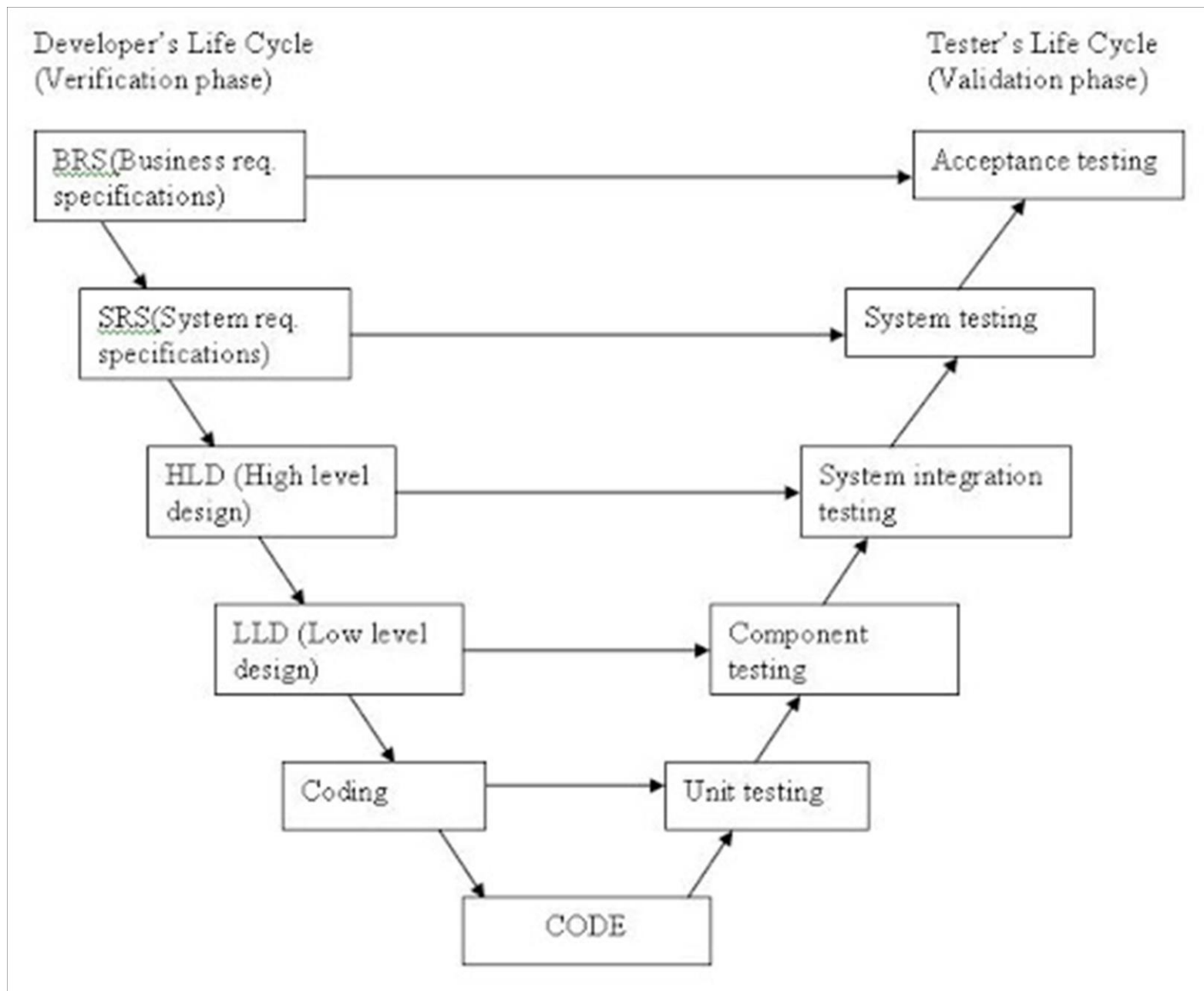
Fig. 4.9   Verification and Validation model

