



**SILVER OAK UNIVERSITY**



**SILVER OAK COLLEGE OF COMPUTER**

**APPLICATION(SOCCA)**

**A**

**Project Report On**

**J.A.R.V.I.S. (Just A Rather Very Intelligent System)**

**Under the subject of MINOR PROJECT BCA, Semester-IV**

**Submitted By:**

<b>Sr. No.</b>	<b>Name</b>	<b>Enrollment No.</b>
1	MAYUR DODIYA	2204030100272

## **Silver Oak College of Computer Application**

Bachelor of Computer Application

(BCA)

### **CERTIFICATE**

**Date: 30/04/2024**

This is to certify that the project entitled “**J.A.R.V.I.S**” has been carried out by  
“**MAYUR DODIYA (2204030100272)** under my guidance in fulfillment of the  
MINOR-PROJECT-2, 4rd Semester, Degree of Bachelor of Computer Application  
of Silver Oak University, Ahmedabad during the academic year 2023.



**Prof.Akit Sama**

Assistant Professor(SOCCA)



**Prof. Aakash Desai**

Head of Department(SOCCA)

## CANDIDATE'S DECLARATION

We have finished our project report entitled “**J.A.R.V.I.S. (JUST A RATHER VERY INTELLIGENT SYSTEM)**,” and submitted it to our respective guide. We are in the 3rd semester and we have tried to give our best. We have done our work honestly and in a good way.

S.No.	Name of Student	Enrollment Number	Signature
1	Mayur Dodiya	2204030100272	



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## ACKNOWLEDGEMENT

We would like to extend our hearty thanks with a deep sense of gratitude and respect to all those who provided us with immense help and guidance during our project.

We would like to thank our Head of Department Mr. AAKASH DESAI for providing a vision about the system. We have greatly benefited from their regular critical reviews and inspiration throughout my work.

We would like to express our sincere thanks to our internal guide **PROF. AKIT SAMA** respectively, who gave us an opportunity to undertake such challenging and great innovative work. We are grateful to them for their guidance, encouragement, understanding and insightful support in the development process.

Last but not least we would like to mention here that we are greatly indebted to each and everybody who has been associated with our project at any stage but whose name does not find a place in this acknowledgment.

**Yours Sincerely,**

**Mayur Dodiya**

**2204030100272**

## **Abstract:**

*Our desktop assistant project, J.A.R.V.I.S. (Just A Rather Very Intelligent System), represents a comprehensive solution for users seeking to optimize their computer usage. Key features of J.A.R.V.I.S. include:*

- 1. Voice Command Recognition: J.A.R.V.I.S. utilizes advanced voice recognition technology to accurately interpret user commands, allowing for hands-free interaction with the computer system.*
- 2. Web Search Capabilities: With integrated web search functionality, J.A.R.V.I.S. enables users to quickly access information from the internet, making research tasks more efficient and convenient.*
- 3. Email Integration: J.A.R.V.I.S. seamlessly integrates with email services, allowing users to compose, send, and manage emails using voice commands or intuitive interface controls.*
- 4. Personalized Assistance: J.A.R.V.I.S. provides personalized assistance tailored to the user's preferences, offering recommendations, reminders, and customized responses based on individual usage patterns.*
- 5. Intuitive Interface: The user-friendly interface of J.A.R.V.I.S. simplifies interaction and enhances usability, making it easy for users to navigate and access various features and functionalities.*
- 6. Task Management: J.A.R.V.I.S. helps users manage their tasks more effectively by providing organization tools, scheduling assistance, and task prioritization features.*
- 7. Continuous Improvement: Our project is designed with scalability and adaptability in mind, allowing for ongoing development and improvement based on user feedback and technological advancements.*

*Overall, J.A.R.V.I.S. aims to revolutionize the way users interact with their computers by providing a versatile and intelligent desktop assistant that optimizes productivity and user experience.*

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## INTRODUCTION TO J.A.R.V.I.S.

Introduction to J.A.R.V.I.S.: Just A Rather Very Intelligent System

In the realm of digital assistants, few names resonate as powerfully as J.A.R.V.I.S. Inspired by the fictional artificial intelligence (AI) system from the Marvel Universe, J.A.R.V.I.S. stands for "Just A Rather Very Intelligent System" and embodies the fusion of cutting-edge technology and human ingenuity.

The J.A.R.V.I.S. desktop assistant project represents a significant leap forward in personal computing. Developed by [Your Name], this sophisticated system is designed to revolutionize the way users interact with their computers and manage their tasks. With its diverse range of features and intuitive interface, J.A.R.V.I.S. offers unparalleled convenience and efficiency.

