REPORT

VIRTUAL DESKTOP ASSISTANT

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INTRODUCTION

1] Problem Statement-

Building personal assistant software (a virtual assistant) using Python language which will perform user requested task and also to answer questions that users may have using user's voice/voice command.

2] Scope/Applicability-

As we all know nowadays people prefer to talk on internet instead of searching so we need a advanced virtual assistant for it. People who are working on laptop or in office have sit for 6-8 hrs and work on screen's. So using Virtual Assistant for small work/task can help you and reduce your time.

OBJECTIVE

Virtual assistants can tremendously save you time. We spend hours in online research and then making the report in our terms of understanding.TESSA can do that for you. Provide a topic for research and continue with your tasks while TESSA does the research. Another difficult task is to remember test dates, birthdates or anniversaries. It comes with a surprise when you enter the class and realize it is class test today. Just tell TESSA in advance about your tests and she reminds you well in advance so you can prepare for the test.

One of the main advantages of voice searches is their rapidity. In fact, voice is reputed to be four times faster than a written search: whereas we can write about 40 words per minute, we are capable of speaking around 150 during the same period of time15. In this respect, the ability of personal assistants to accurately recognize spoken words is a prerequisite for them to be adopted by consumers.

SOFTWARE & HARDWARE REQUIRED:-

1.] ***Jupyter-***

The Jupyter Notebook is an open source web application that you can use to create and share documents that contain live code, equations, visualizations, and text. ... The name, Jupyter, comes from the core supported programming languages that it supports: Julia, Python, and R.

2.] ***Anaconda-***

Anaconda is a distribution of the Python and R programming languages for scientific computing (data science, machine learning applications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment.

3] **Python[3.8]** –

Python is an interpreted high-level general-purpose programming language. Python's design philosophy emphasizes code readability with its notable use of significant indentation.

4] Microphone, Speech recognition etc.

PROJECT IMPLEMENTATION

1. *Modules-*

pyttsx3: pyttsx is a cross-platform text to speech library which is platform independent. The major advantage of using this library for text-to-speech conversion is that it works offline. To install this module type the below command in the terminal.

SpeechRecognition: It allow us to convert audio into text for further processing. To install this module type the below command in the terminal.

webbrowser: It provides a high-level interface which allows displaying Web-based documents to users. To install this module type the below command in the terminal.

Wikipedia: It is used to fetch a variety of information from the Wikipedia website. To install this module type the below command in the terminal.

OS*: T*he OS module in Python provides functions for interacting with the operating system. OS comes under Python's standard utility modules. This module provides a portable way of using operating system dependent functionality.

Playsound: the playsound module contains only a single function named playsound(). It works with both WAV and MP3 files.

gTTS*:* There are several APIs available to convert text to speech in Python. One of such APIs is the Google Text to Speech API commonly known as the gTTS API. gTTS is a very easy to use tool which converts the text entered, into audio which can be saved as a mp3 file. The gTTS API supports several languages including English, Hindi, Tamil, French, German and many more.

Random: This module implements pseudo-random number generators for various distributions. For integers, there is uniform selection from a range. For sequences, there is uniform selection of a random element, a function to generate a random permutation of a list in-place, and a function for random sampling without replacement.

Date & Time: A Python program can handle date and time in several ways. Converting between date formats is a common chore for computers. Python's time and calendar modules help track dates and times.

SSL: An SSL Certificate is a text file with encrypted data that you install on your server so that you can secure/encrypt sensitive communications between your site and your customers. For some servers (such as Microsoft), the intermediate certificates are bundled with the SSL certificate.

Certifi: Python Certifi provides Mozilla’s thoroughly curated collection of Root Certificates for validating the trustworthiness of SSL certificates while verifying an identity of TLS hosts.

Image: The Import Image option allows you to add an image file. Add a company logo or other bitmap image in order to customize output for presentations and reports.

Subprocess: Subprocess in Python is a module used to run new codes and applications by creating new processes. It lets you start new applications right from the Python program you are currently writing. So, if you want to run external programs from a git repository or codes from C or C++ programs, you can use subprocess in Python.

Pyautogui: PyAutoGUI lets your Python scripts control the mouse and keyboard to automate interactions with other applications. The API is designed to be as simple. PyAutoGUI works on Windows, macOS, and Linux, and runs on Python 2 and 3. Sending keystrokes to applications.

