PROJECT REPORT

ON

CUSTOMIZABLE CHATBOT USING ARTIFICIAL INTELLIGENCE

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

MASTER OF COMPUTER APPLICATIONS

of the

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Submitted by

RESHMA K RAMESH (NCE22MCA-2039)

Under the guidance of

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NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE(AUTONOMOUS),PAMBADY

(NAAC Re-Accredited with "A" grade) PAMPADY, THIRUVILWAMALA, THRISSUR - 680567 APRIL 2024)

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NEHRU COLLEGE OF ENGINEERING AND RESEARCH CENTRE (AUTONOMOUS),PAMBADY

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CERTIFICATE

This is to certify that, the project work entitled "**CUSTOMIZABLE CHATBOT USING ARTIFICIAL INTELLIGENCE"** has been presented by **RESHMA K RAMESH (NCE22MCA-2039)** of Fourth Semester MCA in Partial Fulfilment of the requirement for the award degree **MASTER OF COMPUTER APPLICATIONS, APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY.**

We also certify that the work done is original.

Project Guide **Head of the Department**

Principal **External Examiner**

DECLARATION

I hereby declare that the project Report entitled **"CUSTOMIZABLE CHATBOT USING ARTIFICIAL INTELLIGENCE"** Submitted to the **Department of MCA at Nehru College of Engineering and Research Centre(autonomous),Pambady** in partial fulfilment of the requirement for the award of degree in **MASTER OF COMPUTER APPLICATIONS** from **APJ ABDUL KALAM TECHNLOGICAL UNIVERSITY,** is a record of original work done by me under the guidance of **Ms. DIVYA P** Assistant Professor of the Department of MCA, during my fourth Semester MCA course period 2022-2024.

PAMPADY **RESHMA K RAMESH**

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ABSTRACT

This project introduces a novel approach to chatbot development, leveraging prompts to create multiple customizable chatbots tailored to specific needs. The system comprises a streamlined architecture focused on flexibility and efficiency, enabling users to generate diverse chatbots with minimal effort. At the core of the system is a prompt-based interface that allows users to input specifications for their desired chatbot, including conversational style, tone, and domain- specific knowledge. The platform harnesses advanced natural language processing techniques to interpret these prompts and generate customized chatbots accordingly. Users can define distinct personas and conversation flows by simply modifying prompts, eliminating the need for extensive coding or development expertise. The resulting chatbots exhibit responsiveness and adaptability, capable of engaging users effectively across various contexts and domains. By democratizing the chatbot creation process through prompt-based generation, this project empowers users to develop tailored conversational agents that meet their specific requirements. The system's intuitive interface and robust AI capabilities promise to revolutionize chatbot development, fostering innovation and customization in the realm of conversational AI.

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Chapter 1

Introduction

In the rapidly evolving landscape of artificial intelligence (AI) and conversational interfaces, the development of customizable chatbots has emerged as a pivotal area of exploration. Traditional approachesto chatbot creation often require intricate coding and extensive development cycles, limiting accessibility and customization options for users. However, a groundbreaking paradigm shift is underway with the introduction of prompt-based chatbot generation.This project sets out to revolutionize chatbot development by harnessing the power of prompts to create multiple, highly customizable chatbots tailored to specific needs. Unlike conventional methods that necessitate complex programming, our approach simplifies the process, empowering users to design and deploy bespoke chatbots with ease.The project's foundation lies inthe recognition of prompts as potent tools for shaping conversational AI. By providing structured inputs, users can articulate their requirements, preferences, and objectives, guiding the chatbot generation process. This innovative methodology not only democratizes chatbot development but also opens new avenues for creativity and experimentation.Through a combination of advanced natural language processing (NLP) algorithms and intelligent prompt interpretation, our platform transforms user inputs into fully functional chatbots equipped with diverse conversational styles and domain-specific knowledge. From casual chat companions to specialized customer service agents, the possibilities are limitless.

Background

With the rapid advancement of artificial intelligence (AI) and natural language processing (NLP) technologies, chatbots have become integral tools for enhancing communication and streamlining processes. Traditional chatbot development methods often involve complex programming and extensive training data, limiting accessibility and customization options. Prompt-based chatbot generation offers a promising solution by simplifying the development process and democratizing access to conversational AI. This approach leverages structured prompts to guide chatbot creation, eliminating the need for specialized expertise and reducing development time.

Motivation

The motive behind this project stems from a desire to democratize chatbot development and empower users to create tailored conversational AI solutions effortlessly. Traditional methods of chatbot creation often require specialized expertise, extensive coding, and significant time

investment, limiting accessibility and innovation in the field. By introducing prompt-based chatbot generation, we aim to remove barriers to entry and provide a user-friendly approach to AI-driven communication. This project seeks to empower individuals and organizations of all backgrounds to harness the power of conversational AI, regardless of their technical proficiency.Furthermore, prompt-based chatbot generation offers unparalleled flexibility and customization options, allowing users to define the personality, tone, and functionality of their chatbots with ease. This level of customization enables chatbots to better align with user preferences, organizational objectives, and specific use cases, enhancing user engagement and satisfaction.

Objective

The objectives of this project are:

1. Enhanced Security: Implement a secure land registry system using blockchain technology to protect sensitive personal data and prevent unauthorized access or tampering.
2. Transparency and Accountability: Foster transparency and accountability in land transactions by recording them on a decentralized and immutable ledger accessible to all stakeholders
3. Streamlined Processes: Streamline the land registration process by automating paperwork and documentation, reducing delays and inefficiencies for individuals seeking to buy land.
4. Mitigate Fraud and Corruption: Mitigate the risks of fraud and corruption inherent in traditional landregistration processes by implementing robust security measures and eliminating intermediaries.
5. Promote Trust and Confidence: Promote trust and confidence in the integrity of the land registration system among both citizens and governments through the implementation of a transparent and tamper-proof blockchain-based registry.
6. Ensure Accessibility: Ensure accessibility of land ownership records to all relevant parties, including individuals, government agencies, and other stakeholders, to facilitate informed decision-making anddispute resolution.
7. Cost Reduction: Reduce the costs associated with land registration by eliminating the need for extensive paperwork, manual verification processes, and intermediaries, thereby making land ownership more accessible to a wider population.
8. Scalability and Interoperability: Ensure scalability and interoperability of the blockchain-based land registry system to accommodate future growth and integration with existing land management systems and databases.
9. Compliance and Legal Framework: Ensure compliance with legal and regulatory frameworks governing land registration while leveraging blockchain technology to enhance efficiency and

security.

10. User Education and Adoption: Educate users, including individuals, government officials, and other stakeholders, about the benefits and functionalities of the blockchain-based land registry system to facilitate its widespread adoption and usage.

Contribution

We explain our step-by-step solution of how we achieved results for customizable chatbot. We introduce the AI models that considered and explain how we train our data using these models. Later, analyses and evaluate the performance of these models using certain metrics like accuracy, precision and recall

Report Organization

The project report is divided into six sections. Section 2 describes literature survey. Section 3 describes the methodology and Section 4 describes agile methodology used for implementing the project. Section 5 gives the results and discussions. Finally, section gives the conclusion.

Chapter 2

Literature Survey

Title : "BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding"
Authors: Jacob Devlin, Ming-Wei Chang, Kenton Lee, Kristina Toutanova
Summary: This paper introduces BERT (Bidirectional Encoder Representations from Transformers), a pre- trained language representation model based on Transformer architecture. BERT learns contextualized word embeddings by jointly conditioning on both left and right context in all layers, significantly improving performance on various NLP tasks.

Title : "GPT-3: Language Models are Few-Shot Learners"
Authors: Tom B. Brown, Benjamin Mann, Nick Ryder, Melanie Subbiah, Jared Kaplan, et al.
Summary: GPT-3 is a large-scale autoregressive language model capable of generating coherent and
contextually relevant text. It demonstrates remarkable few-shot learning capabilities, allowing it to perform various tasks with minimal task-specific training data, making it a versatile tool for natural language processing.

Title : "Attention is All You Need"

Authors: Ashish Vaswani, Noam Shazeer, Niki Parmar, Jakob Uszkoreit, Llion Jones, et al.

Summary: This paper introduces the Transformer architecture, which utilizes self-attention mechanisms to capture long-range dependencies in sequences. Transformers have become a fundamental building block in many state-of-the-art NLP models due to their parallelizability, scalability, and effectiveness in capturing contextual information.