### Key Features and Functionalities :

J.A.R.V.I.S. is equipped with a plethora of features aimed at enhancing user productivity and streamlining daily activities. Some of its key functionalities include:

- 1.Voice Command Recognition:** J.A.R.V.I.S. utilizes advanced speech recognition technology to understand and execute voice commands issued by the user. This enables hands-free interaction and seamless integration into the user's workflow.
- 2.Web Search Capabilities:** Leveraging the power of the internet, J.A.R.V.I.S. can perform real-time web searches to retrieve information on a wide range of topics. Whether it's looking up facts on Wikipedia or searching for products on Amazon, J.A.R.V.I.S. delivers accurate and timely results.
- 3.Email Integration:** J.A.R.V.I.S. enables users to send emails effortlessly through voice commands. With support for popular email services like Gmail, users can compose and send messages with ease, enhancing communication efficiency.
- 4.Hardware Control:** From adjusting system settings to controlling peripheral devices, J.A.R.V.I.S. puts users in command of their hardware environment. Whether it's adjusting screen brightness, changing volume levels, or capturing screenshots, J.A.R.V.I.S. offers intuitive control options.
- 5.Facial Recognition:** Incorporating facial recognition technology, J.A.R.V.I.S. can identify users and personalize their experience accordingly. By recognizing known faces, J.A.R.V.I.S. can tailor its responses and actions to individual preferences, providing a personalized and seamless user experience.

## **OBJECTIVE OF THE J.A.R.V.I.S.**

### **Objectives of J.A.R.V.I.S.: Just A Rather Very Intelligent System :**

Welcome to the Objectives section of our presentation. The primary objectives of our project are as follows:

1. Develop a versatile desktop assistant capable of assisting users with various tasks and activities: J.A.R.V.I.S. aims to be a multifunctional assistant capable of handling a wide range of tasks, from scheduling appointments to providing weather updates, thereby enhancing user productivity and convenience.
2. Implement advanced voice command recognition to enable hands-free interaction with the assistant: By integrating sophisticated voice recognition technology, J.A.R.V.I.S. enables users to interact with the assistant using natural language commands, eliminating the need for manual input and enhancing accessibility.
3. Integrate web search functionality to allow users to quickly access information and resources online: J.A.R.V.I.S. provides seamless access to the vast wealth of information available on the internet, allowing users to perform web searches and retrieve relevant data effortlessly.
4. Incorporate email integration to enable sending and receiving emails directly through the assistant: With built-in email integration, J.A.R.V.I.S. streamlines communication by allowing users to compose, send, and receive emails without leaving the assistant environment, thus facilitating efficient communication.
5. Provide personalized assistance tailored to individual user preferences and needs: J.A.R.V.I.S. leverages user data and preferences to deliver personalized assistance, offering recommendations, reminders, and suggestions tailored to each user's unique requirements and preferences.

Our goal is to create a user-friendly and efficient desktop assistant that enhances productivity and simplifies daily tasks for users. With J.A.R.V.I.S., users can expect a seamless and intuitive experience that empowers them to accomplish more with their computers while minimizing friction and complexity.



## SYSTEM SPECIFICATIONS

### System Specifications:

#### Hardware Requirements:

- Processor: Intel Core i3 or equivalent
- Memory: 4GB RAM or higher
- Storage: 100GB of available storage space
- Webcam: Required for facial recognition feature
- Microphone: Required for voice command input
- Speakers: Required for audio output
- Internet Connection: Required for web-based functionalities

#### Software Requirements:

- Operating System: Windows 10, macOS, or Linux
- Python: Version 3.6 or higher
- Additional Libraries: OpenCV, pyttsx3, wikipedia, webbrowser, datetime, os, smtplib, tkinter, PIL, speech\_recognition, pyautogui, wmi, pycaw, email.mime, comtypes

#### Voice Commands and Functionality:

1. Wikipedia Search:
  - Command: "Wikipedia"
  - Functionality: Searches Wikipedia for the specified topic and provides a summary.
2. YouTube Downloader:
  - Command: "YouTube downloader"
  - Functionality: Opens the YouTube downloader application for downloading videos.
3. Open YouTube:
  - Command: "Open YouTube"
  - Functionality: Opens the YouTube website in the default web browser.
4. Open Amazon:
  - Command: "Open Amazon"
  - Functionality: Opens the Amazon website in the default web browser.
5. Search in Amazon:
  - Command: "Search in Amazon"
  - Functionality: Searches for the specified product on Amazon.



