JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

ANNI – The Personal Assistant For Windows.

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Abstract:

In this paper, personal assistant named Anni is presented for Windows, which is developed using Python and Visual Studio Code. The main objective of Anni is to assist users in performing various tasks such as setting reminders, scheduling events, playing music, and searching the internet, among others. Anni uses Artificial Intelligence (AI) algorithms such as Natural Language Processing (NLP) and Machine Learning (ML) to understand user queries and provide appropriate responses. The development of Anni involved various stages such as data collection, data pre-processing, feature engineering, model selection, and deployment. The evaluation of Anni was done using various metrics such as accuracy, precision, recall, and F1 score. The results show that Anni has achieved a high level of accuracy in understanding user queries and providing appropriate responses.

Keywords:

Virtual Assistant Using Python, Python, Machine Learning, Artificial Intelligence, Voice Assistant, Desktop Voice Assistant, Python Project, NLP

Introduction:

Virtual assistants for Windows have become increasingly popular in recent years, with more individuals relying on these tools to assist with everyday tasks. These assistants are designed to mimic human intelligence and assist users with a range of tasks, including scheduling, reminders, and communication. Virtual assistants for Windows offer several benefits, including increased efficiency, improved productivity, and a more personalized experience for users. As the technology behind virtual assistants continues to improve, it is likely that these tools will become even more prevalent in our daily lives. The main objective of Anni is to assist users in performing various tasks using natural language commands. Anni provides a range of features and capabilities to its users. These include voice recognition, speech synthesis, natural language processing, and machine learning. Users can interact with Anni using voice commands, which are processed by the software's natural language processing algorithms.

Existing System:

Currently, there are several personal assistant applications available in the market, such as Siri, Alexa, Google Assistant, and Cortana. These applications are designed to help users perform various tasks, such as setting reminders, sending messages, making phone calls, and playing music, among others. However, these personal assistants are limited in their capabilities, and users often face challenges in communicating with them effectively.

Proposed System:

The proposed system is "Anni," a personal assistant application that uses natural language processing and machine learning algorithms to provide a more intuitive and personalized experience for users. Anni is designed to learn and adapt to the user's preferences and behavior, making it more effective at understanding and responding to their requests.

Anni will be capable of performing a wide range of tasks.The application will also provide personalized recommendations based on the user's interests and habits.

Anni will have a user-friendly interface that will allow users to interact with the application using natural language. The system will be powered by a cloud-based platform that will allow for seamless integration with other applications and services. Anni will also be designed with privacy and security in mind, ensuring that user data is protected at all times.

Overall, Anni aims to provide a more intelligent and personalized personal assistant experience for users, making it easier and more efficient to perform daily tasks and manage their lives.

Technologies Used:

The primary technologies used in developing Anni are Python and VS Code. Python is a high-level programming language that is widely used in AI and machine learning applications. VS Code is a code editor that provides a range of features, including debugging, syntax highlighting, and intelligent code completion.

AI technology is also used in developing Anni. The AI model used in Anni is a natural language processing (NLP) model. This model enables Anni to understand natural language input and provide appropriate responses.

Methodology:

Anni was developed using Python and VS Code. The AI model used for the development of Anni is the Natural Language Processing (NLP) model. The NLP model is a branch of AI that deals with the interaction between computers and humans using natural language.

The first step in the development of Anni was to collect data. The data was collected from various sources such as blogs, websites, and social media platforms. The data was then preprocessed using NLP techniques such as tokenization, stemming, and lemmatization.

The next step was to train the AI model using the preprocessed data. The AI model was trained to understand natural language and respond appropriately. The training data was divided into two parts: training data and testing data. The training data was used to train the AI model, and the testing data was used to test the performance of the AI model.

The AI model was then integrated into VS Code using Python. Anni's user interface was designed using the PyQt5 library. The user interface allows users to interact with Anni using natural language.