Chapter 3

Methodology

Introduction

The introduction of prompt-based chatbot generation represents a paradigm shift in AI-driven communication. This innovative approach simplifies chatbot development by empowering users to create customized conversational agents through structured prompts. Unlike traditional methods requiring extensive coding, prompt-based generation democratizes access to AI technology, enabling individuals and organizations to craft personalized chatbots effortlessly. Leveraging advancements in natural language processing and machine learning, this project aims to explore the potential of prompt-based chatbot generation and its implications for enhancing user experiences and driving innovation in human-computer interaction.

Data Collection:

- Gather relevant datasets or corpora containing examples of user queries and appropriate responses. This data could be sourced from various sources such as customer service transcripts, online forums,or existing chatbot interactions.

Data Cleaning:

- Preprocess the collected data to remove noise, inconsistencies, or irrelevant information. This may involve tasks such as removing special characters, correcting spelling errors, and standardizing text formatting.

Tokenization:

- Tokenize the cleaned data into individual words or subwords to create a structured representation suitable for processing by the AI model. This step involves breaking down the text into meaningful units to facilitate further analysis.

Embedding:

- Convert the tokenized text into numerical vectors using techniques like word embedding. Word

embedding methods such as Word2Vec or GloVe map words to dense vector representations, capturing semantic similarities and relationships between words.

Model Training:

- Train the AI model, such as a transformer-based architecture like BERT or GPT, on the preprocesseddata to learn the patterns and relationships between user queries and responses. This involves optimizing model parameters through iterations to minimize prediction errors.

Fine-tuning:

- Fine-tune the pre-trained AI model on domain-specific or task-specific data to adapt it to the specificrequirements of the chatbot application. This step enhances the model's performance and ensures thatit can generate contextually appropriate responses relevant to the user's queries.

Deployment:

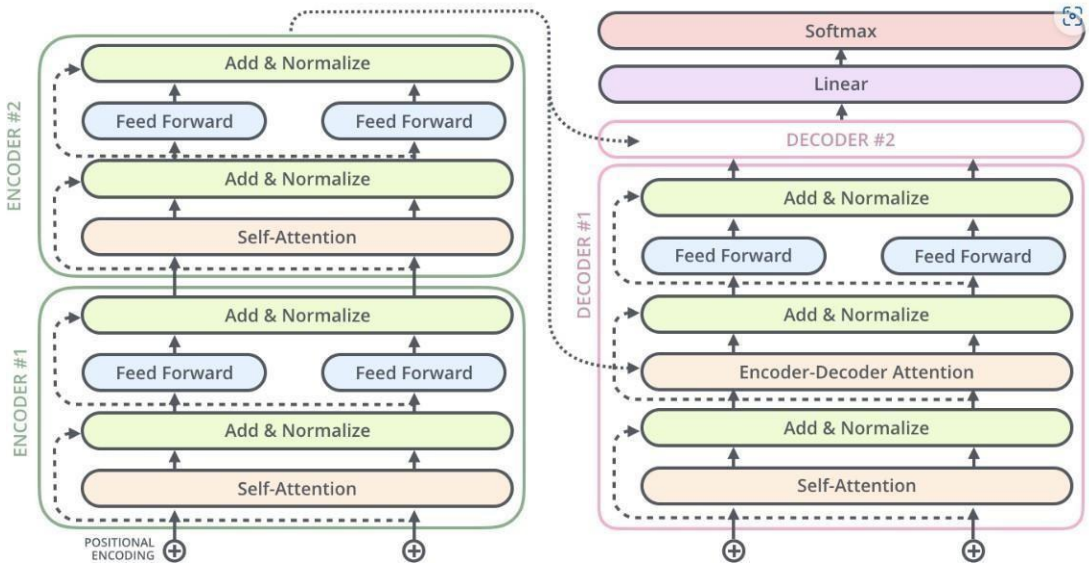
- Deploy the trained and fine-tuned AI model within the chatbot system, enabling it to process user queries in real-time and generate responses. This involves integrating the model into the chatbot architecture and setting up the necessary infrastructure for inference.

Evaluation:

- Evaluate the performance of the AI model using metrics such as accuracy, fluency, and coherence.This step helps assess the effectiveness of the chatbot in understanding user queries and providing

satisfactory responses, guiding further improvements and optimizations.

Transformers Algorithm



The architecture of transformers, particularly exemplified in models like BERT (Bidirectional Encoder Representations from Transformers) and GPT (Generative Pre-trained Transformers), is characterized by its innovative design for capturing contextual relationships in text data. Here's an overview of the architecture:

1. Transformer Blocks:

- The fundamental building blocks of transformer models are transformer blocks. Each transformer block consists of multiple layers, typically containing self-attention mechanisms and feed-forward neural networks.
- Self-attention mechanisms allow the model to weigh the importance of different words in a sentence when processing each word. This enables the model to capture long-range dependencies andcontextual relationships effectively.
- Feed-forward neural networks process the information from the self-attention layer, applying non-linear transformations to the input data.

2. Self-Attention Mechanisms:

- Self-attention mechanisms compute the attention weights for each word in a sequence with respectto every other word in the sequence.

- This allows the model to attend to relevant words and their contextual information, capturing syntactic and semantic relationships within the text.
- Self-attention mechanisms operate in parallel across all words in the sequence, making transformer models highly scalable and efficient compared to traditional sequential models like RNNs.

3. Positional Encoding:

- Since transformer models do not inherently possess sequential order information, positionalencoding is added to the input embeddings to convey the position of each word in the sequence.
- Positional encoding ensures that the model can differentiate between words based on their positionin the sequence, facilitating the learning of sequential dependencies.

4. Transformer Encoder and Decoder:

- Transformer models consist of two main components: the encoder and the decoder.
- The encoder processes the input sequence, generating contextualized representations for eachword.
- The decoder then uses these representations to generate output sequences, such as in sequence-to-sequence tasks like language translation.

5. Multi-Head Attention:

- Multi-head attention mechanisms allow the model to attend to different parts of the input sequencesimultaneously, enhancing its ability to capture diverse contextual information.
- In multi-head attention, the input is transformed into multiple query, key, and value representations, each attending to different parts of the input sequence independently.

Hardware and Software Requirements

Hardware Requirements

- MediaTek or above processor
- Ram :2 GB
- Internal space :2 GB
- Internet Connection

Software Requirements

- OS: Android 10 or above
- Database System:My SQL
- Documentation Tool : MS - Word
- Language: Python 3.10, FLutter,Django
- Visual Studio Code

Technologies Used

Python

Python is a high-level, interpreted programming language that emphasizes code readability and simplicity. It was created in the late 1980s by Guido van Rossum and has since become one of the most popular programming languages in the world. Python's syntax is designed to be easy to read and write, making it a popular choice for beginners and experienced programmers alike. It has a large and active community that contributes to a vast ecosystem of libraries and frameworks, making it versatile and suitable for a wide range of applications such as web development, data analysis, machine learning, and scientific computing.

Readability: Python's syntax is designed to be easy to read and understand, which makes it easier for developers to write code quickly and accurately.

Simplicity: Python's syntax is straightforward and easy to learn, making it an ideal language for beginners.

Interpreted: Python is an interpreted language, which means that code is executed line by line, rather thanbeing compiled into machine code before execution.

Dynamic typing: Python is dynamically typed, which means that variable types are determined at runtimerather than being declared explicitly.

Strong typing: Despite being dynamically typed, Python has strong typing, which means that types areenforced during runtime, making it less prone to errors.

Large standard library: Python has a vast standard library that includes modules for a wide range of taskssuch as web development, scientific computing, and data analysis.

Object-oriented: Python supports object-oriented programming, making it easier to create reusable and modular code.

Cross-platform: Python runs on a wide range of platforms, including Windows, Mac, and Linux.

Extensible: Python can be extended with modules and packages, making it possible to add new functionalityand features to the language.

Open-source: Python is open-source, which means that its source code is freely available to the public, making it accessible to anyone who wants to use or modify it.

Django

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. It is maintained by the Django Software Foundation (DSF), an independent, non- profit organization established in the US. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support. Django was developed in a fast-paced newsroom environment, it was designed to make common web development tasks fast and easy. Django's primary goal is to ease the creation of complex, database- driven websites. The framework emphasizes reusability and "pluggability" of components, less code, low coupling and rapid development. Python is used throughout, even for settings, files, and data models. Django also provides an optional administrative create, read, update and delete interface that is generated dynamically through introspection and configured via admin models. Django's configuration system allows third party code to be plugged into a regular project, providedthat it follows the reusable app conventions. More than 2500 packages are available to extend the framework's original behavior, providing solutions to issues the original tool didn't tackle: registration, search, API provision and consumption, CMS, etc. Django officially supports five database backends: PostgreSQL, MySQL, MariaDB, SQLite, and Oracle. Microsoft SQL Server can be used with django-mssql on Microsoft operating systems, while similarly external backends exist for IBM Db2, SQL Anywhere and Firebird.