6. Open Google:
  - Command: "Open Google"
  - Functionality: Opens the Google website in the default web browser.
7. Open Stack Overflow:
  - Command: "Open Stack Overflow"
  - Functionality: Opens the Stack Overflow website in the default web browser.
8. Search in YouTube:
  - Command: "Search in YouTube"
  - Functionality: Searches YouTube for the specified query.
9. Search:
  - Command: "Search"
  - Functionality: Performs a web search for the specified query using Google.
10. Location:
  - Command: "Location"
  - Functionality: Opens Google Maps with the specified location.
11. Open Gmail:
  - Command: "Open Gmail"
  - Functionality: Opens the Gmail website in the default web browser.
12. Open GitHub:
  - Command: "Open GitHub"
  - Functionality: Opens the GitHub website in the default web browser.
13. Open Instagram:
  - Command: "Open Instagram"
  - Functionality: Opens the Instagram website in the default web browser.
14. Change Voice:
  - Command: "Change voice [male/female]"
  - Functionality: Changes the voice of J.A.R.V.I.S. to male or female.
15. Take Screenshot:
  - Command: "screenshot"
  - Functionality: Captures a screenshot of the current screen.
16. Adjust Brightness:
  - Command: "Set brightness to [percentage]"
  - Functionality: Adjusts the brightness of the screen to the specified percentage.



17. Increase Volume:
  - Command: "volume up"
  - Functionality: Increases the system volume.
18. Decrease Volume:
  - Command: "volume down"
  - Functionality: Decreases the system volume.
19. Shutdown:
  - Command: "Shutdown"
  - Functionality: Initiates the shutdown process for the computer.
20. Restart:
  - Command: "Restart"
  - Functionality: Restarts the computer.
21. Sleep:
  - Command: "Sleep"
  - Functionality: Puts the computer into sleep mode.
22. Play Music:
  - Command: "Play music"
  - Functionality: Plays music from a predefined music file.
23. Current Time:
  - Command: "the time"
  - Functionality: Tells the current time.
24. CPU Usage:
  - Command: "CPU "
  - Functionality: Displays the current CPU usage.
25. Are You There:
  - Command: "Are you there"
  - Functionality: Checks if J.A.R.V.I.S. is active and responsive.
26. Who Made You:
  - Command: "Who made you"
  - Functionality: Provides information about the creator of J.A.R.V.I.S.
27. Your Friend:
  - Command: "Who are your friends"
  - Functionality: Provides information about J.A.R.V.I.S.'s virtual assistant friends.

28. Your Master:
  - Command: "Who is your master"
  - Functionality: Provides information about the creator or current user of J.A.R.V.I.S.
29. Your Name:
  - Command: "What's your name"
  - Functionality: Tells the name of the desktop assistant.
30. What J.A.R.V.I.S. Stands For:
  - Command: "What do you stand for"
  - Functionality: Explains the acronym J.A.R.V.I.S. and its meaning.
31. Tell Me a Joke:
  - Command: "joke"
  - Functionality: Tells a humorous joke.
32. Stop/Shutdown Command:
  - Commands: "Sleep", "Stop", "Please stop"
  - Functionality: Deactivates J.A.R.V.I.S. and exits the program.
33. Translate:
  - Command: "Translate [word]"
  - Functionality: Translates the specified word to English.
34. Weather:
  - Command: "Weather"
  - Functionality: Provides current weather information.
35. News:
  - Command: "News"
  - Functionality: Fetches and reads out the latest news headlines.
36. Remember That:
  - Command: "Remember that [message]"
  - Functionality: Stores a message for later retrieval.
37. Open Code:
  - Command: "Open code"
  - Functionality: Opens the Visual Studio Code editor.
38. Do You Remember Anything:
  - Command: "Do you remember anything"
  - Functionality: Retrieves and reads out a previously stored message.

39. Dictionary:

- Command: "Dictionary"
- Functionality: Opens an intelligent dictionary for word lookup.

These voice commands and functionalities allow users to interact with J.A.R.V.I.S. effectively and perform various tasks with ease and convenience.



