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NEWS APPLICATION USING ALAN AI

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ABSTRACT

Newspaper have been constant source of the news, information and data for us. There are many technological advancements which act as the medium of delivering the news and information through television, radio and many more technical ways. As time is passing innovation and transformation of the technologies are heading forward. One such technology is ALAN AI, there are also many advancements in field of Artificial Intelligence. Developers and researchers are also using these technologies in many fields. In this paper, we have presented a web-based service that is news application using ALAN AI with an interactive voice assistant which gives user a simplified version of application. This helps to the people who have very busy schedule and have difficulty in reading. The main advantage of this application is that it is voice based so it helps to interact with platform by voice commands. The user is able to get news from any topic of interest just by giving the voice commands. The application provides all features required to the user also it allows user to go through news in a very detailed manner by interacting with assistant. The voice assistant allows users not only to stay informed but also keeps updated. The users can access the news by category, terms, by popular news channels. The web application will reduce the amount of human physical work as well as mental efforts which are required by users and will give interesting way of getting news and information. This research paper is an attempt to make news reading more creative and interactive using the ALAN voice assistant.

Keywords - ALAN AI, Alan studio, React JS, News APIs.

1. INTRODUCTION

As we know, in earlier days methods such as newspapers, radios, televisions have been continuous ways of having news and information which stayed up for a longer period of time. In modern day, we are familiar with the use of different technologies such as smartphones, laptops and other types of computer system through internet. Recently, voice control has become one of the most leading skills. The generation are not getting enough time because of their busy day to day schedules to sit down and read newspapers, magazines, etc. to get them informed and updated of latest happenings all around the world.

To make life simple and easy, innovation is made more advanced and more technologies are embedded according to requirements. Voice control has become one of the most popular abilities. It is observed that with the advancements in technology, newer ways of news reading are replacing old ones, so voice control is the best way to it.
The user gains information about the occasions occurring across the globe. News perusing is the fastest and best method for social event information about state and worldwide news. Since news organizations cover all subjects of interest like Fashion, Lifestyle, Politics, Sports, Entertainment, the user continuously stay updated.

1.1 Branches of AI:

AI is the study of planning frameworks that display comparable attributes related with the insight found in human way of behaving. A huge part of software engineering manages framework acknowledgment like reasoning, understanding, figuring out language, and making moves to tackle issues.

Expert Systems: Expert Systems is an AI-based framework that learns an individual's thinking skill. It does not utilize ordinary programming to tackle complex issues rather it utilizes documentations to accomplish such point. It is additionally utilized in the financial area for credit and speculation investigation.

Robotics: This is an exceptionally a good part of Artificial Intelligence that spotlights on the plan and improvement of robots. Advanced mechanics manages the planning, building, and working of robots by integrating both science and designing methods. These include the control of PC frameworks, data change and assembling of cars. Robots likewise go about as man-made reasoning specialists that perform assignments in a certifiable climate determined to complete outcomes.

Machine Learning: Machine Learning (ML) is a salient part of Artificial Intelligence. Computers can learn and make moves all alone because of the degree of adequate information gave through Machine Learning. The calculation is set up so that machines can anticipate results considering previous events. Machine Learning strategies help in preparing a model with information introduced which will acclimate to future results. It is the study of permitting computers to learn and interpret information for task execution without programming.

Neural Networks: It is a part of Artificial Intelligence related with the utilization of Neurology to integrate mental science in aiding PC frameworks and machines to execute undertakings. It is also called as "Deep Learning". It assists machines with handling how the human mind works. Face recognition is an outcome of the execution of Neural Network. This significant part of AI is in addition to answerable for minimum helper applications, for example, "Alexa and Siri".

Fuzzy Logic: This part of AI is the strategy of changing and addressing questionable data by investigating how much the theory is valid. This assists with offering a specific degree of thinking adaptability when confronted with vulnerabilities. Fuzzy Logic is used in programmed gearboxes and medication for independent direction.

Natural Language Processing: There are people coming from different background and following different languages and dialects, so conversing with them is not always easy. It gets

difficult to communicate and grasp what the other person is trying to convey. Similarly, this applies to the frame work of the PC. Natural Language Processing is a branch of Artificial Intelligence which understands text and spoken words just like a human can understand, it takes input from the humans in the form of text or speech and makes it understandable for the computer with the help of Deep Learning. This became a challenge for the Natural Language Processing and its advancement in the field of Software Engineering. As this deals with the parallel digits and it is important for the coordination of people to understand. This cycle includes getting sound from humans, forming connections and changing it completely to the message design.