Visual Studio Code

Visual Studio Code, often abbreviated as VS Code, is a versatile and intuitive source code editor developed by Microsoft. It boasts a sleek and customizable interface, catering to a wide array of programming languages and frameworks. Its robust features include syntax highlighting, code completion, and debugging tools, empowering developers to write and debug code efficiently. With a vast library of extensions created by the community, VS Code adapts to diverse development workflows seamlessly. Its cross-platform compatibility and frequent updates make it a popular choice among developers worldwide, streamlining the development process and enhancing productivity.

MySQL

MySQL is a popular open-source relational database management system (RDBMS) that is widely used for web applications and other data-driven applications. It is written in C and C++, and provides a robust and scalable database engine that can handle large amounts of data and high traffic volumes. MySQL supports a wide range of features, including support for multiple storage engines, such as InnoDB, MyISAM, and Memory, transactions, triggers, views, and more. It also supports a variety of programming languages, including PHP, Python, Java, and more, and can be easily integrated with web applications through its native drivers and connectors. MySQL is free and open-source software and is widely used by many popular websites, including Facebook, Twitter, and Wikipedia.

Module Description

The system comprises of 5 major modules and their sub modules as follows:

ADMIN:

The Admin module empowers administrators with the capability to manage and customize chatbot functionalities. Administrators can define conversation flows, set responses, and configure settings to align with organizational objectives and user requirements. This module provides administrative controls for monitoring chatbot performance, handling user feedback, and making adjustments to optimize user engagement.Admin will also be able to upload latest news.

USER:

The User module serves as the interface through which individuals interact with the chatbot. Users can initiate conversations, ask questions, and receive responses tailored to their queries. This module provides a seamless and intuitive user experience, allowing users to engage with the chatbot in a natural and conversational manner.Users can create their own customized chatbots and will be able toview news related to news advancements in the field of artificial intelligence.

AI MODULE:

At the core of the system lies the AI module, which harnesses the power of state-of-the-art AI algorithms, including transformer-based models, to facilitate natural language understanding and generation. By employing transformer architectures, such as BERT (Bidirectional Encoder Representations from Transformers) or GPT (Generative Pre-trained Transformer), this module achieves exceptional performance in comprehending user queries and generating contextually appropriate responses. Transformers excel at capturing long-range dependencies in sequences, enabling the chatbot to grasp the nuances of human language and respond with accuracy and fluency. Moreover, the AI module continuously learns from user interactions, adapting its understanding and improving performance over time through reinforcement learning and self-attention mechanisms. This iterative learning process ensures that the chatbot remains responsive, adaptable, and capable of delivering high-quality conversational experiences to users.

FEEDBACK MODULE:

The Feedback module enables users to provide valuable insights, enhancing the chatbot's performance and user experience through iterative refinement. Users can submit feedback on the chatbot's responses, usability, and overall satisfaction, facilitating continuous improvement. Administrators can review and analyze feedback data to identify areas for enhancement and implement necessary adjustments to optimize chatbot performance.

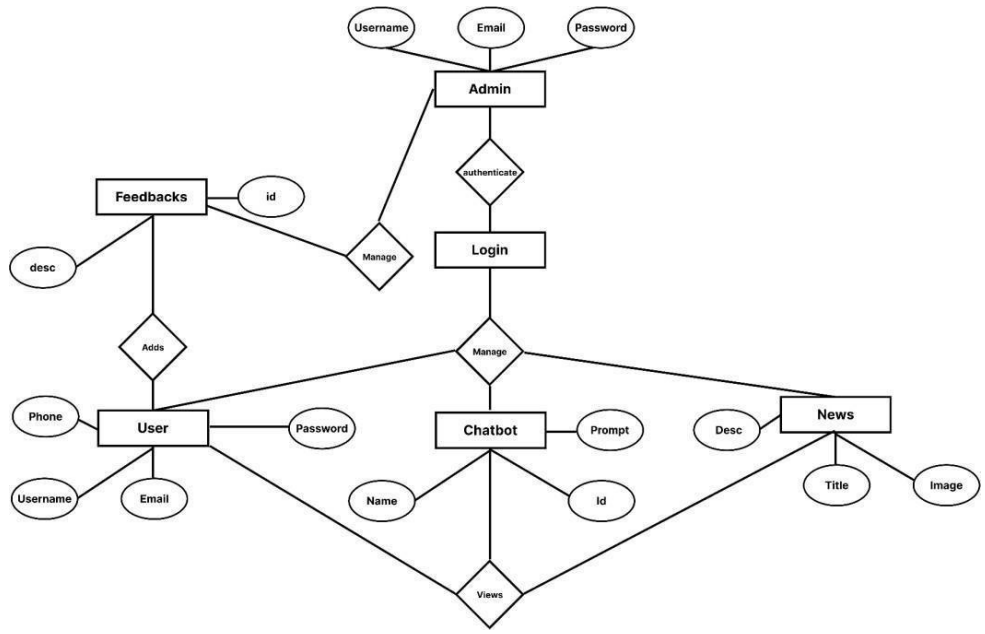
NEWS MODULE:

In the News Module, administrators have the capability to upload news articles directly into the system without relying on external APIs. This functionality allows administrators to curate and manage the content displayed to users, ensuring relevance and accuracy in the information presented. Administrators can uploadnews articles in various formats, such as text or multimedia, and assign relevant categories or tags to facilitate user navigation and search.

Work Flow

The workflow for the proposed secure land registry system begins with users accessing the blockchain- based platform through a secure interface. Users input their criteria, such as location and budget, initiating a search process within the system. The platform employs smart contracts to automatically verify land ownership and authenticity, eliminating the need for extensive manual research. Once a suitable plot is identified, users proceed to initiate the purchase process, which triggers a series of automated transactions recorded on the blockchain. Personal data required for paperwork, such as identification documents and financial records, are securely encrypted and stored on the blockchain, ensuring confidentiality and integrity. The system utilizes the Proof of Work (PoW) algorithm and SHA256 hashing for consensus and data integrity, preventing unauthorized modifications to the information. Throughout the process, users benefit from transparency and immutability, reducing the risk of fraudulent activities commonly associated with traditional land registration process.

ER Diagram



Chapter 4

Agile Methodology

Introduction

Agile methodology is a set of values, principles, and practices for software development that emphasizes flexibility, collaboration, and continuous improvement. It was developed in response to the limitations of traditional software development methodologies, which often resulted in delayed delivery, budget overruns, and unsatisfied customers. Agile methodology is based on the Agile Manifesto, which values individuals and interactions, working software, customer collaboration, and responding to change over processes and tools, comprehensive documentation, contract negotiation, and following a plan. Scrum isa process framework that has been used to manage complex product development. It is not a process or technique for building products rather it is a framework within which various processes can be employed.Agile methodology emphasizes short iterations or sprints, typically lasting two to four weeks, during which a small portion of the software system is developed, tested, and delivered. The team meets regularly to discuss progress, identify issues, and plan the next iteration. It also emphasizes close collaboration between the development team and the customer or product owner. The customer or product owner provides feedback on each iteration, allowing the development team to quickly respond to changing requirements or priorities.

Key practices in agile methodology include:

- **Continuous integration:** The practice of integrating new code changes into the main codebase assoon as they are ready.
- **Test-driven development:** The practice of writing tests before writing code, ensuring that the codemeets the specified requirements.
- **Pair programming:** The practice of having two programmers work together on the same codebase,allowing for better collaboration, knowledge sharing, and error detection.
- **Agile planning:** The practice of planning the project in short iterations, with the focus on deliveringworking software that meets the customer's needs.
- **Retrospectives:** The practice of holding regular team meetings to reflect on what worked well andwhat needs to be improved.

Major roles in scrum methodology includes:

- **Product Owner:** The Product Owner is responsible for maximizing the value of the product by managing the Product Backlog, which is a prioritized list of features or requirements. The Product Owner ensures that the Product Backlog is up-to-date, well-defined, and represents the customer's needs.
- **Scrum Master:** The Scrum Master is responsible for ensuring that the Scrum process is understood, implemented, and followed by the Scrum team. They facilitate the Scrum ceremonies such as Sprint

Planning, Daily Scrum, Sprint Review, and Sprint Retrospective, and remove any impediments that are hindering the team's progress. The Scrum Master also acts as a coach and mentor to the team, helping them to continuously improve their processes and practices.