## SYSTEM DESIGN OF J.A.R.V.I.S.

J.A.R.V.I.S. is designed as a sophisticated desktop assistant aimed at enhancing user productivity and convenience. The system design encompasses several key components, including architecture, modules, and user interaction mechanisms. Here's an overview of the system design:

### 1. Architecture:

- J.A.R.V.I.S. follows a modular architecture, allowing for flexibility and scalability.
- The system architecture consists of various interconnected modules responsible for different functionalities.
- Modules include voice command recognition, web search, email integration, personalized assistance, and hardware control.

### 2. Modules:

- Voice Command Recognition Module: This module utilizes speech recognition libraries to interpret user commands and convert them into actionable tasks.
- Web Search Module: Enables users to perform web searches using popular search engines like Google, Amazon, and YouTube.
- Email Integration Module: Facilitates sending and receiving emails directly through J.A.R.V.I.S., enhancing communication efficiency.
- Personalized Assistance Module: Provides personalized assistance tailored to individual user preferences and needs. It includes features like weather updates, news headlines, jokes, and dictionary lookup.
- Hardware Control Module: Allows users to control hardware components such as screen brightness, volume, shutdown, restart, and sleep mode.

### 3. User Interaction Mechanisms:

- Voice Commands: Users interact with J.A.R.V.I.S. primarily through voice commands, enabling hands-free operation and intuitive interaction.
- Graphical User Interface (GUI): J.A.R.V.I.S. features a graphical user interface built using Tkinter, providing visual feedback and interaction options.
- Facial Recognition: The system incorporates facial recognition technology to identify authorized users and provide a personalized experience.

### 4. Integration with External Services:

- J.A.R.V.I.S. integrates with various external services and APIs to enhance functionality. These include Wikipedia for information retrieval, YouTube for video playback, Gmail for email management, and weather APIs for weather updates.

5. Scalability and Extensibility:

- The system is designed to be scalable, allowing for the addition of new features and functionalities.
- New modules can be easily integrated into the existing architecture, expanding J.A.R.V.I.S.'s capabilities over time.
- The modular design also facilitates maintenance and updates, ensuring the system remains robust and up-to-date.

6. User Experience Considerations:

- Emphasis is placed on providing a seamless and intuitive user experience, with minimal learning curve and maximum efficiency.
- Natural language processing techniques are employed to improve speech recognition accuracy and understand user intent more effectively.
- The system's response time is optimized to provide prompt feedback and enhance user satisfaction.

Overall, the system design of J.A.R.V.I.S. is aimed at creating a powerful, versatile, and user-friendly desktop assistant capable of assisting users in various tasks and activities. Through its modular architecture, integration with external services, and emphasis on user experience, J.A.R.V.I.S. aims to revolutionize the way users interact with their computers and manage their daily routines.

## PROTOTYPE OF J.A.R.V.I.S.

The prototype of J.A.R.V.I.S. represents a functional version of the desktop assistant designed to demonstrate its core features and functionalities. While not a final product, the prototype serves as a proof of concept and provides a tangible representation of the envisioned system. Here's an overview of the prototype:

1. User Interface:
  - The prototype includes a basic graphical user interface (GUI) built using Tkinter, a Python library for creating GUI applications.
  - The GUI provides visual feedback and interaction options, allowing users to interact with J.A.R.V.I.S. in a familiar and intuitive manner.
2. Voice Command Recognition:
  - The prototype incorporates voice command recognition capabilities using the SpeechRecognition library in Python.
  - Users can issue voice commands to J.A.R.V.I.S., which are then processed and interpreted by the system to perform various tasks.
3. Core Functionalities:
  - The prototype includes core functionalities such as web search, email integration, personalized assistance, and hardware control.
  - Users can perform web searches, send and receive emails, get weather updates, read news headlines, tell jokes, and control hardware components like screen brightness and volume.
4. Integration with External Services:
  - J.A.R.V.I.S. prototype integrates with external services and APIs to enhance its functionality.
  - For example, it uses Wikipedia for information retrieval, YouTube for video playback, Gmail for email management, and weather APIs for weather updates.
5. Facial Recognition:
  - The prototype may include basic facial recognition functionality to identify authorized users and provide a personalized experience.
  - This feature is implemented using OpenCV, a computer vision library, to detect and recognize faces in real-time.



6. Scalability and Extensibility:

- The prototype is designed with scalability and extensibility in mind, allowing for the addition of new features and functionalities.
- New modules can be easily integrated into the existing architecture, expanding J.A.R.V.I.S.'s capabilities over time.