CHAPTER 5

CODE

5.1 Source code

```python
import pyttsx3

import speech_recognition as sr

import datetime

import wikipedia

import webbrowser

import os

import smtplib


engine = pyttsx3.init('sapi5')

voices = engine.getProperty('voices')

# print(voices[1].id)

engine.setProperty('voice', voices[0].id)



def speak(audio):

    engine.say(audio)

    engine.runAndWait()
```

```python
def wishMe():

    hour = int(datetime.datetime.now().hour)

    if hour>=0 and hour<12:

        speak("Good Morning!")


    elif hour>=12 and hour<18:

        speak("Good Afternoon!")


    else:

        speak("Good Evening!")


    speak("I am Jarvis Sir. Please tell me how
may I help you")


def takeCommand():

    #It takes microphone input from the user
and returns string output


    r = sr.Recognizer()

    with sr.Microphone() as source:

        print("Listening...")

        r.pause_threshold = 1

        audio = r.listen(source)
```

```python
    try:

        print("Recognizing...")

        query = r.recognize_google(audio,
language='en-in')

        print(f"User said: {query}\n")


    except Exception as e:

        # print(e)

        print("Say that again please...")

        return "None"

    return query


def sendEmail(to, content):

    server = smtplib.SMTP('smtp.gmail.com',
587)

    server.ehlo()

    server.starttls()

    server.login('youremail@gmail.com', 'your-
password')

    server.sendmail('youremail@gmail.com',
to, content)

    server.close()


if __name__ == "__main__":
```

```python
    wishMe()

    while True:

    # if 1:

        query = takeCommand().lower()


        # Logic for executing tasks based on
query

        if 'wikipedia' in query:

            speak('Searching Wikipedia...')

            query = query.replace("wikipedia", "")

            results = wikipedia.summary(query,
sentences=2)

            speak("According to Wikipedia")

            print(results)

            speak(results)


        elif 'open youtube' in query:

            webbrowser.open("youtube.com")


        elif 'open google' in query:

            webbrowser.open("google.com")


        elif 'open stackoverflow' in query:
```

```python
webbrowser.open("stackoverflow.com")



    elif 'play music' in query:

        music_dir = 'D:\\Non
Critical\\songs\\Favorite Songs2'

        songs = os.listdir(music_dir)

        print(songs)

        os.startfile(os.path.join(music_dir,
songs[0]))



    elif 'the time' in query:

        strTime =
datetime.datetime.now().strftime("%H:%M:
%S")

        speak(f"Sir, the time is {strTime}")



    elif 'open code' in query:

        codePath =
"C:\\Users\\Haris\\AppData\\Local\\Programs
\\Microsoft VS Code\\Code.exe"

        os.startfile(codePath)



    elif 'email to om' in query:

        try:
```
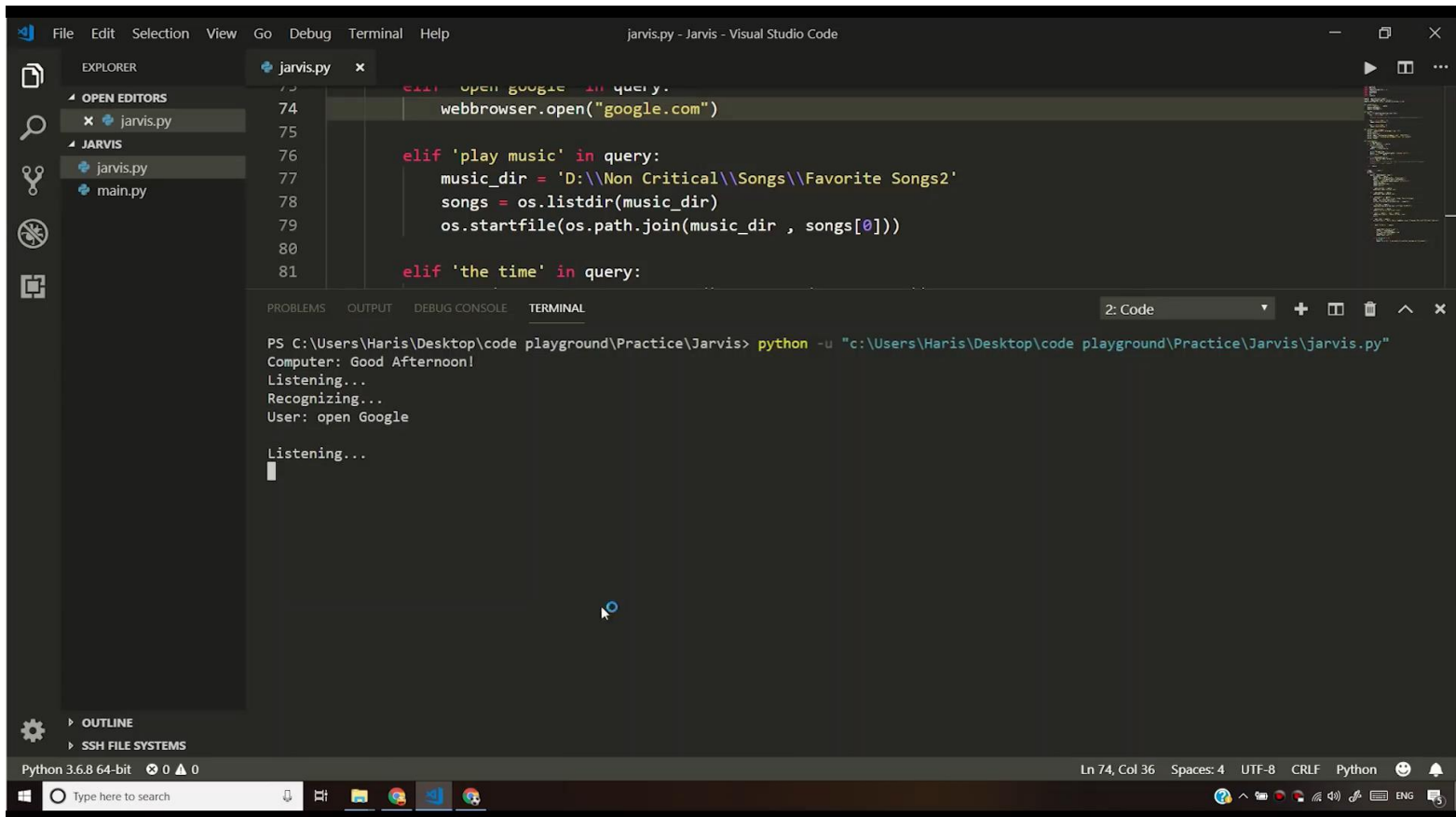
```python
        speak("What should I say?")

        content = takeCommand()

        to = "harryyourEmail@gmail.com"

        sendEmail(to, content)

        speak("Email has been sent!")

    except Exception as e:

        print(e)

        speak("Sorry my friend . I am not
able to send this email")
```