- **Development Team:** The Development Team is responsible for delivering the product increment at the end of each Sprint.

Major Artifacts in scrum methodology includes:

- **Product Backlog:** The Product Backlog is a prioritized list of user stories or product requirements. The Product Owner is responsible for maintaining the Product Backlog and ensuring that it reflects the customer's priorities.
- **Sprint Backlog:** The Sprint Backlog is a list of the tasks that the Development Team plans to complete during the current Sprint. The Sprint Backlog is created during the Sprint Planning meetingand is updated throughout the Sprint as progress is made. The Development Team is responsible for managing the Sprint Backlog and ensuring that the Sprint goal is met.
- **Product Increment:** The Increment is the sum of all the completed Product Backlog items at the end of each Sprint. The Increment is a working version of the product that is potentially releasable and adds value to the customer.

Major Events in scrum methodology includes:

- **Sprint:** A Sprint is a time-boxed iteration of the software development process. Typically, a Sprint lasts 2-4 weeks, and at the end of each Sprint, the team delivers a potentially shippable product increment.
- **Sprint Planning:** At the beginning of each Sprint, the Scrum Team holds a Sprint Planning meeting to determine the Sprint Goal and select the Product Backlog items that will be worked on during the Sprint.
- **Daily Scrum:** The Daily Scrum is a 15-minute meeting that is held every day during the Sprint.
- **Sprint Review:** At the end of each Sprint, the Scrum Team holds a Sprint Review meeting to demonstrate the completed work to stakeholders and receive feedback. The Sprint Review provides an opportunity for the Scrum Team to reflect on their progress and identify areas for improvement.
- **Sprint Retrospective:** The Sprint Retrospective is a meeting that is held at the end of each Sprint to

reflect on the Sprint and identify areas for improvement in the next Sprint. The Scrum Team uses this meeting to discuss what went well, what could be improved, and what actions they will take in the next Sprint to improve their process.

The three pillars of scrum are transparency, inspection and adaptation. In scrum everyone has a role.

User Story

A user story is a simple, one-sentence description of a feature or requirement used to capture the user's needs and help the team understand what they should be building. User stories are a lightweight and flexible way of communicating requirements that can be easily understood and prioritized by the development team. The user story describes the type of user, what they want and why.

User Story ID	**As a <Type of User>**	**I Want to perform <Some Task>**	**So that I can <Achieve some Goal>**
1	User	Register to the system	Access the system
2	User	Login to the system	Access the account
3	User	Creating chatbot	Interact with it

Table 4.2: User Story

Product Backlog

The Product Backlog is a prioritized list of user stories or product requirements. The Product Owner is responsible for maintaining the Product Backlog and ensuring that it reflects the customer's priorities. Nothing gets done that isn't on the product backlog. Conversely, the presence of a product backlog item on a product backlog does not guarantee that it will be delivered. It represents an option the team has for delivering a specific outcome rather than a commitment. It should be cheap and fast to add a product backlog item to the product backlog, and it should be equally as easy to remove a product backlog item that does not result in direct

progress to achieving the desired outcome or enable progress toward the outcome.

PRODUCT BACKLOG			
ID	**NAME**	**PRIORITY**	**ESTIMATE[Hrs]**
1	Register	1	60
2	Login	2	70
3	Creating Chatbot	3	90

Table 4.3: Product Backlog

Project Plan

A project plan that has a series of tasks laid out for the entire project, listing task durations, responsibility assignments, and dependencies. Plans are developed in this manner based on the assumption that the Project Manager, hopefully along with the team, can predict up front everything that will need to happen in the project, how long it will take, and who will be able to do it.

User StoryID	Task Name	Start Date	End Date	Days	Status
Sprint 1					Completed
1	Admin Login	12/02/ 2024	13/02/ 2024	2	Completed
2	Coding	14/02/ 2024	15/02/ 2024	2	Completed
3	Testing	16/02/ 2024	16/02/ 2024	1	Completed
Sprint 2					Completed
4	Create Chatbot , login, signup, add feedback, view news, add news	19/02/ 2024	23/02/ 2024	5	Completed
5	Coding	26/02/ 2024	28/02/ 2024	3	Completed
6	Testing	29/02/ 2024	01/03/ 2024	2	Completed
Sprint 3					Completed
7	Database connectivity	04/03/ 2024	07/03/ 2024	4	Completed
8	User register , login, Register complaint , View complaint status	11/03/ 2024	15/03/ 2024	5	Completed
Sprint 4					Completed
9	Driver login , Check daily work, Update work status	21/03/ 2024	25/03/ 2024	5	Completed
Sprint 5					Completed
10	Deployment	06/04/ 2024	08/04/ 2024	3	Completed
11	Testing and Validation	17/04/ 2024	18/04/ 2024	2	Completed

5.4 Project Plan

The project has three Sprints:

1. **Sprint 1:** Three tasks are planned in this sprint. First one is registration, initial coding and testing.
2. **Sprint 2:**Three tasks are planned in this sprint. First one is to create database for registration, codingto generate result and the next one is testing.
3. **Sprint 3:** In this sprint two tasks are planned to complete; one is Deployment of web application andsecond is testing and validation.
4. **Sprint 4:** In this sprint**,** Driver login , Check daily work, Update work status are done.
5. **Sprint 5 :** In this sprint Deployment, testing and validation are done.

Sprint Backlog (Plan)

The Sprint Backlog is a list of the tasks that the Development Team plans to complete during the current Sprint. The Sprint Backlog is created during the Sprint Planning meeting and is updated throughout the Sprint as progress is made. During the sprint planning meeting, the team selects some number of product backlog items, usually in the form of user stories, and identifies the tasks necessary to complete each userstory. Most teams also estimate how many hours each task will take someone on the team to complete.

Sprint 1: Three tasks are planned in this sprint. First one is registration, initial coding and testing.

Sprint 2: Three tasks are planned in this sprint. First one is to create database for registration, coding togenerate result and the next one is testing.

Sprint 3: In this sprint two tasks are planned to complete; one is Deployment of web application andsecond is testing and validation.

Sprint 4: User story,user login ,admin login are done.

Sprint 5 : Testing,Deployment,validation are completing.

Backlog item	Completion Date	Original Estimate in Hrs	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
User Story #1 Hours			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Registration	02-02-2024	24	2	0	3	0	4	3	0	4	2	0	2	4	0	0
Coding	10-02-2024	20	2	1	2	1	0	2	4	0	0	4	0	0	2	2
Testing	17-02-2024	24	1	4	0	4	1	0	1	2	3	2	2	1	3	0
Total		68	5	5	5	5	5	5	5	6	5	6	4	5	5	2

Table 4.5.1: Sprint Backlog (Plan)-Sprint 1

Backlog item	Completion Date	Original Estimate in Hrs	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
User Story #1 Hrs			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Database Connectivity	01-03-2024	36	3	0	4	2	4	0	2	2	4	3	2	4	4	2
Coding	09-03-2024	20	2	4	1	2	0	2	4	0	0	1	0	0	2	2
Testing	16-03-2024	20	1	2	1	2	2	4	0	3	1	0	2	0	0	2
Total		76	6	6	6	6	6	6	6	5	5	4	4	4	6	6

Table 4.5.2: Sprint Backlog (Plan)-Sprint 2

Backlog item	**Completion Date**	**Original Estimate in Hrs**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**	**Day 11**	**Day 12**	**Day 13**	**Day 14**
User Story #1 Hours			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Deployment	29-03-2024	36	4	0	3	2	2	0	4	2	4	3	2	4	4	2
Testing & Validation	15-04-2024	40	2	4	3	3	4	4	2	4	2	2	4	2	2	2
Total		76	6	4	6	5	6	4	6	6	6	5	6	6	6	4

Table 4.5.3: Sprint Backlog (Plan)-Sprint 3

Backlog item	Completion date	Original estimate in hours	Day1	Day2	Day3	Day4	Day5
UserStory#1Hours			hours	hours	hours	hours	hours
User login ,admin login, chatbot creation	25-03-2024	13	3	2	2	3	3
Total		13	3	2	2	3	3

Table5.5.4SprintBacklog(plan)-Sprint4

Backlog item	Completion date	Original estimate in hours	Day1	Day2	Day3	Day2	Day3
UserStory#1Hours			hours	hours	hours	hours	hours
Deployment	08-04-2024	6	2	2	2	0	0
Testing and Validation	18-04-2024	4	0	0	0	2	2
Total		10	2	2	2	2	2

Table5.5.5SprintBacklog(plan)-Sprint 5

Sprint Backlog (Actual)

Actual sprint backlog is what adequate sprint planning is actually done by project team there may or may not be difference in planned sprint backlog. The Sprint Backlog (actual), on the other hand, is a living document that is updated daily during the Daily Scrum meeting to reflect progress and any changes to the plan. As the team works on the tasks in the Sprint Backlog (plan), they may discover new information or encounter unexpected challenges that require them to adjust their plan.The Sprint Backlog (actual) serves as a tool for tracking progress and making adjustments throughout the Sprint. By comparing the Sprint Backlog (actual) to the Sprint Backlog (plan), the Development Team can identify any variances and take corrective action if necessary to ensure that they are on track to achieve the Sprint Goal. The detailed sprint backlog (Actual) is given below.