7. User Experience:

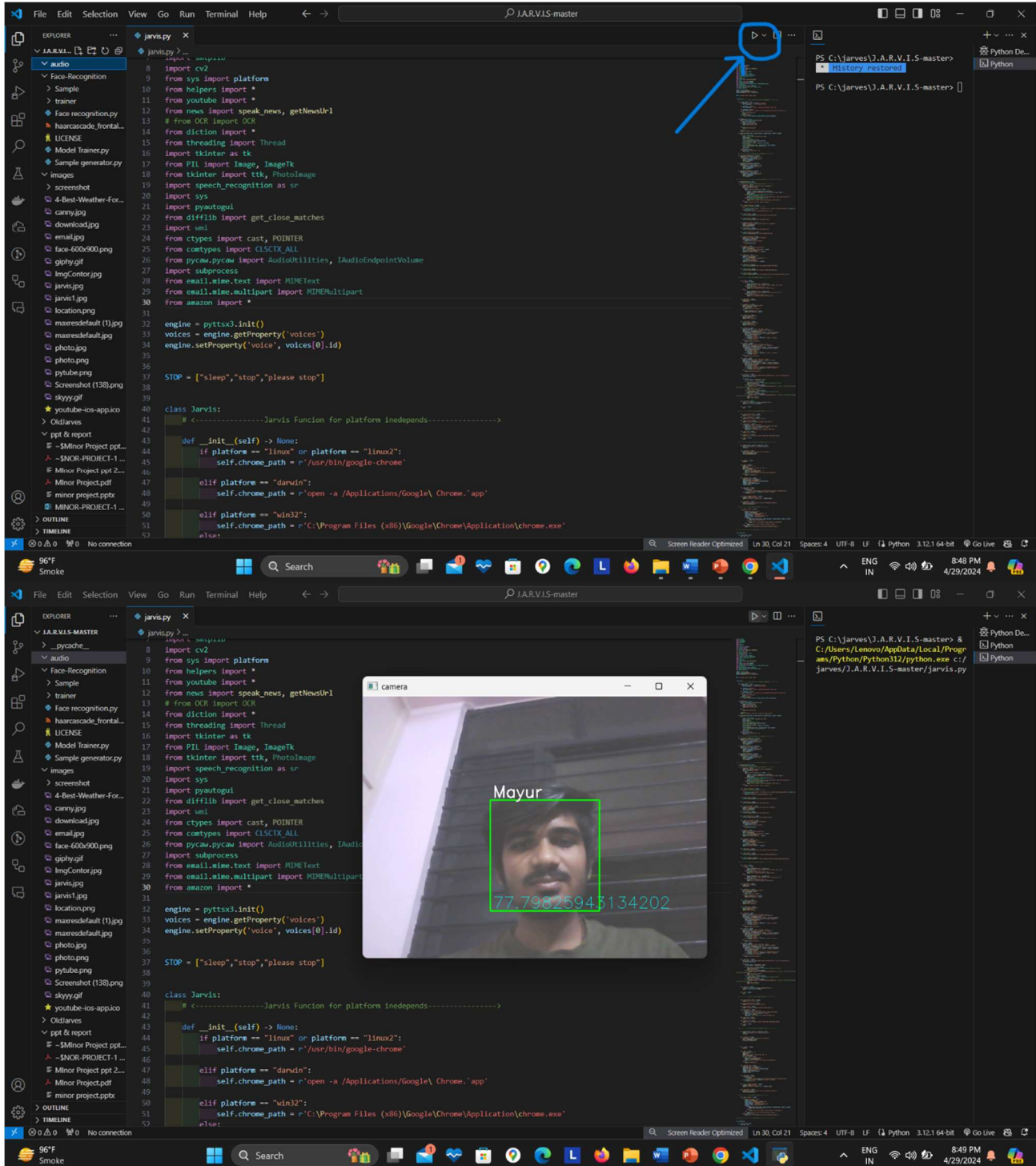
- The prototype emphasizes providing a seamless and intuitive user experience, with minimal learning curve and maximum efficiency.
- Natural language processing techniques are employed to improve speech recognition accuracy and understand user intent more effectively.