Bs4: Beautiful Soup is a Python library for pulling data out of HTML and XML files. It works with your favorite parser to provide idiomatic ways of navigating, searching, and modifying the parse tree. It commonly saves programmers hours or days of work.

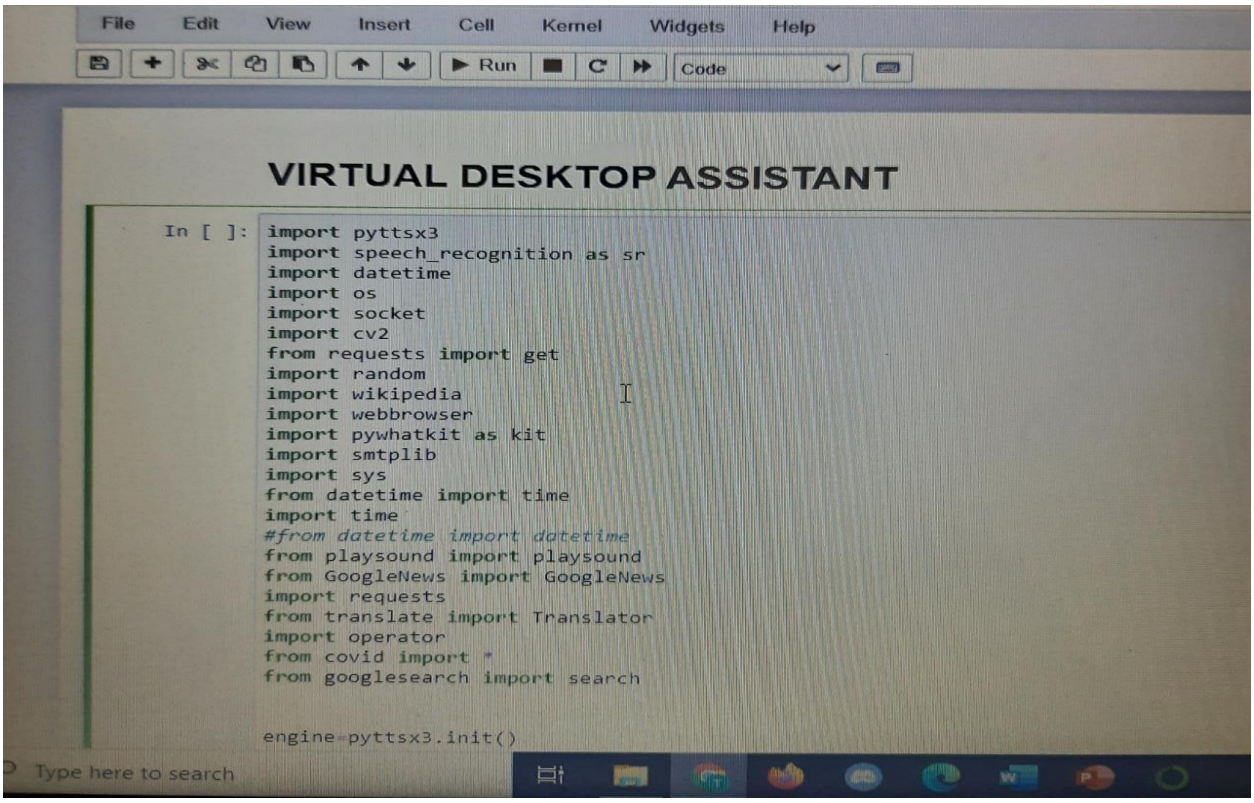
Urllib.request: The urllib. request module defines functions and classes which help in opening URLs (mostly HTTP) in a complex world — basic and digest authentication, redirections, cookies and more. Open the URL url, which can be either a string or a Request object.