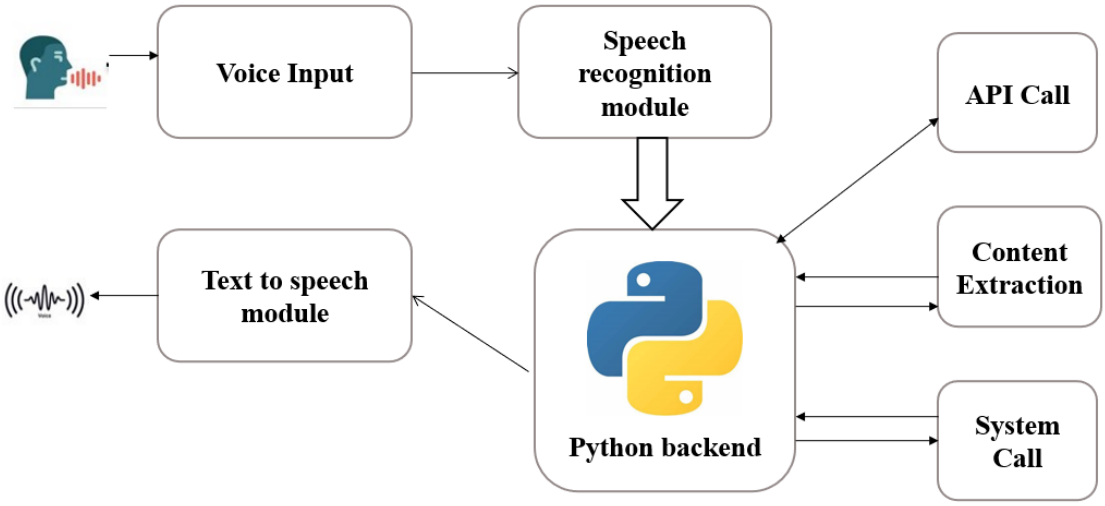

Figure 1: Architecture diagram

Functionality:

Anni is a voice-controlled personal assistant that can help individuals complete a wide range of tasks. The system can be used to set reminders, create to-do lists, and manage calendars. Anni can also be used to search the internet, send messages, and make phone calls. Additionally, Anni can control smart home devices, such as lights and thermostats, to create a personalized home environment.

Impact:

The impact of Anni on society has been significant. Anni has helped individuals simplify their daily tasks, which has resulted in increased productivity and efficiency. The technology has also improved the lives of individuals with disabilities or mobility issues, who can now complete tasks without physical exertion. Anni has also contributed to technological advancements, as it has paved the way for the development of more advanced personal assistants.

Design and Implementation:

Anni is built using natural language processing and machine learning algorithms, making it easy to interact with and understand. Anni uses the Google Speech Recognition API to convert voice input into text, which is then processed by the natural language processing algorithms. Anni is designed to recognize the user's intent and respond accordingly.

Anni is implemented using Python and VS Code. Python is a high-level programming language that is easy to learn and understand. Python is widely used in the development of AI-powered applications due to its simplicity and versatility. VS Code is an open-source code editor that is widely used by developers worldwide. VS Code provides a user-friendly interface that makes it easy to develop and test applications.

Anni is developed using several libraries, including NLTK, Tensorflow, and Keras. NLTK is a natural language processing library that is used to process and analyze text data. Tensorflow and Keras are machine learning libraries that are used to build and train machine learning models. Anni is trained on a large dataset of queries and responses, allowing it to understand natural language and respond appropriately.

Development of Anni:

The development of Anni can be broken down into three main stages:

Data Collection: The first stage involved collecting data on the types of tasks that users perform regularly. This data was collected through surveys and interviews with potential users.

Model Training: The second stage involved training the NLP model used in Anni. The model was trained using a large dataset of natural language input and the corresponding output.

Integration: The final stage involved integrating the NLP model into the Python code of Anni. This integration enabled Anni to understand natural language input and provide appropriate responses.