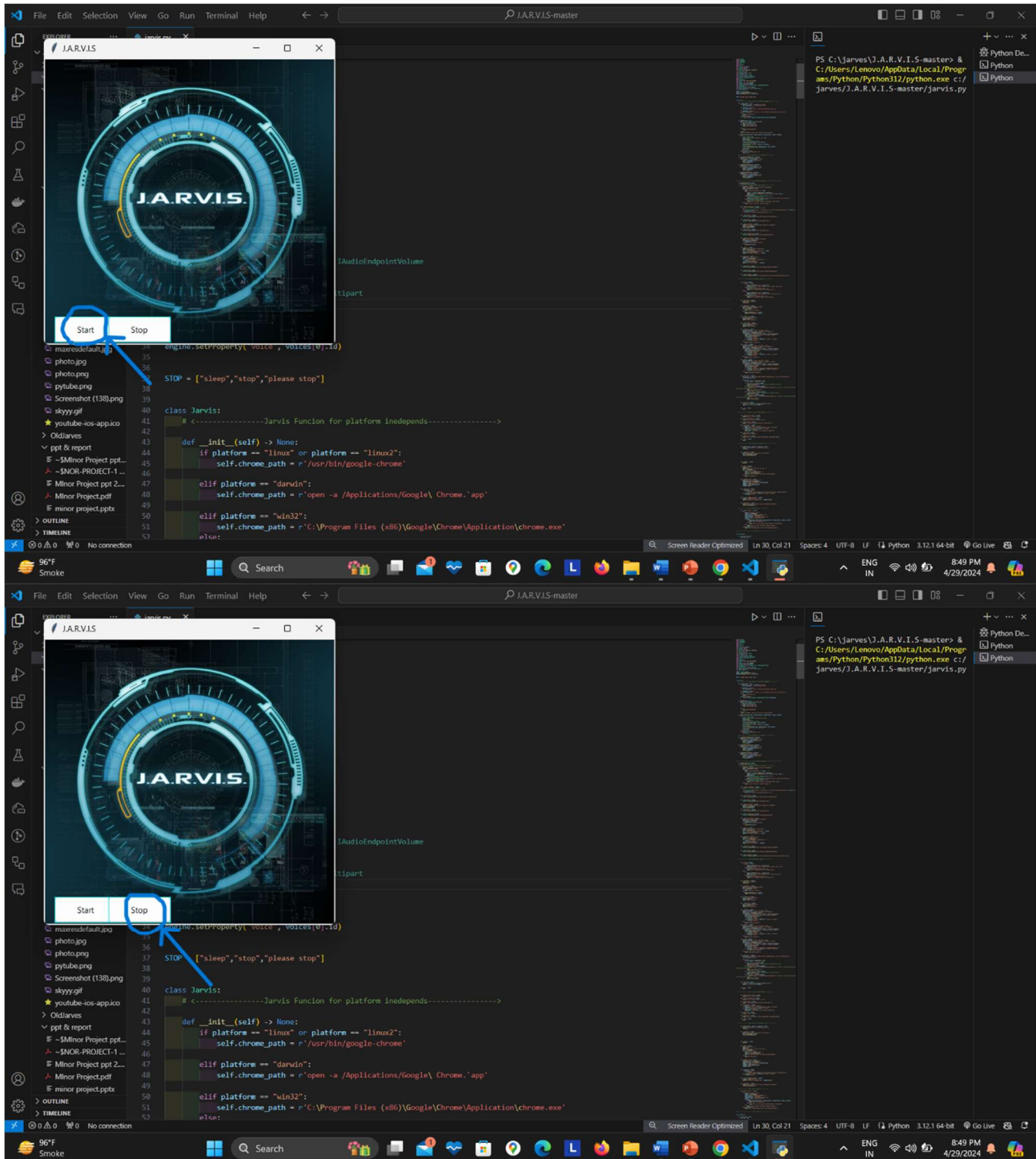
8. Testing and Feedback:

- The prototype undergoes testing with a select group of users to gather feedback and identify areas for improvement.
- User feedback is used to refine the prototype and prioritize features for further development.

Overall, the prototype of J.A.R.V.I.S. serves as a tangible representation of the envisioned desktop assistant, demonstrating its core features and functionalities in a controlled environment. Through iterative refinement and testing, the prototype lays the foundation for the development of the final product, aiming to revolutionize the way users interact with their computers and manage their daily routines.