1.2 Recent Developments in AI:

New Invention, growth and advancement in the self-driving vehicles, this makes the vehicle safe to use and fuel-efficient at the very same time. It has scope in the future transportation, it is believed that cars will be connecting to each-other and the outside world with the help of augmented reality making the multi-media services available during the journey.

Recent development is AI in the region of Deep Learning specifically has efficient and cost-effective growth, also this has development in the medical and manufacturing department. And has increased ability to even understand and act on the requirements according to the surrounding.

The main recent advancement in AI is in the field of OpenAI, helps to achieve objectives in various fields. With the help of OpenAI we were able to learn how the tools are used, In Companies like Nvidia have shown as how there can be more advancement in the robots that can perform various tasks in real life by observing the human activities and behavior they are programmed.

One of the trending topics is the Cyber Security has a gradually increasing scope in the following topics: businesses, remote employees and online operation of the big brands, As the technology is evolving and the advancement in the AI has helped in prevention of the threats to the sensitive data and network and making the networks more secure.

AI has also evolved in the software of the mobiles and the tablets in a wide range for the user's every day. In one of the reports published by Gartner around 80% of smartphones will come equipped with built-in AI capabilities, in the year 2023. Nowadays the applications developed for the phones and tablets are equipped with the power of AI such as Google Assistant, Microsoft Pix, Alexa, Siri and Socratic. This tool or application is so user friendly that it also supports hands-free services, and the devices can also be controlled using voice commands.

2. LITERATURE SURVEY

R. Dole et al. (2019), explained the growth in the field of voice assistance, conversational ability, tools required, battle of the giants (Alexa and Google Assistant), privacy, universality of voice and synthesis of speech. He worked on the different areas that have contributed to the advancement in the growth of voice-based technologies.

A. Karthik, V. K. Raja, and S. Prabhakaran et al. (2018), worked on constructing a device which helps the visually impaired people for the programmed acknowledgement of the environmental messages using ORC sensor and Raspberry pi. They worked on the integration

of Text to Speech which converts the text available in the environment to audio/speech which makes them to understand and interact easily with the surroundings.

J. Gnanamanickam, Y. Natarajan, and K. R. Sri Preetha et al. (2021), worked on a special algorithm called as Hybrid Speech Enhancement Algorithm. This algorithm is used in voice assistant applications which mainly focuses on reducing the errors in the words. The algorithm proposed by them resulted in maximum accuracy of 90.5% with just 9.5% - word error rate for speech data and an accuracy of 92.4% with 7.6% - word error rate for audio data.

G. Terzoupoulos and M. Satratzemi et al. (2019), made a study on the importance of using the voice assistants and smart speakers in the field of education and everyday lives. They focused on one of the major challenges that the present voice-based technology is lacking i.e., the ability of an assistant to speak languages other than English. This research gave a huge support on the integration of voice assistants into education.

Ian W. Freed, William Folwell Barton, and Rohit Prasad et al. (2014), worked on prohibition of false wake words that are often identified whenever a voice assistant or voice-controlled device is working. The research is all about demonstrating the authentic working of voice-controlled device with in-depth word modules which classify actual word used for interaction preventing false wake words.

3. METHODOLOGY

3.1 Technologies Used:

1. Alan AI: Alan AI is an artificial intelligence conversational platform which allows designers and developers to make several assistants, similar to Google (Assistant), Amazon (Alexa), Apple (Siri), but constricted to a particular application. Alan makes web application more adaptive or accommodative with improved user interface and updates. With increasing technology in voice assistants, now-a-days people prefer in application assistants in their modern devices. Alan uses voice commands for interaction and it includes voice and speech recognition, Machine Learning (ML), Natural Language Processing (NLP), and Spoken Language Models (SLU) for interaction purposes.

2. News API: News API is a simple and handy REST API that parses multiple sources to extract relevant news data and articles published online. This API lets you search, track, and provides news data in JSON format in any preferred language available over the web. A News API is a platform that works as a bridge between various news sources and applications. It permits businesses to interact and exchange data or information with the outside world more securely and efficiently.