Chapter 6

RESULT

6.1 ARTIFICIAL INTALIGENT USING PYTHON: AUTOMATIC WEL-COME

6.2 ARTIFICIAL INTALIGENT USING PYTHON: OPEN GOOGLE
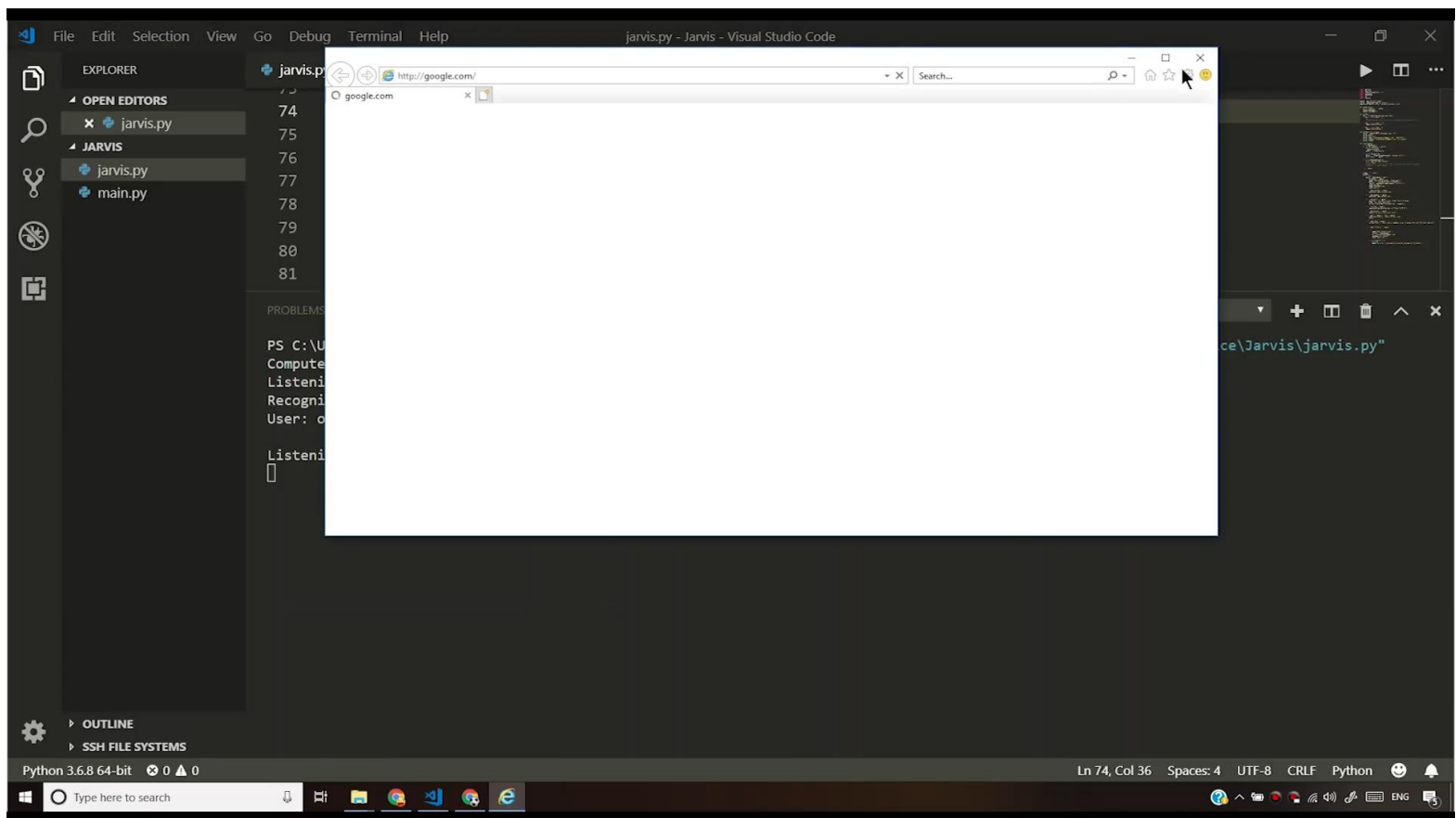
6.3 ARTIFICIAL INTALIGENT USING PYTHON:OPEN YOUTUBE