## SCREENSHOTS OF J.A.R.V.I.S.









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MONDAY  
29 APRIL, 2024.  
8:50 PM

JARVIS

Start Stop

JARVIS-master

JARVIS

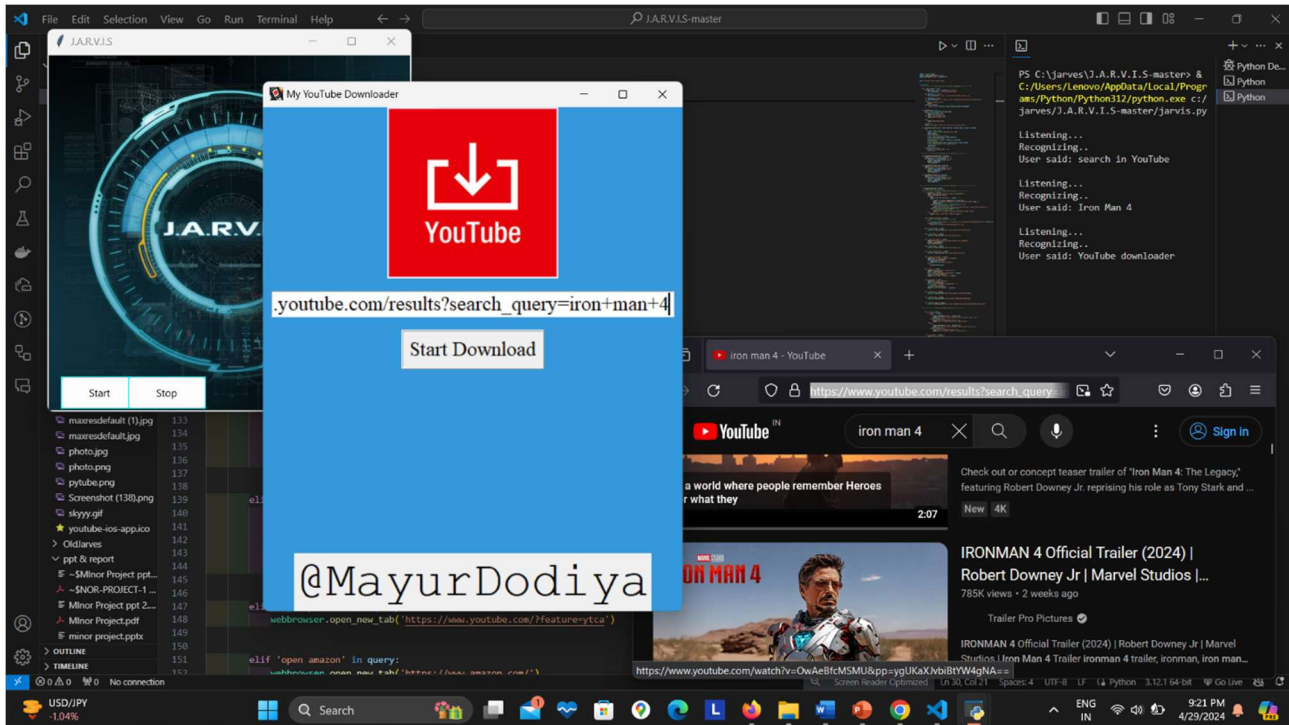
Start Stop

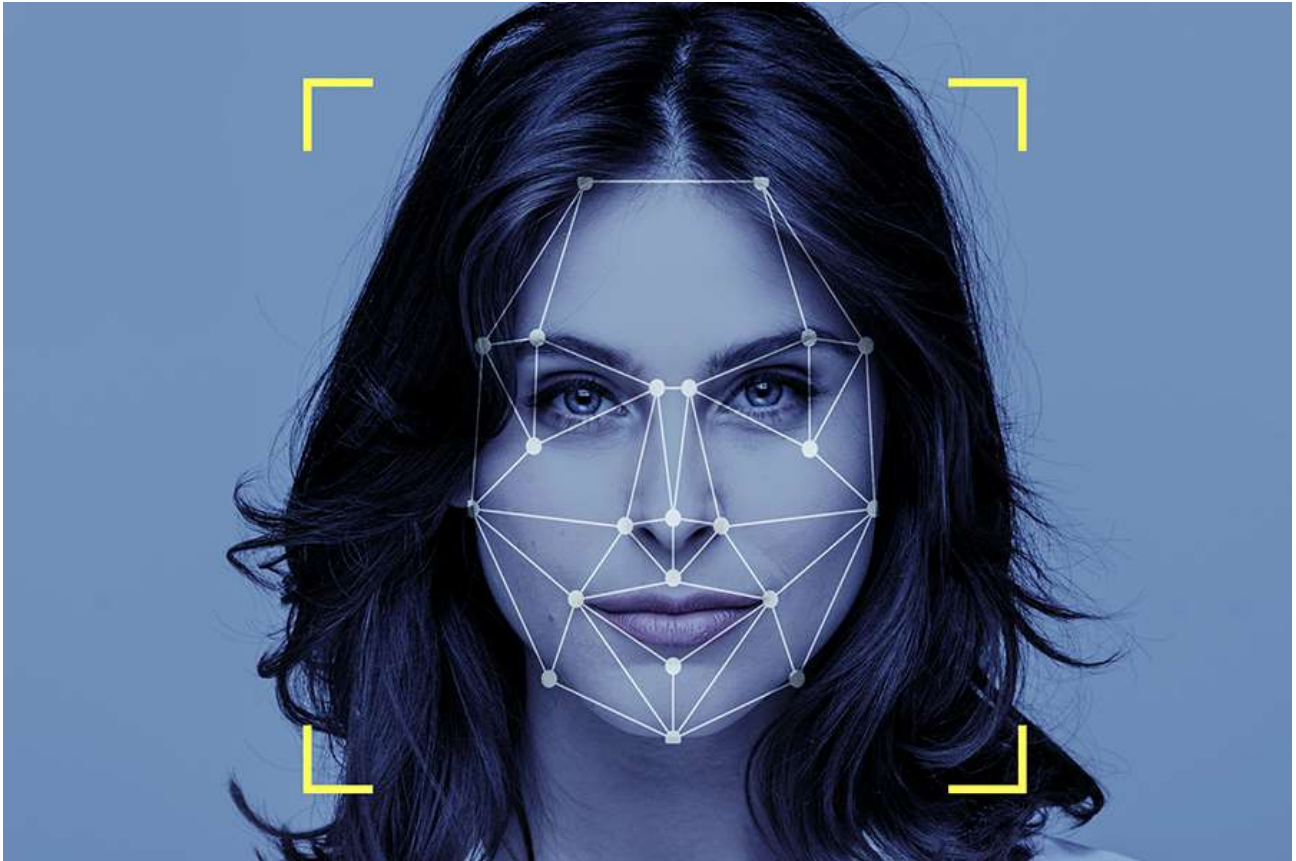
iron man 4 - YouTube

100+ Popular Games

Sponsored - mlgame

```
def countdownforshutdown(self, duration):  
    speak('your pc has been shutdown in -')  
    for remaining in range(duration, 0, -1):  
        print(f'{remaining} seconds left')  
        speak(f'{remaining}')  
        time.sleep(0.9)  
  
def countdownforrestart(self, duration):  
    speak('your pc has been restart in -')  
    for remaining in range(duration, 0, -1):  
        print(f'{remaining} seconds left')  
        speak(f'{remaining}')  
        time.sleep(0.9)
```





# Wikipedia search using python





## CONCLUSION

In conclusion, J.A.R.V.I.S. (Just A Rather Very Intelligent System) represents a significant leap forward in the realm of desktop assistant technology. Through its development and prototype demonstration, several key points emerge:

1. **Innovative Features and Functionalities:** J.A.R.V.I.S. offers an extensive array of features and functionalities designed to enhance user productivity and convenience. From voice command recognition to web search capabilities, email integration, personalized assistance, and hardware control, J.A.R.V.I.S. aims to revolutionize the way users interact with their computers.