Backlog item	Completion Date	Original Estimate in Hrs	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
User Story #1 Hours			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Registration	02-02-2024	24	24	2	0	3	0	4	3	0	4	2	0	2	4	0
Coding	10-02-2024	24	24	1	4	0	4	1	0	1	2	3	2	2	1	3
Testing	17-02-2024	20	20	2	1	2	1	0	2	4	0	0	4	0	0	2
Total		68	68	5	5	5	5	5	5	5	6	5	6	4	5	5

Table 4.6.1: Sprint Backlog (Actual)-Sprint 1

Backlog item	Completion Date	Original Estimate in Hrs	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
User Story #1 Hrs			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Database Connectivity	01-03-2024	36	3	0	4	2	4	0	2	2	4	3	2	4	4	2
Coding	09-03-2024	20	2	4	1	2	0	2	4	0	0	1	0	0	2	2
Testing	16-03-2024	20	1	2	1	2	2	4	0	3	1	0	2	0	0	2
Total		76	6	6	6	6	6	6	6	5	5	4	4	4	6	6

Table 4.6.2: Sprint Backlog (Actual)-Sprint 2

Backlog item	Completion Date	Original Estimate in Hrs	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
User Story #1 Hours			**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**
Deployment	29-03-2024	36	4	0	3	2	2	0	4	2	4	3	2	4	4	2
Testing & Validation	15-04-2024	40	2	4	3	3	4	4	2	4	2	2	4	2	2	2
Total		76	6	4	6	5	6	4	6	6	6	5	6	6	6	4

Table 4.6.3: Sprint Backlog (Actual)-Sprint 3

BacklogItem	Completion time	Original estimate inhours	Day1	Day 2	Day 3	Day 4	Day 5	Day6	Day 7	Day 8	Day 9	Day 10
UserStory#1hrs			**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**
Visual recording coding	27-03-2024	11	1	2	1	1	2	1	1	1	1	0
Test &validate	04-04-2024	9	1	0	1	0	1	1	1	2	2	0
total		20	2	2	2	1	3	2	2	3	3	0

Table 4.6.4 :SprintBacklog(Actual)-Sprint4

Backlog Item	Completion time	Original estimate in hours	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
User Story# 1hrs			**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**	**hours**

Voice feedback Coding	12-04-2024	14	2	1	2	3	2	2	2	0	0	0
Test &validi dat e	16-04-2024	9	1	1	0	1	2	2	2	0	0	0
tota l		23	3	2	2	4	4	4	4	0	0	0

Table 4.6.5: Sprint Backlog (Actual)-Sprint 5

Product Backlog Review

REVIEW FORM

Sprint 1

Version: 1.0 **Date: 17/02/2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
1	Developer should have an easy Registration Process	User friendly Registration
2	Effective Login	If there is forgot Password or Username handled

Table 4.7.1: Product Backlog Review (Sprint 1)

Sprint 2

Version: 1.0 **Date: 16/03/2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
3	Should check Database Connectivity	Check Connection
4	Generation of Result	Check Result

Table 4.7.2: Product Backlog Review (Sprint 2)

Sprint 3

Version:1.0 **Date: 18/04/2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
5	Deployment	Visualize Final Output.
6	Generation of Predicted Result	Satisfied

Table 4.7.3: Product Backlog Review (Sprint 3)

Sprint 4

Version 1.0 **Date:21-03-2024**

User Story ID	Comments from Scrum Master If any	Comments from Product Owner if any
6	Visual recording	Successful

Table 4.7.4:Product backlog review(Sprint4)

Sprint 5

Version 1.0 **Date:05-04-2024**

User Story ID	Comments from Scrum Master If any	Comments from Product Owner if any
7	voice output	Successful

Table 4.7.4:Product backlog review(Sprint4)

Sprint Review

At the end of each Sprint, the Scrum Team holds a Sprint Review meeting to demonstrate the completed work to stakeholders and receive feedback. The Sprint Review provides an opportunity for the Scrum Team to reflect on their progress and identify areas for improvement.

REVIEW FORM

Sprint 1

Version: 1.0 **Date: 09-02-2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
1	Developer should have an easy Registration Process	User friendly Registration
2	Effective Login	If there is forgot Password or Username handled

Table 4.8.1: Sprint Review (Sprint 1)

Sprint 2

Version: 1.0 **Date:21-02-2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
3	Should check Database Connectivity	Check Connection
4	Generation of Result	Check Result

Table 4.8.2: Sprint Review (Sprint 2)

Sprint 3

Version: 1.0 **Date: 06-03-2024**

User Story ID	Comments from Scrum Master if any	Comments from Product Owner if any
5	Deployment	Visualize Final Output.
6	Generation of Predicted Result	Satisfied

Table 4.8.3: Sprint Review (Sprint 3)

Version: 1.0 **Sprint 4** **Date: 08-03-2024**

Test #	Date	Action	Expected result	Actual Result	Pass? (Yes/No)
1	21-03-2024	Give the Required output	System should give the required output	System should give the required output	Yes

Table 4.9.4:Testing and Validation-Sprint 4

Version:1.0 **Sprint 5** **Date:09-03-2024**

Test #	Date	Action	Expected result	Actual Result	Pass? (Yes/No)
1	05-04-2024	System convert text to speech	System should Convert the text to speech	System can successfully convert the text to speech	Yes

Table 4.9.3:Testing and Validation-Sprint 5

Testing and Validation

Sprint 1

Version: 1.0 **Date: 21-03-2024**

Test#	Date	Action	Expected Result	Actual Result	Pass? <Yes/ No>
1	01/03/2024	Registration	Registration Successful	Successful	Yes
2	07/03/2024	Login	Login to System	Login Successful	Yes

Table 4.9.1: Testing and Validation (Sprint 1)

Sprint 2

Version: 1.0 **Date: 05-04-2024**

Test#	Date	Action	Expected Result	Actual Result	Pass? <Yes/ No>
3	06/04/2024	Development of Web Application	UI will be formed.	Successful	Yes

Table 4.9.2: Testing and Validation (Sprint 2)

Sprint 3

Version: 1.0 **Date: 8/04/2024**

Test#	Date	Action	Expected Result	Actual Result	Pass? <Yes/ No>
4	06/04/2024	Deployment	Result Generated Successfully	Successful	Yes

Table 4.9.3:Testing and Validation (Sprint 3)

Sprint 4

Version 1.0 **Date:12-04-2024**

User Story ID	Comments from Scrum Master If any	Comments from Product Owner if any
6	Visual recording	Successful

Table 4.7.4:Product backlog review(Sprint4)

Sprint 5

Version 1.0 **Date:19-04-2024**

User Story ID	Comments from Scrum Master If any	Comments from Product Owner if any
7	voice output	Successful

Table 4.7.4:Product backlog review(Sprint5)

Chapter 5

Result and Discussions

Result and Discussion

The project successfully implemented a customizable chatbot system utilizing transformer-based models for natural language processing. Key functionalities, including user authentication, manager registration, employee details management, and robust testing, were developed and integrated into the system. The chatbot demonstrated the ability to understand user queries, generate contextually appropriate responses, and manage user interactions effectively.