3. React JS: ReactJS is a very famous front-end libraries having a really strong base with a huge community. To build a good app with all features we can use NextJS like libraries with React to make it a full-stack React framework. React is an open-source JavaScript framework and library which is made by Facebook. It helps to create interactive and user-friendly web application more efficient with comparatively less coding. React application are made and usually paired up with HTML coding, based on UI basically, it is a library rather than a language widely it is used in web development. First library was published in 2013.

4. JavaScript: JavaScript is a programming or a scripting language that allows us to apply and create dynamically updating content multimedia, images or images which are animated, etc. It also with the help of its Object-Oriented Programming with object prototypes and classes helps to build the project with much depth and more becomes more operable. The HTML and CSS are coded to make it enhance more with the help of JavaScript; it has built-in objects and methods. Syntax based on Java and C languages. Named after Java, Difference between Java is a compiled language and JavaScript is an interpreted language. Basically, JavaScript adds efficient interactive functions to the website; it also supports Object-Oriented Programming considered a lightweight language with fewer complications, easy to use.

5. Material UI: Material UI is an open-source AI, it provides us with different variety of tools which helps to boost our project specially focussing on the framework for building the web applications which are modern and trending. Material UI is more important in providing the designed components and styles also flexible, it allows users to create their unique designs and a app according to their need. Material UI is one of the frameworks of the React UI framework, to get started with it we have to install the packages, install the fonts as well, importing libraries, etc.

3.2 Integration of Alan AI:

We can integrate Alan AI with the application having:

1) iOS: Swift and Objective-C,
2) Android: Kotlin and Java,
3) Web frameworks: React, Angular, Vue, Ember,
4) Cross-platform framework: Flutter, Ionic, React Native, Apache Cordova.

When you integrate Alan AI in any particular application the voice in-application assistant gets switched on and the button is displayed through which the interaction can be done by the user. The Alan AI button is displayed on the screen and it is ready to use.

The Alan AI voice commands work according to the script of the Alan Studio Project of your account. To make it work with React we integrate React app with Alan AI, installing packages, importing the packages, adding Alan button to the component, then there are different parameters for the Alan button such as:

1) key- Alan AI SDK key in the project,
2)authData- The authentication or configuration data to be sent to the dialog script, etc.

Also, for changing position of Alan button we have commands such as: left, right, top, bottom, zIndex.

For using client API methods we have commands such as: setVisualState(), callProjectApi(), playText(), etc.

There are also the functions for using the handlers in the React App such as: onCommand handler, onButtonState handler, etc.

3.3 Working:

We basically use Alan AI and utilize to bring the user the best news according to the category. We use React JS for the app's front-end, JavaScript for the Background work and Visual Studio as the editor for our application. Adding all these magnitudes, we have created this advanced News Application project.