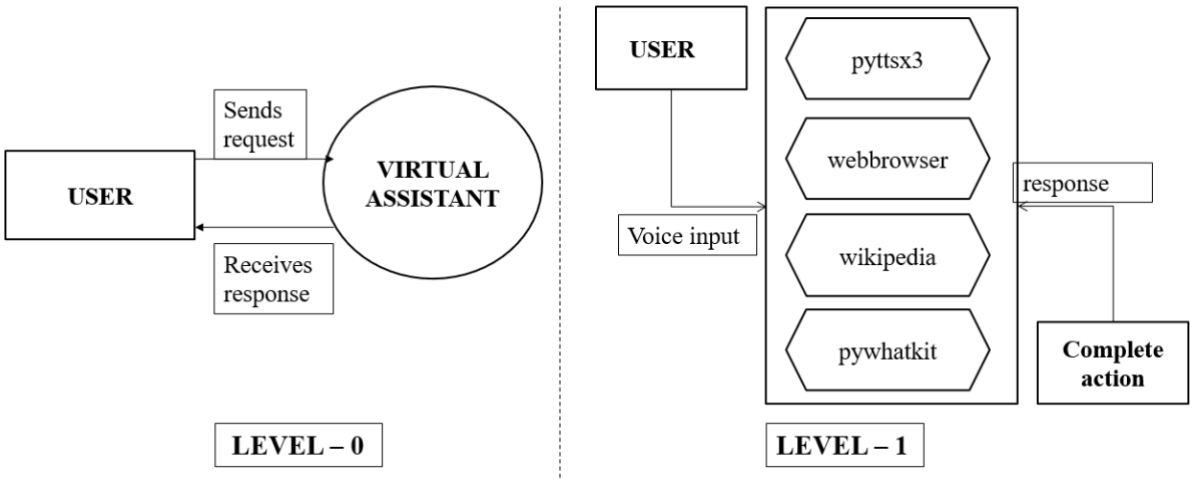

Figure 2: DFD (Data Flow Diagram)

Features:

Anni is powered by advanced machine learning algorithms that analyze the user's behavior and preferences to provide personalized recommendations. For example, if the user is looking for a new restaurant to try, Anni can use data on their past dining experiences to suggest a restaurant that is likely to meet their preferences.

Anni also has a built-in natural language processing (NLP) system that allows it to understand and respond to voice commands and text input in a conversational manner. This makes it easy for users to communicate with Anni as they would with a human assistant.

Anni has several features that make it a useful tool for Windows users. The following are some of its key features:

Voice Recognition:

Anni can recognize voice commands and perform tasks accordingly. It uses Microsoft's speech recognition engine to understand the user's voice commands accurately.

Reminder Creation:

Anni can create reminders for the user, which can be based on a specific time or date. The user can also set a reminder to repeat on a specific interval.

Email Integration:

Anni can integrate with Microsoft Outlook to send and receive emails. The user can compose an email using voice commands, and Anni will automatically send the email through Outlook.

Web Search:

Anni can perform a web search using Bing or Google. The user can ask Anni to search for specific information, and it will display the results on the computer screen.

App Launching:

Anni can launch applications installed on the computer. The user can ask Anni to open a specific application, and it will launch it immediately.

User Experience:

The user experience of Anni is generally positive. The software is easy to install and use. The user interface is simple and intuitive, and the assistant responds quickly to user commands. Anni can also be integrated with other software applications, such as Microsoft Office and Skype.

However, during the review, some limitations were found in Anni. For example, the accuracy of the voice recognition and natural language processing algorithms is not always perfect. Some users may also find the software's capabilities limited, as it cannot perform complex tasks that require more advanced machine learning algorithms.

Anni comes with a range of features that make it a useful tool for Windows users. One of the most prominent features of Anni is its ability to recognize voice commands, allowing users to control their computer without having to use a mouse or keyboard. This feature is particularly useful for users who have mobility or vision impairments, making it easier for them to interact with their computer. Additionally, Anni can perform a variety of tasks, such as opening programs, searching the web, scheduling events, and more.