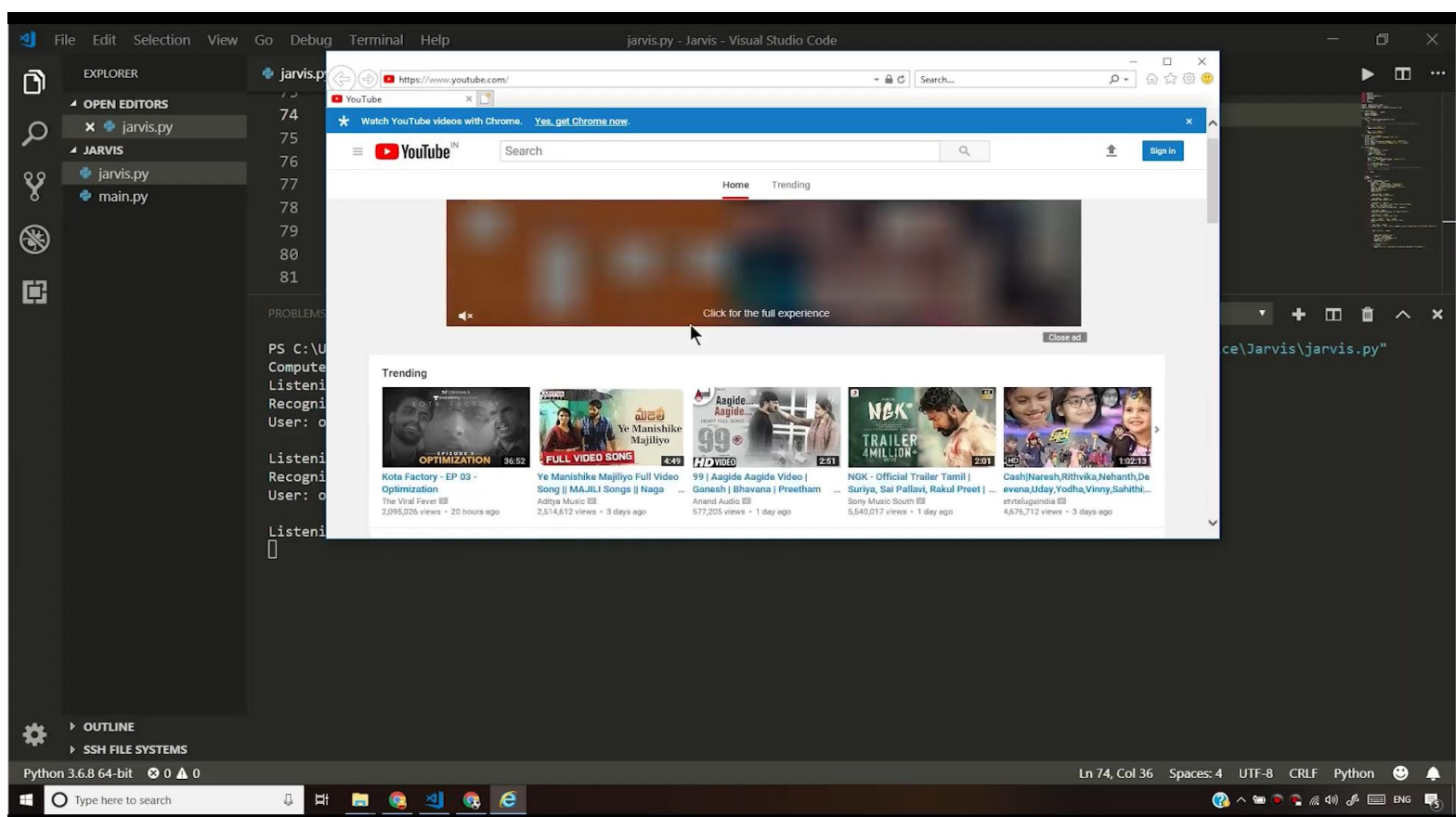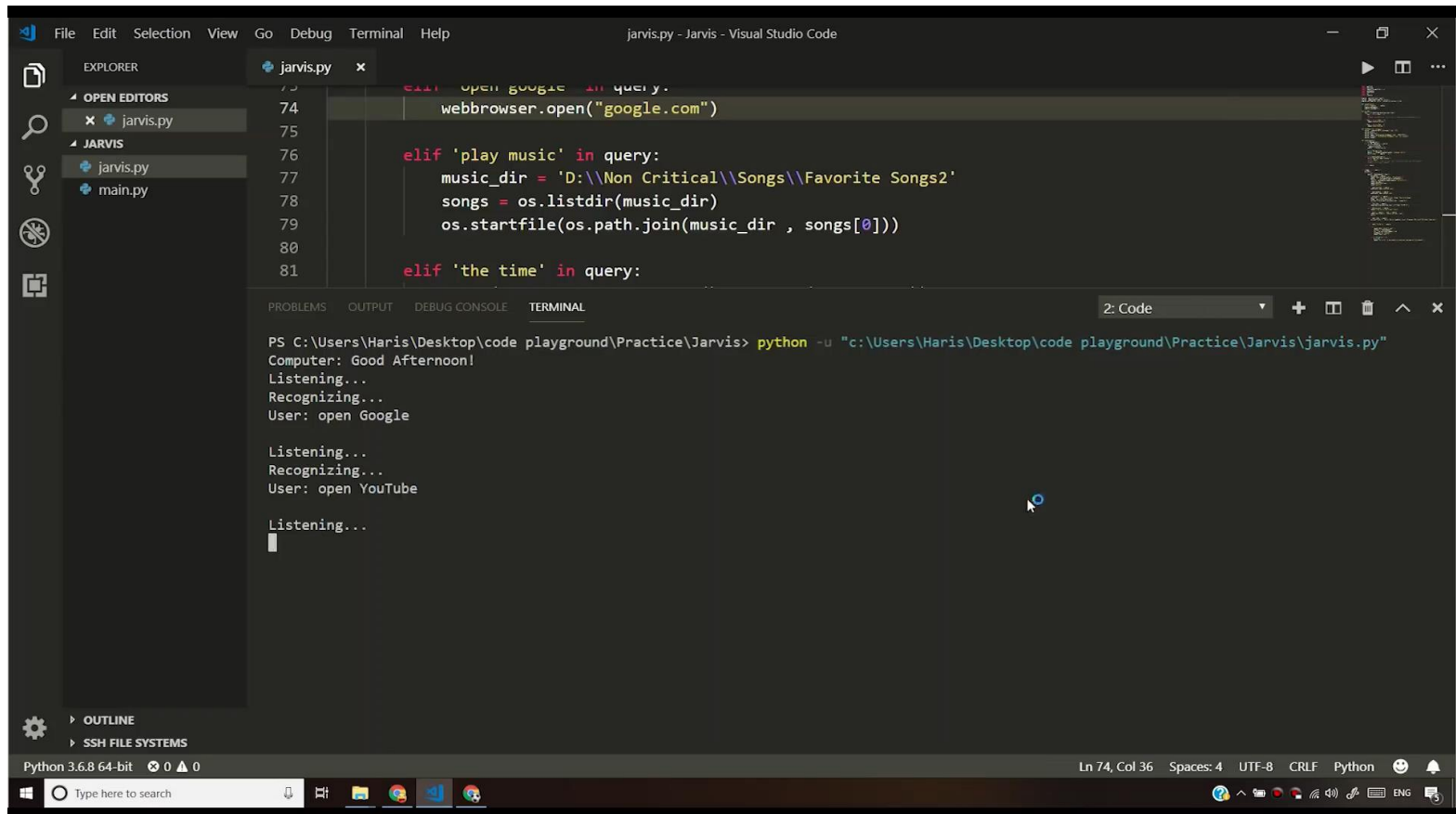
6.4 ARTIFICIAL INTALIGENT USING PYTHON:WIKYPIDEYA