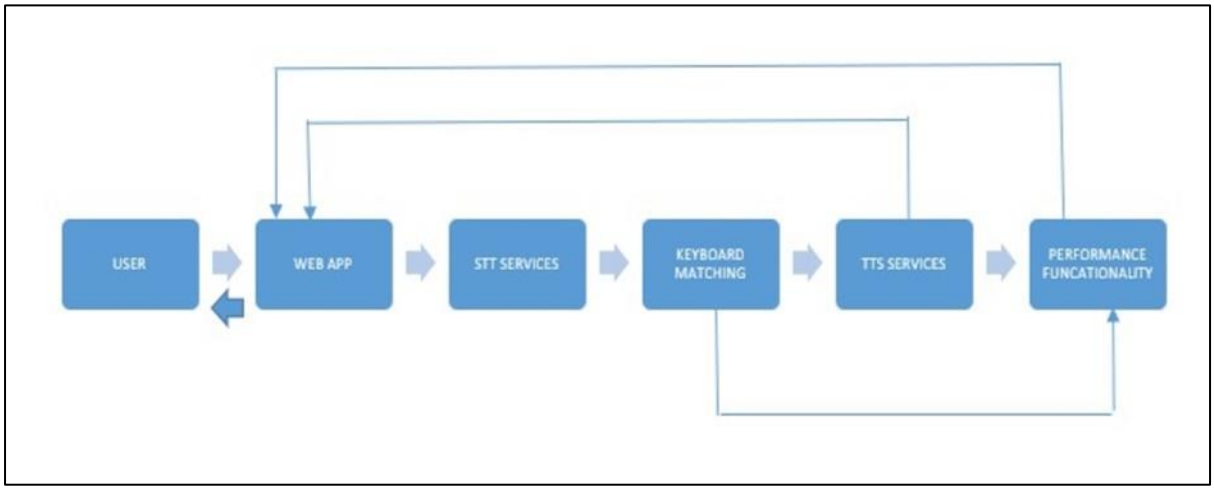

Fig. 3.3.1 Working of the Application

- In Alan AI it converts the content into speech and then again back to text to gather the information from different applications.
- User gives commands as input to the web application, and then the application passes on the signal to the speech then to text services.
- The speech sends to the text service again, then coverts it into the voice signal and then back to the text, then the text is checked and verified.
- If the send text key matches, then the keyword which is related to this performs, if not then the keyword related does not perform and sends error message back to where it came from.
- Then the error message is sent back to the web application in the form of text, and then it passes to the user.
- After the task is completed, the results are shared to the web application, then it provides the user with a reply with the help of the voice assistants.

4. RESULTS

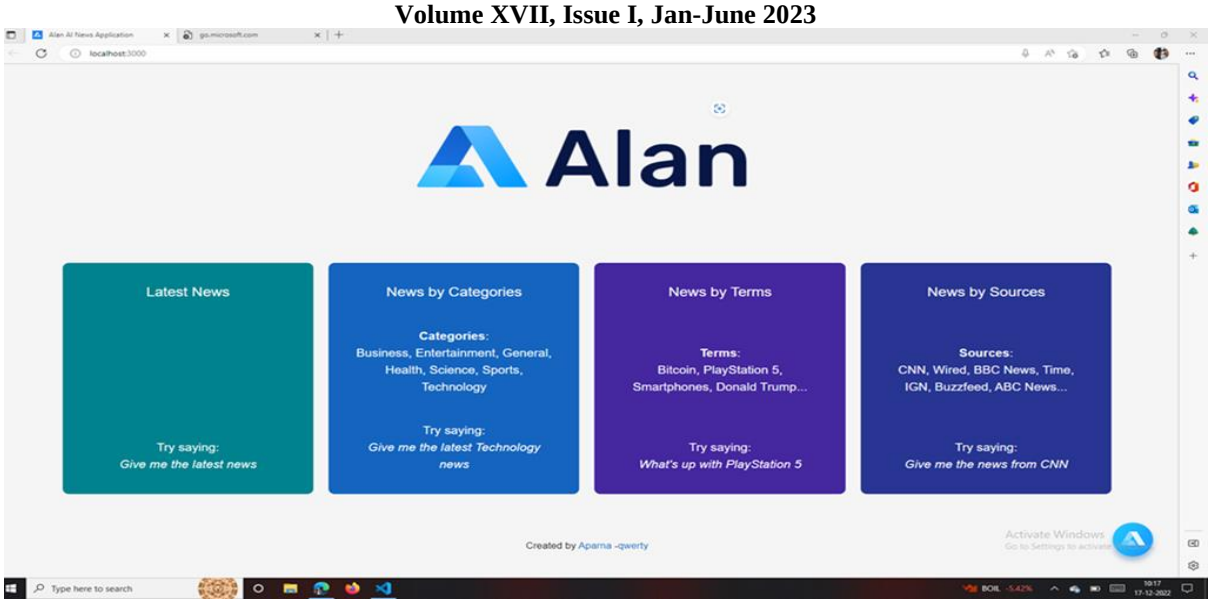

Fig. 4.1 Home Page of the Application

The integration of Alan AI to the news application makes the application more advanced, reliable and adaptable. This application uses voice commands for interaction to the users by using Spoken Language Models (SLU) and training speech recognition software of Alan AI. Dialog scripts in the Alan Studio are for enhancing conversational experiences and they are written in JavaScript, which makes them highly customizable and accessible.