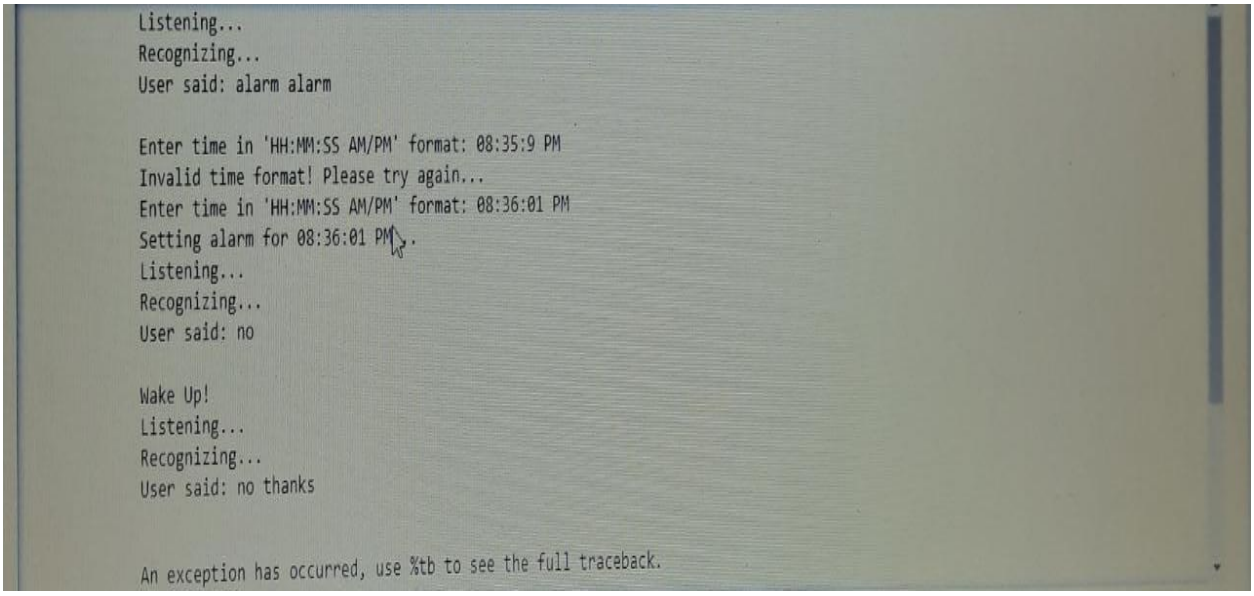
2. Tools & technology-

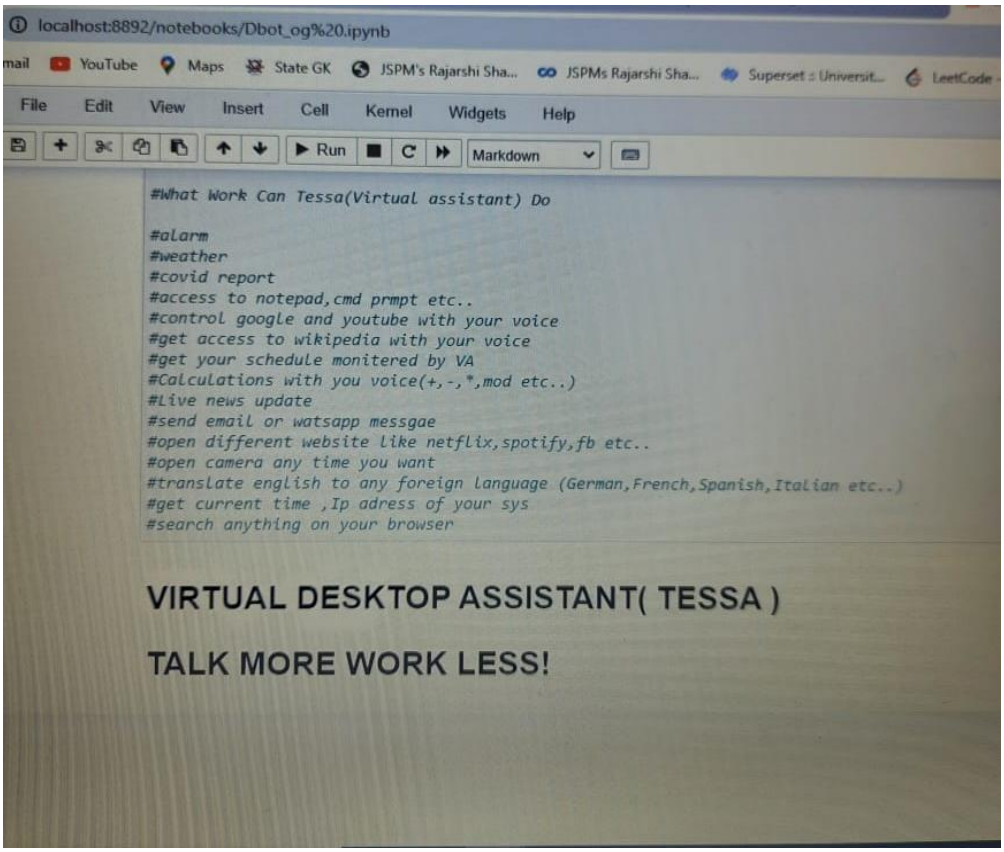
Jupyter-The Jupyter Notebook is an open source web application that you can use to create and share documents that contain live code, equations, visualizations, and text. ... The name, Jupyter, comes from the core supported programming languages that it supports: Julia, Python, and R.