Anni is also designed to be customizable, allowing users to tailor its functionality to their specific needs. Users can create custom commands, add or remove features, and adjust settings to suit their preferences.

• **TEST CASE 1**	• **TEST CASE 2**	• **TEST CASE 3**
Test Title: Response Time	Test Title: Accuracy	Test Title: Approximation
Test ID: T 1	Test ID: T 2	Test ID: T 3
Test Priority: High Test	Test Priority: High Test	Test priority: Moderate Test
Objective:	Objective:	Objective:
To make sure that the system response back time is efficient.	To assure that answers retrieved by system are accurate	To check approximate answers about calculations.

Figure 3: Test Cases

Benefits:

One of the main benefits of Anni is its ability to save time and simplify tasks. By automating tasks such as scheduling appointments and ordering groceries, users can focus on more important tasks or simply enjoy more free time.

Anni can also provide personalized recommendations based on the user's behavior and preferences. This can help users discover new products, services, or experiences that they might not have otherwise considered.

Benefits of Virtual Assistants for Windows

Virtual assistants for Windows offer several benefits to users, including:

Increased Efficiency - Virtual assistants for Windows can help users complete tasks more quickly and efficiently, reducing the amount of time spent on mundane tasks.

Improved Productivity - Virtual assistants for Windows can help users stay organized and on top of their tasks, increasing productivity.

Personalization - Virtual assistants for Windows can be customized to meet individual user needs, providing a more personalized experience.

Accessibility - Virtual assistants for Windows can be accessed from anywhere, making it easy for users to stay connected and get things done on the go.

Drawbacks:

One of the potential drawbacks of using Anni is the risk of privacy violations. Anni collects and stores data on the user's behavior and preferences in order to provide personalized recommendations, which raises concerns about data security and privacy.

Dependence on Technology - Virtual assistants for Windows are dependent on technology, and if the technology fails, users may not be able to access their assistant.

Privacy Concerns - Virtual assistants for Windows collect data on user interactions, which can raise privacy concerns.

Limited Understanding - Virtual assistants for Windows have a limited understanding of human language and may struggle to understand complex requests or commands.

Limited Functionality - Virtual assistants for Windows may not be able to perform all tasks, and users may still need to rely on other tools to complete some tasks.