Implementation

Transformers, the revolutionary deep learning model architecture introduced in the paper "Attention is All You Need" by Vaswani et al., has reshaped the landscape of natural language processing (NLP) and beyond. Unlike previous sequence models such as recurrent neural networks (RNNs) and convolutional neural networks (CNNs), transformers rely solely on self-attention mechanisms to weigh the importance of different words in a sequence, enabling parallelization and capturing long-range dependencies more effectively

At its core, a transformer consists of an encoder-decoder architecture, each composed of multiple layers of self-attention mechanisms and feedforward neural networks. In the encoder, self-attention is computed across all input tokens simultaneously, allowing each token to attend to every other token in the sequence, capturing context more comprehensively. The decoder, on the other hand, attends not only to the input sequence but also to the encoder's output, enabling the model to generate output sequences token by token while considering the context encoded in the input. The self-attention mechanism calculates attention scores by computing the compatibility between each pair of tokens, which are subsequently used to weight the importance of each token's representation. These weighted representations are then aggregated to produce context-aware token embeddings, which are further refined through position-wise feedforward neural networks. To train transformers, a variant of the self-supervised learning paradigm known as masked language modeling (MLM) is commonly employed. In MLM, a random subset of tokens in the input sequence is

masked, and the model is trained to predict the original identities of these masked tokens based on the surrounding context.

With their remarkable ability to capture intricate patterns in sequential data, transformers have achieved state-of-the-art performance across various NLP tasks, including language translation, text summarization, sentiment analysis, and question answering. Furthermore, their versatility extends beyond NLP, finding applications in computer vision, speech recognition, and reinforcement learning.

Data Flow Diagram

A data flow diagram (DFD) is a graphical representation of how data flows through a system. It is a tool used in software engineering to analyze, design, and document information systems. DFD shows how the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output. A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

The different levels of a DFD are:

1. **Level 0 DFD:**

This is the highest level and shows the overall system as a single process.

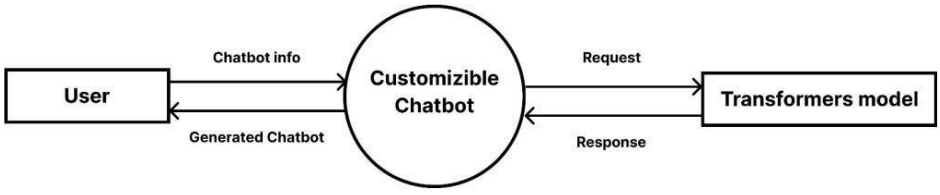
2. **Level 1 DFD:**

This level shows the main processes that make up the system.

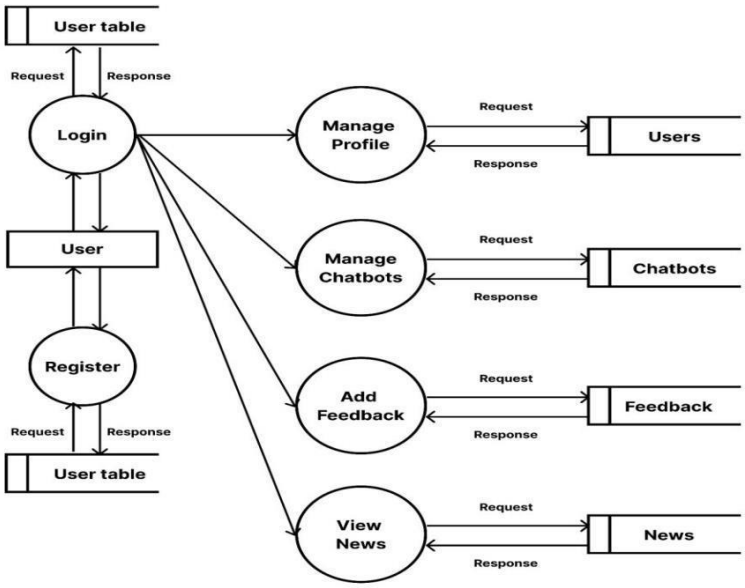
3. **Level 2 DFD:**

This level shows the processes within the main processes shown in Level 1.

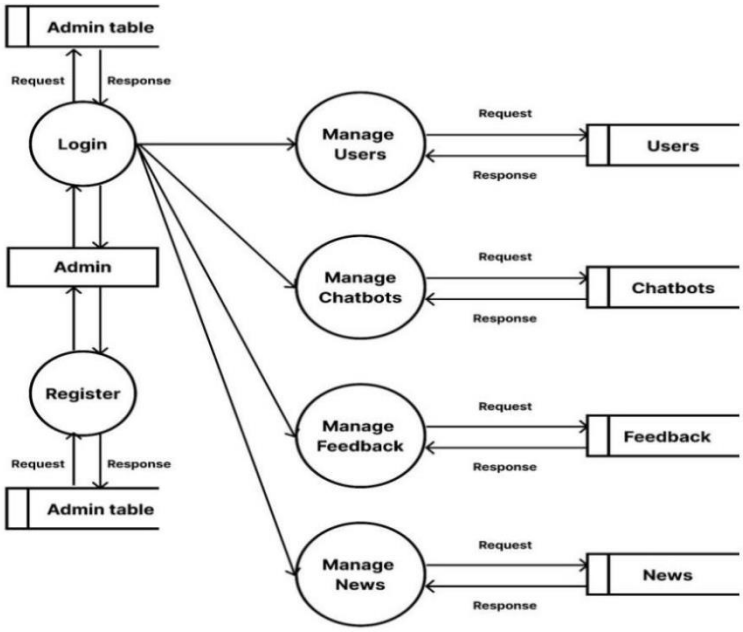
Level 0



Level 1 User



Level 2 Admin



Chapter 6

Conclusion

Summary

The culmination of this project marks a significant milestone in the development of a chatbot system tailored precisely to organizational requirements. By harnessing the power of transformer-based models and Django for backend infrastructure, the project has demonstrated the capacity to deliver intelligent conversational experiences to users. The systematic approach to sprint planning and testing ensured the robustness and reliability of critical features, affirming the efficacy of agile methodologies in project management.Beyond achieving its immediate objectives, the project sheds light on the broader potential of AI-driven chatbots in transforming communication and optimizing organizational processes. With the ever-evolving landscape of AI technologies, there exist vast opportunities for further innovation and refinement. These advancements hold the promise of driving efficiency, productivity, and innovation across industries, positioning organizations at the forefront of digital transformation.Looking ahead, the success of this project serves as a testament to the importance of embracing cutting-edge technologies and agile methodologies in meeting user expectations and organizational objectives in today's digital landscape. As organizations continue to leverage AI-driven solutions to enhance user experiences and streamline operations, the potential for innovation and growth in the field of conversational AI remains boundless. Through continued collaboration, experimentation,and adaptation, the possibilities for enhancing chatbot systems to meet the evolving needsof users and organizations alike are limitless.

Limitations

- Scalability Challenges: Blockchain platforms may encounter scalability issues, particularly as the volume of land transactions grows. Processing speed and network capacity may struggle to keep up with high transaction volumes, leading to delays andbottlenecks in the system.
- Regulatory Compliance Complexity: Adhering to existing regulatory frameworks and

legal standards presents a challenge, especially regarding data privacy and property rights. Ensuring compliance across diverse jurisdictions can be complex and may require significant resources and expertise.

➢ Cost Considerations: Developing and maintaining a blockchain-based land registry

system entails substantial costs, including infrastructure, development, and ongoing maintenance. Additionally, transaction fees and energy consumption associated with blockchain technology can contribute to the overall cost of implementation and operation.

Future scope

In envisioning future enhancements for the chatbot system, several avenues for improvement and expansion emerge. Firstly, integrating advanced AI capabilities such as sentiment analysis and entity recognition could significantly enhance the chatbot's ability to understand and respond to user queries with greater accuracy and nuance. This augmentation would enable the chatbot to discern the underlying sentiment and extract relevant entities from user inputs, thereby facilitating more personalized and contextually appropriate responses.
Furthermore, implementing more sophisticated user authentication mechanisms, including multi-factor authentication and biometric verification, would bolster the system's security and user trust. By incorporating additional layers of authentication, organizations can mitigate the risk of unauthorized access and safeguard sensitive information effectively.

Expanding the employee details management module to encompass comprehensive HR functionalities such as performance evaluation, task assignment, and scheduling capabilities could further optimize organizational processes. This enhancement would empower managers to streamline HR operations, monitor employee performance, and allocate tasks efficiently, thereby fostering greater productivity and accountability within the organization.