 6.5 Working Project Video Link : -
https://drive.google.com/file/d/1r8pOpGlqIbiEQeNnS89E9jeyavWPoH2a/view?usp=drive sdk

Chapter 7
CONCLUSION

7.1 Conclusion

This paper is based on the concept of artificial intelligence, areas of artificial intelligence and its techniques. The field of artificial intelligence gives the ability to the machines to think analytically, using concepts. Artificial Intelligence will continue to play an increasingly important role in the various fields. We conclude that further research in this area can be done as there are very promising and profitable results that are obtainable from such techniques, while scientists have not yet realized the full potential and ability of artificial intelligence. This technology and its applications will likely have far-reaching effects on human life in the years to come. This review has not attempted to detail all the literature in the area but to report mainly the most recent work

7.2 Future Scope

Artificial Intelligence has come a long way in the last decade. But theres still a large amount of work required to develop strong AI. Giving a machine Common Sense or intuition is a critical component of allowing a machine to truly learn. Knowing how to convert the input to output appears important, but a machine that truly understands why output relates to the input is necessary for strong AI. It is also necessary to further develop methods for detecting human emotions and actions. This is a multi disciplinary subject and will require advancements in Psychology, Linguistics, Machine Learning, Natural Language Processing and Image Processing to learn how humans

behave to detect emotions and to analyze human expressions and body language

Here are some ways listed below in which AI is going to be helpful to us in the near Future:

Automated Transportation: – We have already begun to see the beginning of smart cars or self-driving cars, but for now these kinds of vehicles need to have a driver at the wheel for safety. Instead of these very exciting ongoing developments, the technology isnt perfect yet, and it is going to take a while for the common people to accept these smart vehicles to use widely. The U.S. Transportation Department has released definitions of different levels of automation since Google began testing a self driving car in 2012.

Cyborg Technology: – Being human has its own flaws and one of the biggest disadvantages of being a human is simply our own body and brain. Now, according to a researcher Shimon Whiteson it is possible to augment ourselves with computers in the near future in order to improve our own natural abilities. Yoky Matsuka of Nest believes that in the near future an AI system will be developed which is going to be useful for the people with amputated limbs, as the brain will be able to communicate with a robotic limb to provide more control to the patient.

Attaining Dangerous Jobs: – Robots have already begun to attain some of the most dangerous jobs like defusing a bomb. Well, technically they are not robots; they are drones, which are being used as the physical counterpart in bomb defusing, which requires a human to control them, instead of using an AI system. Despite of whatever their classification is, they have saved thousands of lives by taking over these kinds of jobs in the world. There are also some other jobs which are being reconsidered for robot integration for example, Welding, which is quite known for releasing earsplitting noise, intense heat and toxic substances, now can be outsourced to robots.

Robot as Friends: – Dont you think that how fascinating it would be to be friends with a robot? As for now robots have no emotions. The first big step towards a robot companion has been made by a company yin Japan one who would be able to feel and understand human emotions. Introduced in 2014, Pepper the companion robot went on sale in 2015, with all 1000 initial units selling out within a minute. Pepper went on sale in U.S. in 2016, and more sophisticated friendly robots are sure to follow.

mproved Elder Care: – For most of the elderly people, living everyday life and doing the basic needs is still a struggle, and for doing that most of them to hire outside help to manage their care or they just have to rely on family members. As the computer scientist at Washington State University Matthew Taylor says AI is at a stage where replacing this need isnt too far off. Home robots would be able to help the elderly people with their everyday tasks and will allow them to stay

independent and in their homes for as long as possible, which results in improving their overall well-being.

Chapter 8
REFERENCE

[1]   [Project Idea | (A Personal Assistant) - GeeksforGeeks](#)

[2]   [A.I. Architecture Intelligence :: Future Architecture](#)

[3]   [https://en.wikipedia.org/wiki/J.A.R.V.I.S.#:~:text=Iron%20Man%203.-,J.A.R.V.I.S.,and%20the%20Iron%20Man%20suits](#).

[4]   [https://amazonechogroup.wordpress.com/algorithm-2/](#)

[5]   https://www.researchgate.net/figure/Artificial-Intelligence-System-Architecture_fig2_267953355