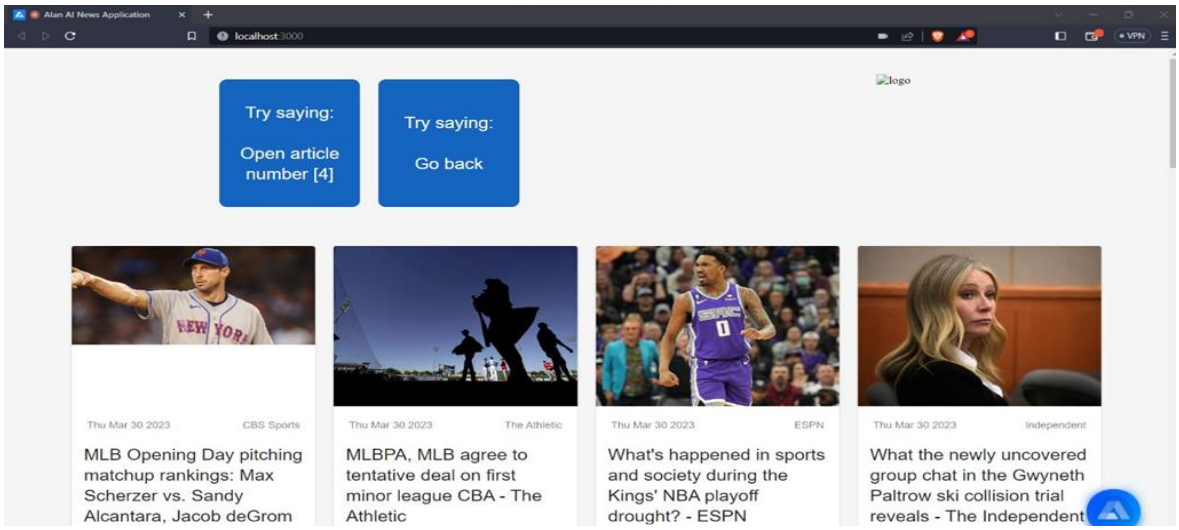

Fig. 4.2 List of Articles obtained on a Voice Command

Alan has advanced algorithms to handle voice and text commands and dialog flows of any complexity. Users are not required to perform any speech training. Alan itself trains on intents using the terminology for user's application. When Alan reads a news headline, it highlights that flashcard for clarity with the help of artificial intelligence. Users can ask the Alan to read the summary which is given below the headlines. This application have news by categories, news by sources, latest news and news by terms. User can opt for any news and give commands accordingly.

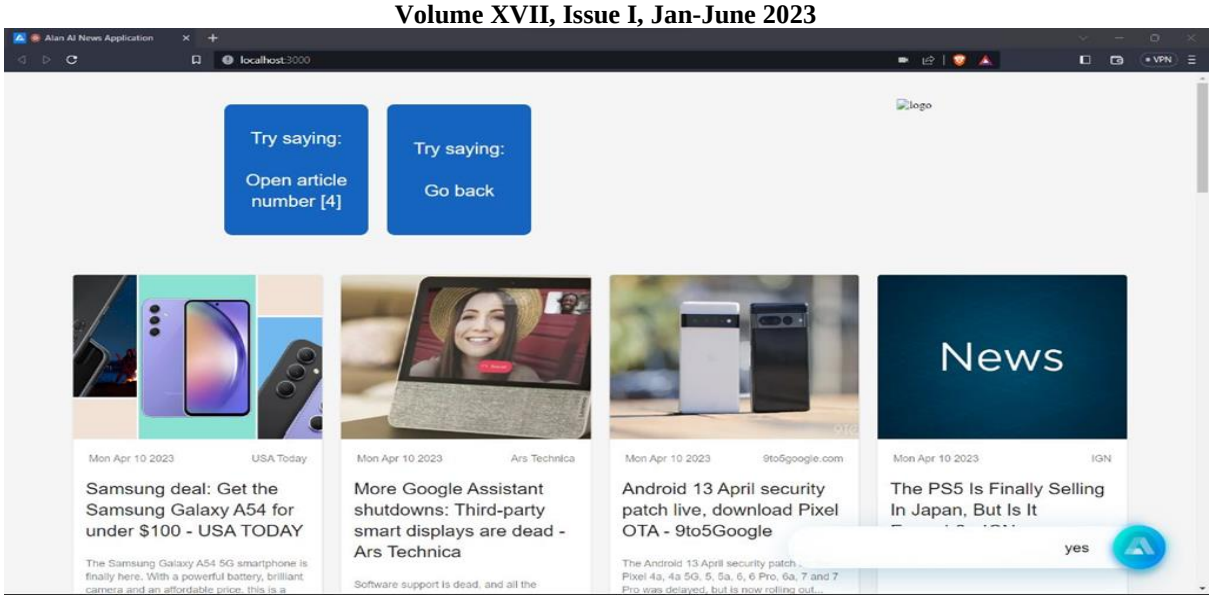

Fig. 4.3 News by Terms (Smartphones)

This proposed system is highly well grounded, flexible and enriches user experience without any physical work which saves user's precious time in this busy and bustling life . This voice recognition application is greatly preferred over traditional newspaper and magazines reading methods. This system also helps visually challenged users by providing smart interaction functionality.