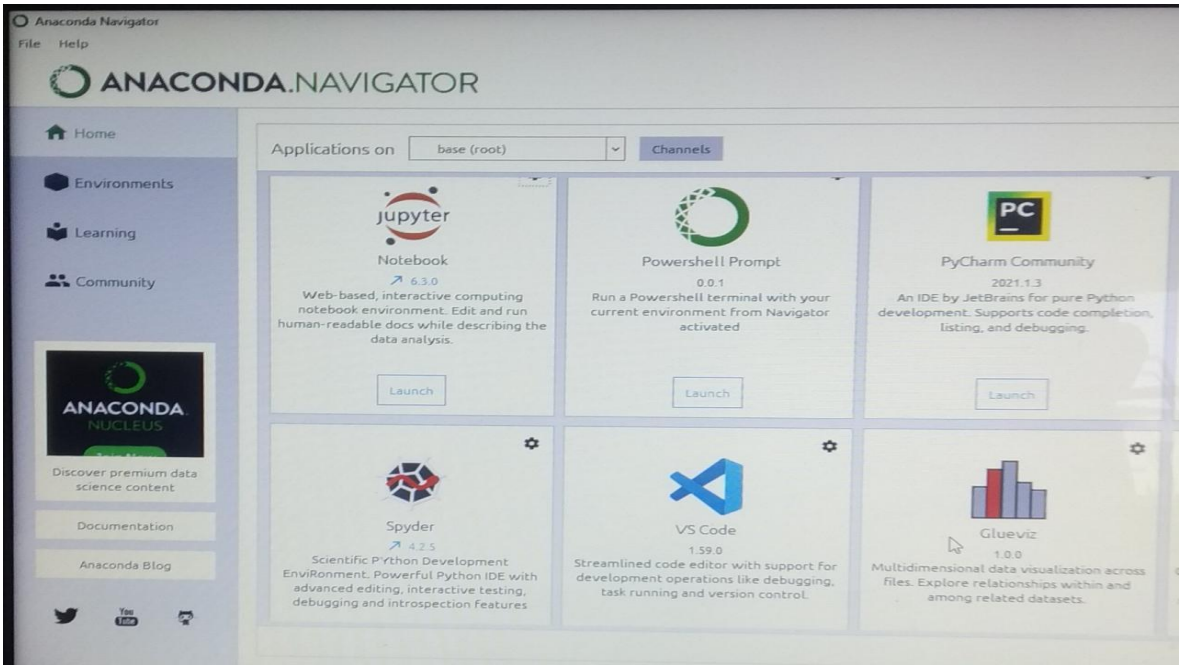
Anaconda- Anaconda is a distribution of the Python and R programming languages for scientific computing (data science, machine learning applications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment.