2. **User-Centric Design:** The design of J.A.R.V.I.S. prioritizes the user experience, with a focus on intuitive interfaces, natural language processing, and seamless interaction. By understanding user intent and adapting to individual preferences, J.A.R.V.I.S. provides a personalized and efficient assistant tailored to each user's needs.
3. **Integration and Scalability:** J.A.R.V.I.S. seamlessly integrates with external services and APIs to expand its functionality and adapt to evolving user requirements. Its modular architecture allows for easy scalability and extensibility, enabling the addition of new features and capabilities over time.
4. **Prototype Demonstration:** The prototype of J.A.R.V.I.S. serves as a proof of concept, demonstrating its core features and functionalities in a controlled environment. Through iterative refinement and testing, the prototype lays the groundwork for the development of the final product, aiming to deliver a robust and reliable desktop assistant solution.
5. **Future Prospects:** Looking ahead, the future of J.A.R.V.I.S. holds immense potential for further innovation and advancement. With ongoing development efforts and user feedback, J.A.R.V.I.S. is poised to evolve into a highly sophisticated and indispensable tool for users across various domains.

In summary, J.A.R.V.I.S. represents a groundbreaking achievement in desktop assistant technology, offering unparalleled convenience, efficiency, and personalized assistance to users worldwide. As development continues and new features are introduced, J.A.R.V.I.S. stands at the forefront of the digital assistant revolution, empowering users to accomplish more with their computers than ever before.