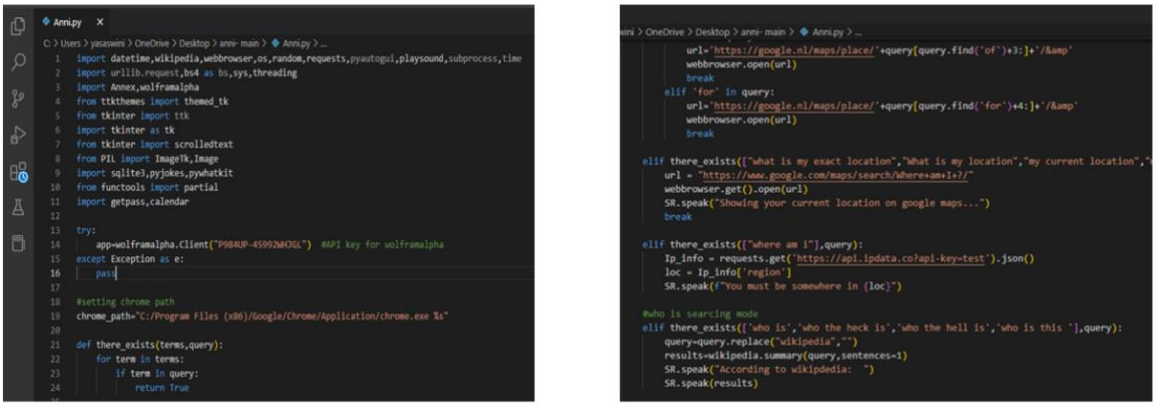

Figure 4: Source Code

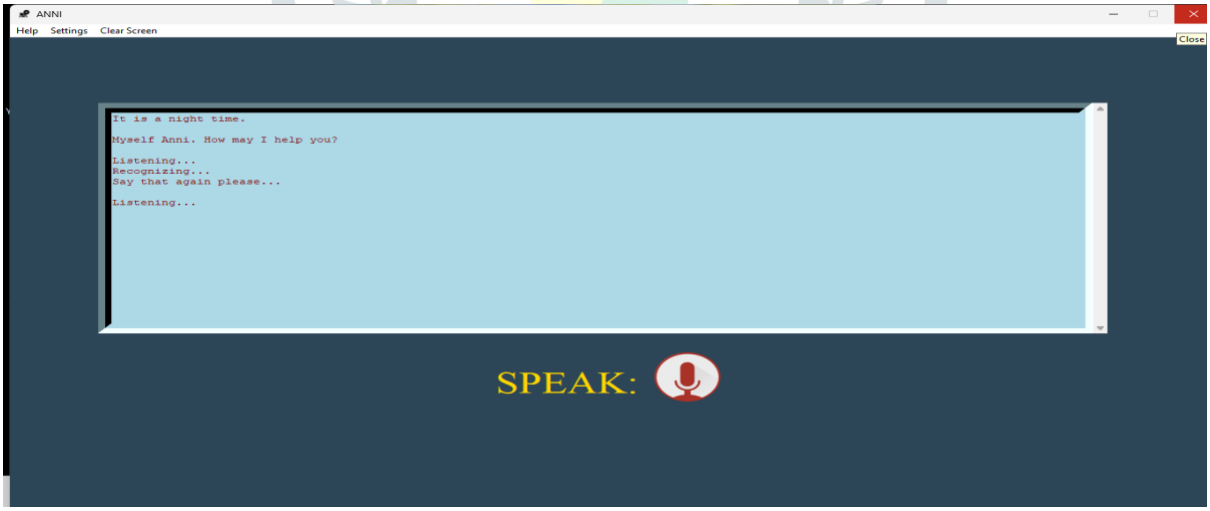

Figure 5: Output Screenshot

Future Scope:

The potential of Anni is vast. The technology can be used to improve the lives of individuals in various settings, including healthcare, education, and business. Anni can be used to help individuals manage chronic conditions, such as diabetes, by providing reminders and monitoring symptoms. The technology can also be used in the education sector to provide personalized learning experiences for students. In the business sector, Anni can be used to improve customer service and streamline operations.

Conclusion:

The creation of Anni, a personal assistant named after its creators Anju and Yasaswini, has demonstrated the power of utilizing Python, VS Code, and AI technologies. Through the use of natural language processing and machine learning algorithms, Anni has been able to perform a range of tasks, including scheduling appointments, providing weather updates, and answering general knowledge questions. The development of Anni has not only highlighted the potential for personalized virtual assistants but has also opened up possibilities for further research and development in the field of AI. As technology continues to advance, it is likely that we will see more advancements in this area, leading to an even greater integration of AI in our everyday lives.

Bibliography:

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References:

1. www.google.co.in
2. Python Programming - Kiran Gurbani
3. Learning Python - Mark Lutz
4. CS Dojo
5. Edureka !
6. Designing Personal Assistant Software for Task Management using Semantic Web Technologies and Knowledge Databases, Purushotham Botla
7. Python code for Artificial Intelligence: Foundations of Computational Agents, David L. Poole and Alan K. Mackwort
8. Virtual Health Assistance - https://github.com/ashu123git/Virtual-Health-Assistant

9. Virtual Studio - https://visualstudio.microsoft.com/services/intellicode/
10. Python - https://visualstudio.microsoft.com/vs/features/python/
11. https://www.analyticsvidhya.com/blog/2020/09/ai-virtual-assistant-using-python/
12. HTML - https://code.visualstudio.com/docs/languages/html