RESULT

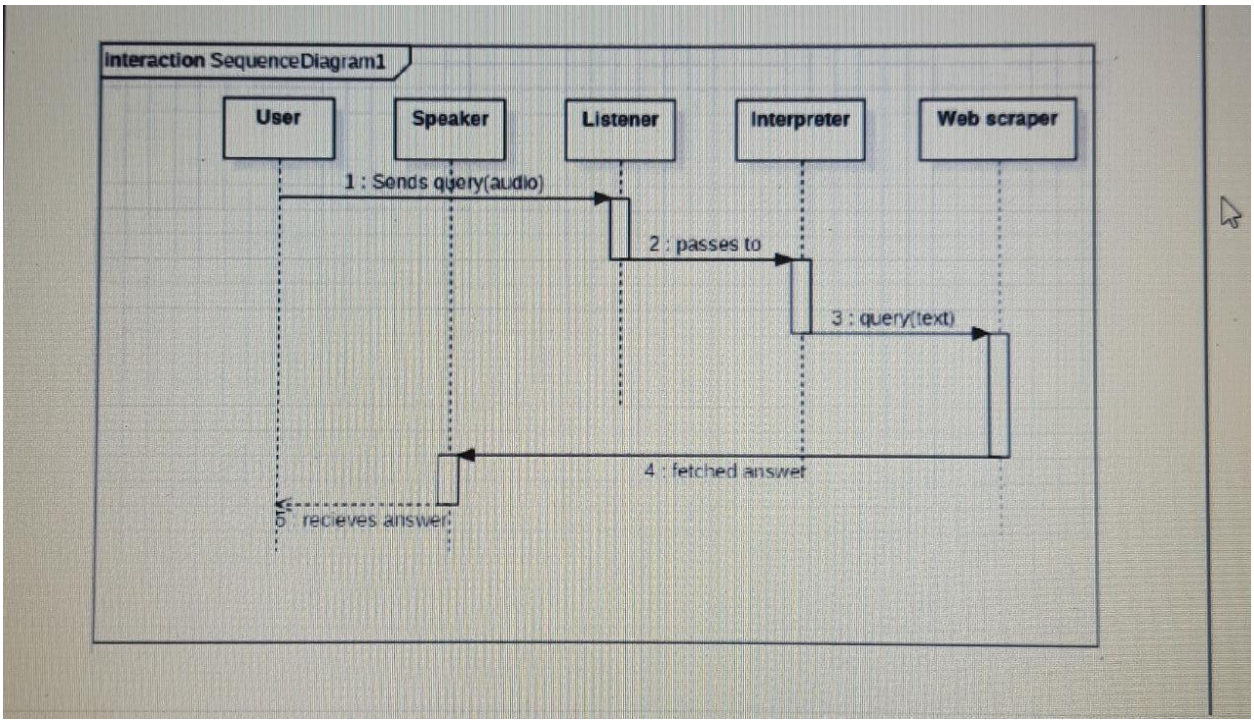

File Edit View Insert Cell Kernel Widgets Help
Run
Code
VIRTUAL DESKTOP ASSISTANT
In [ ]:
import pyttsx3
import speech_recognition as sr
import datetime
import os
import socket
import cv2
from requests import get
import random
import wikipedia
import webbrowser
import pywhatkit as kit
import smtplib
import sys
from datetime import time
import time
#from datetime import datetime
from playsound import playsound
from GoogleNews import GoogleNews
import requests
from translate import Translator
import operator
from covid import *
from googlesearch import search
engine=pyttsx3.init()
Type here to search


Listening...
Recognizing...
User said: alarm alarm
Enter time in 'HH:MM:SS AM/PM' format: 08:35:9 PM
Invalid time format! Please try again...
Enter time in 'HH:MM:SS AM/PM' format: 08:36:01 PM
Setting alarm for 08:36:01 PM.
Listening...
Recognizing...
User said: no
Wake Up!
Listening...
Recognizing...
User said: no thanks
An exception has occurred, use %tb to see the full traceback.


localhost:8892/notebooks/Dbot_og%20.ipynb
YouTube
Maps
State GK
JSPM's Rajarshi Sha...
JSPMs Rajarshi Sha...
Superset :: Universit...
File
Edit
View
Insert
Cell
Kernel
Widgets
Help
Run
Markdown
#What Work Can Tessa(Virtual assistant) Do
#alarm
#weather
#covid report
#access to notepad,cmd prmpt etc..
#control google and youtube with your voice
#get access to wikipedia with your voice
#get your schedule monitered by VA
#Calculations with you voice(+,-,*,mod etc..)
#Live news update
#send email or watsapp messgae
#open different website like netflix,spotify,fb etc..
#open camera any time you want
#translate english to any foreign language (German,French,Spanish,Italian etc..)
#get current time ,Ip adress of your sys
#search anything on your browser
VIRTUAL DESKTOP ASSISTANT(TESSA)
TALK MORE WORK LESS!