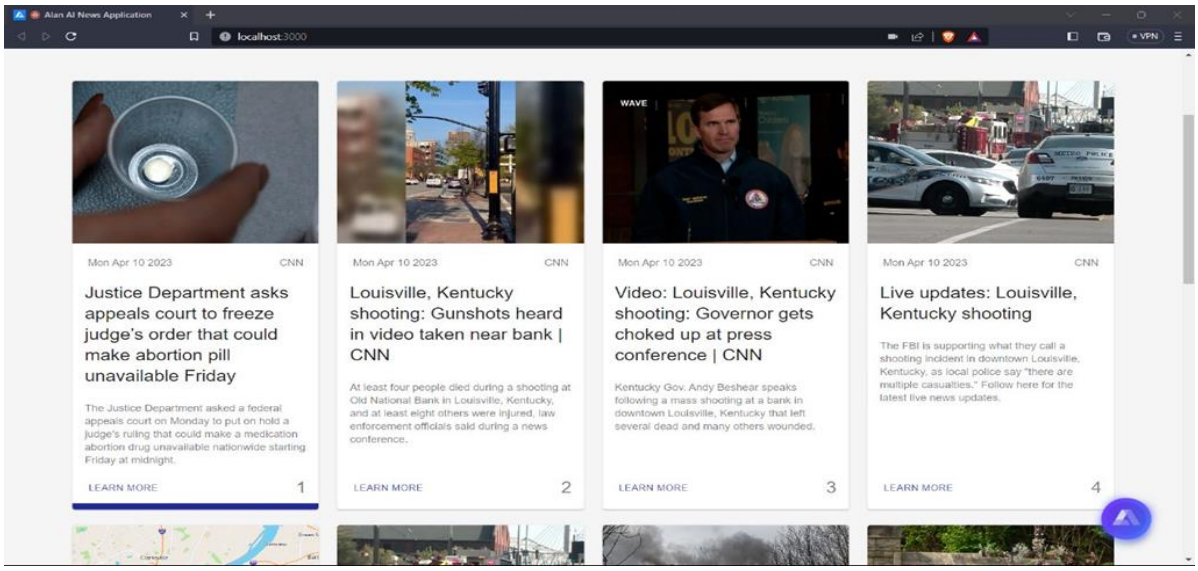

Fig. 4.4 News by Sources (CNN)

In this highly interactive news application, one can access news by terms, classification, or by sources given in the flashcard. This project helps the client with information and remain updated with the occassions and events occuring round the globe.The Alan Voice Assistant is activated by touching or tapping the mic symbol which is placed in the bottom right corner of the smart news application. The mic gets inactive after 30 seconds of pause or inactivity. After the request is made to the smart and interactive news apllication, the News API brings up the news according to the voice commands giver by the users or clients.

5. CONCLUSION

Alan AI is a conversational AI platform which enables human-like conversations in any application. It seamlessly integrates into any application's user interface. The Alan allow users to add Multimodal user experience. Its does all the heavy lifting by involving Spoken Language Models (SLU), training speech recognition software, deploying, and hosting conversational components. Dialogue script is written in javascript which makes it more customizable and adaptable.

In this busy era, interactive and conversational news application are preferred over traditional news reading methods. Getting time to sit and read newspapers and magazines has become improbable in bustling and occupied life of the users.This interactive and flexible technology saves time and spare the users from physical work. This proposed system update the user with latest events and happenings in the world with just voice commands. The system also extends its accessibility to the visually impaired people and help them to get updated with the latest news. Nowadays, people prefer voice controlled devices and systems which provide easy access and hands free experience to the users. With more advancement in Alan AI in the future, the news application can provide more interesting features and functionalities to the web application.

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