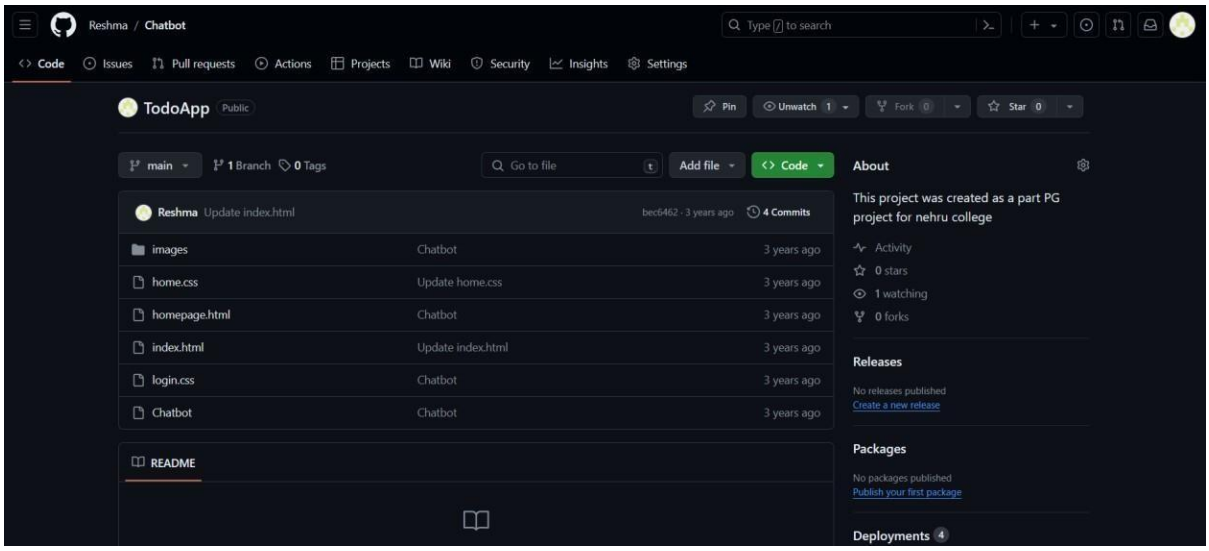
Moreover, integrating voice recognition and synthesis capabilities would enable users to interact with the chatbot through voice commands, thereby enhancing accessibility and user experience. By incorporating natural language processing techniques for voice-based interactions, organizations can cater to a broader range of users and facilitate seamless communication across diverse channels.

Lastly, leveraging machine learning techniques for continuous learning and improvement would enable the chatbot to adapt and evolve over time based on user interactions and feedback. By analyzing user interactions and iteratively refining its responses, the chatbot can continuously enhance its language understanding and generation capabilities, thereby

delivering more intuitive and contextually relevant responses to users.

In summary, by incorporating these future enhancements, the chatbot system can further elevate organizational communication, user engagement, and operational efficiency, positioning the organization at the forefront of innovation in conversational AI.

Git history



Chapter 7

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Chapter 8

Appendix

8.1 Source Code

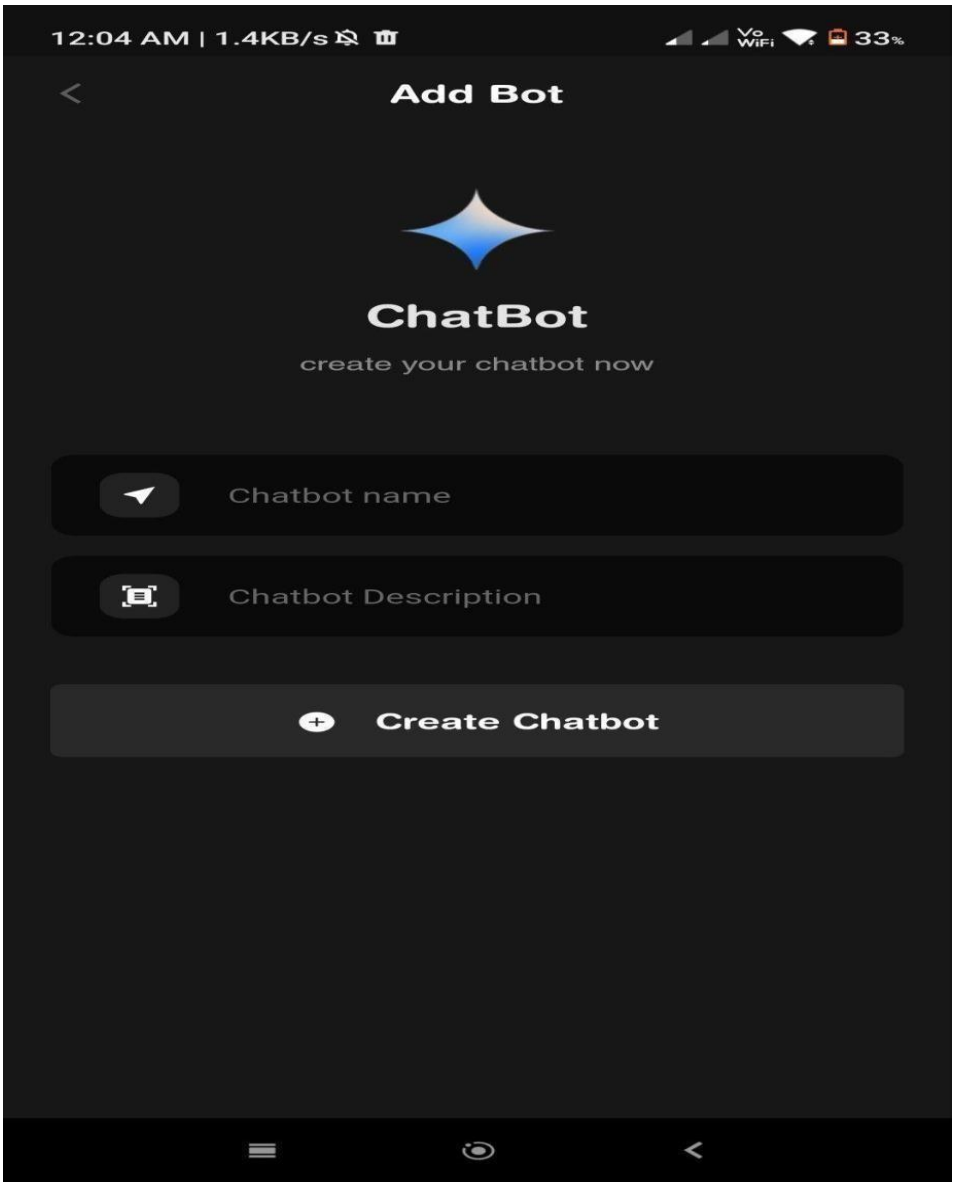
```
from django.shortcuts import render
from django.http import HttpResponseRedirect, HttpResponse, JsonResponse
from django.contrib.auth import authenticate,logout,login
from django.contrib.auth.decorators import login_required
from django.urls import reverse
from django.db.models import Q
from django.contrib.auth.models import User
from .models import *
from django.views.decorators.csrf import csrf_exempt
# Create your views here.d

def homepage(request):
```