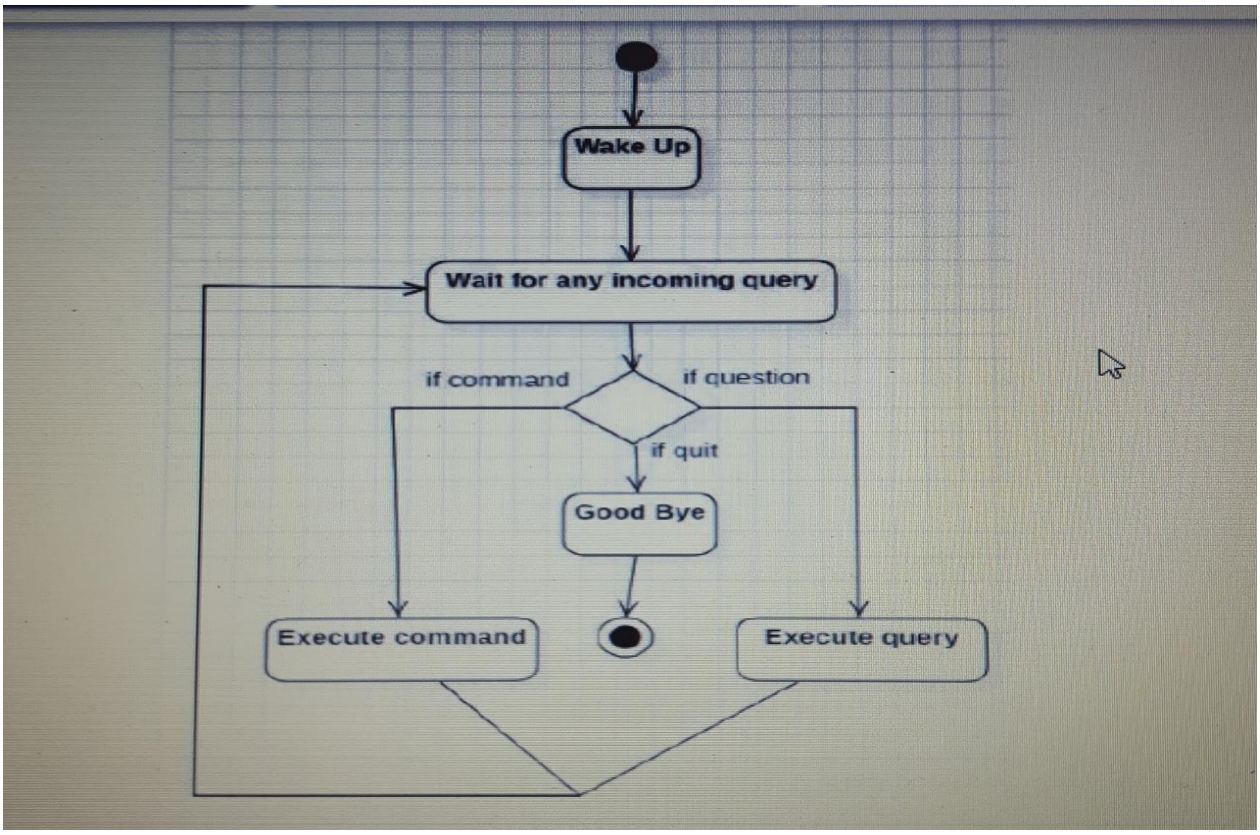

Anaconda Navigator
File
Help
ANACONDA.NAVIGATOR
Home
Environments
Learning
Community
Applications on
base (root)
Channels
Notebook
6.3.0
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.
Launch
Powershell Prompt
0.0.1
Run a Powershell terminal with your current environment from Navigator activated
Launch
PyCharm Community
2021.1.3
An IDE by JetBrains for pure Python development. Supports code completion, listing, and debugging.
Launch
ANACONDA
NUCLEUS
Discover premium data science content
Documentation
Anaconda Blog
Spyder
4.2.5
Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features
VS Code
1.59.0
Streamlined code editor with support for development operations like debugging, task running and version control.
Glueviz
1.0.0
Multidimensional data visualization across files. Explore relationships within and among related datasets.

Sequence diagram for Query-Response



The above sequence diagram shows how an answer asked by the user is being fetched from internet. The audio query is interpreted and sent to Web scraper. The web scraper searches and finds the answer. It is then sent back to speaker, where it speaks the answer to user.

DATA FLOW DIAGRAM



The main component here is the Virtual Assistant. It provides two specific service, executing Task or Answering your question.

CONCLUSION:

I] So now the virtual assistant will save time and money by doing the small tasks for you and doing them accurately and with high quality. If you handle the virtual assistant correctly, it will be a boom in your daily work.

II] It can take command by voice or type and perform the task you specify using speech recognition and perform task more fast than you can do.

THANK YOU !