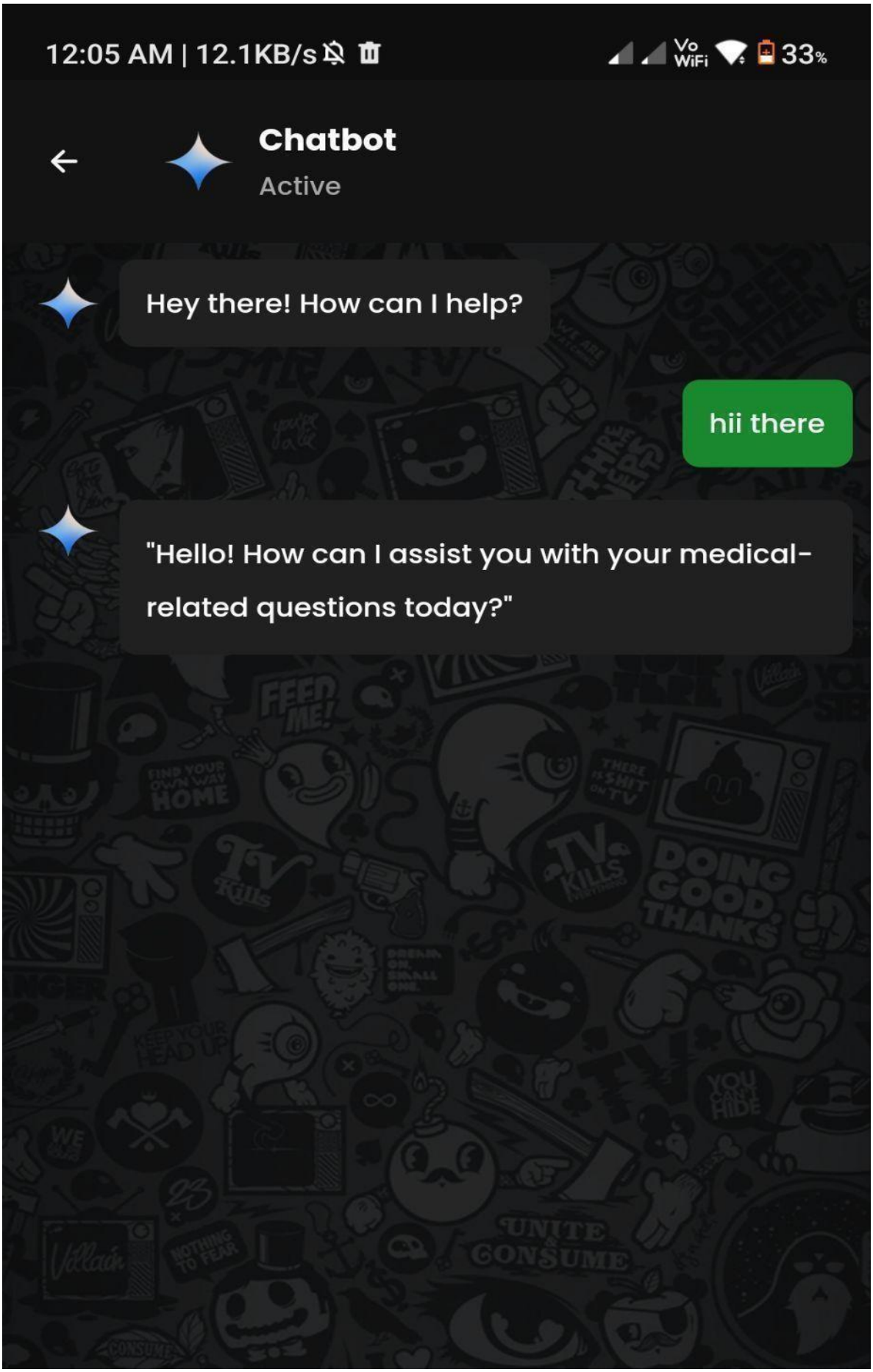
```
    if request.user.is_authenticated:
        profile = userProfile.objects.filter(user = request.user).first()

    else:
        profile = ''
    return render(request,'homepage.html',context = {'profile':profile})

message = 0
reg_error = 0
@csrf_exempt
def register(request):
    data = json.loads(request.body.decode('utf-8'))
    if request.method == 'POST':
        try:
            user = User.objects.create(username = data['username'],email=data['email'])
user.set_password(data['password'])
user.save()

            user = User.objects.filter(username=data["username"]).first()
            profile = userProfile.objects.create(user = user,address = data["address"],phone
= data["phone"])

dict = {'success': 'yes'}

my_dict_json = json.dumps(dict)
        except:
dict = {'success': 'no'}
print("some error")

my_dict_json = json.dumps(dict)

    return HttpResponse(my_dict_json,  content_type='application/json')



def checkLogin(request):

    username = request.POST.get('username')
    password = request.POST.get('password')

    user = authenticate(username = username,password = password)
    if user:
        print(username)
        return JsonResponse({"message":0})

    else:
print("No user found")
```

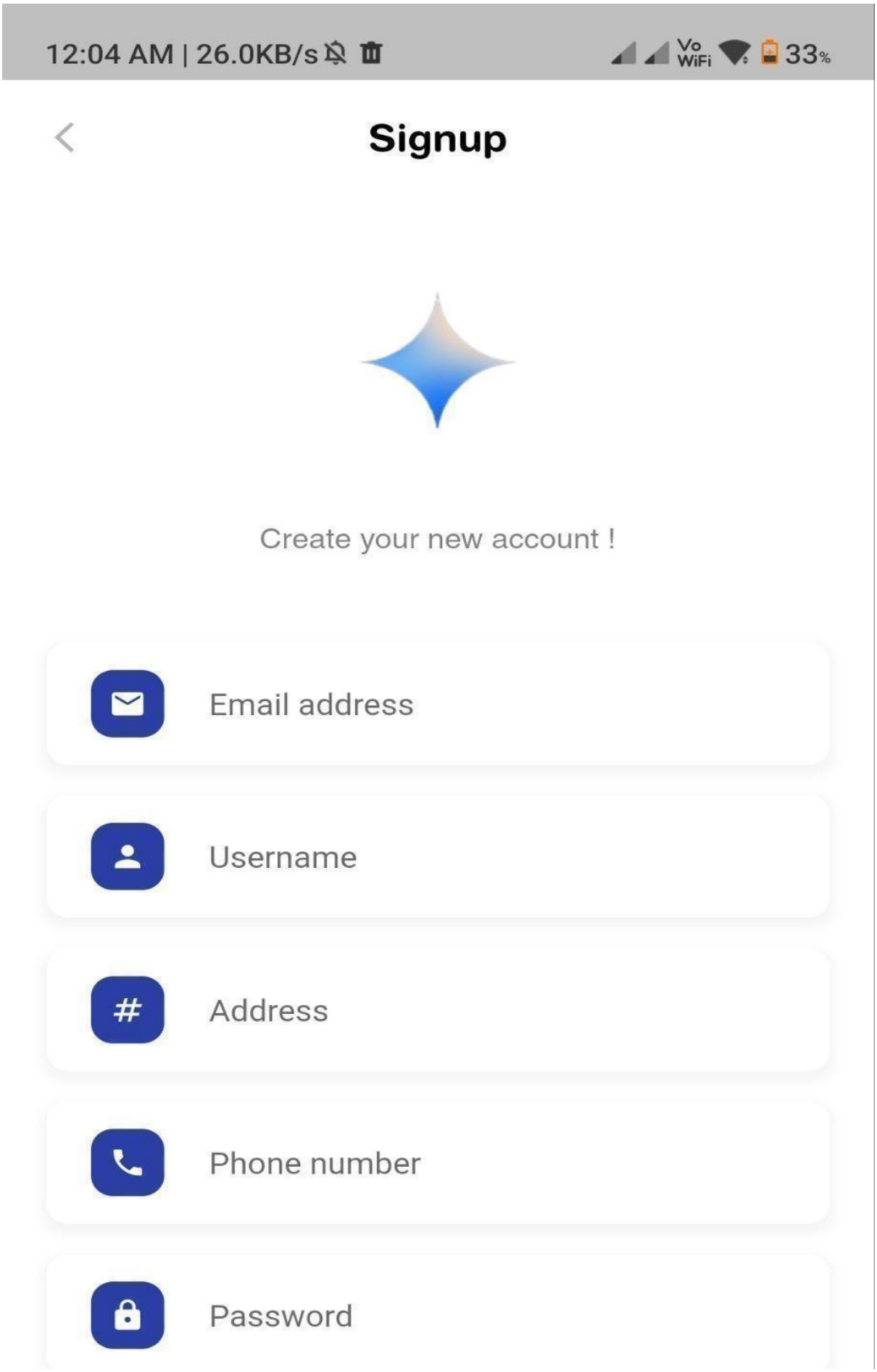
```
        return JsonResponse({"message":1})

@csrf_exempt
def user_login(request):

    data = json.loads(request.body.decode('utf-8'))
text_data = data['username']
    dt = []


  if request.method == 'POST':
      password = request.POST.get('password')
        print(data['username'])
        user = authenticate(username = data['username'],password = data['password'])
        us = User.objects.filter(username = data["username"]).first()

        if user:

        if user.is_active:
login(request, user)
print("login success!!!")
                # data = {"success":1}
my_dict = {'success': 'yes',"date":""}
my_dict_json = json.dumps(my_dict)

        else:
            data = {"success":1}
print("No such user")
my_dict = {'success': 'no'}
my_dict_json = json.dumps(my_dict)

    return HttpResponse(my_dict_json, content_type='application/json')

@csrf_exempt
def user_logout(request):

    logout(request)
print("logged out")

    return HttpResponseRedirect(reverse('homepage'))

import datetime


@csrf_exempt
def getBots(request):
    bots = Chatbot.objects.filter(username = request.POST.get('username')).order_by('-
date')
```

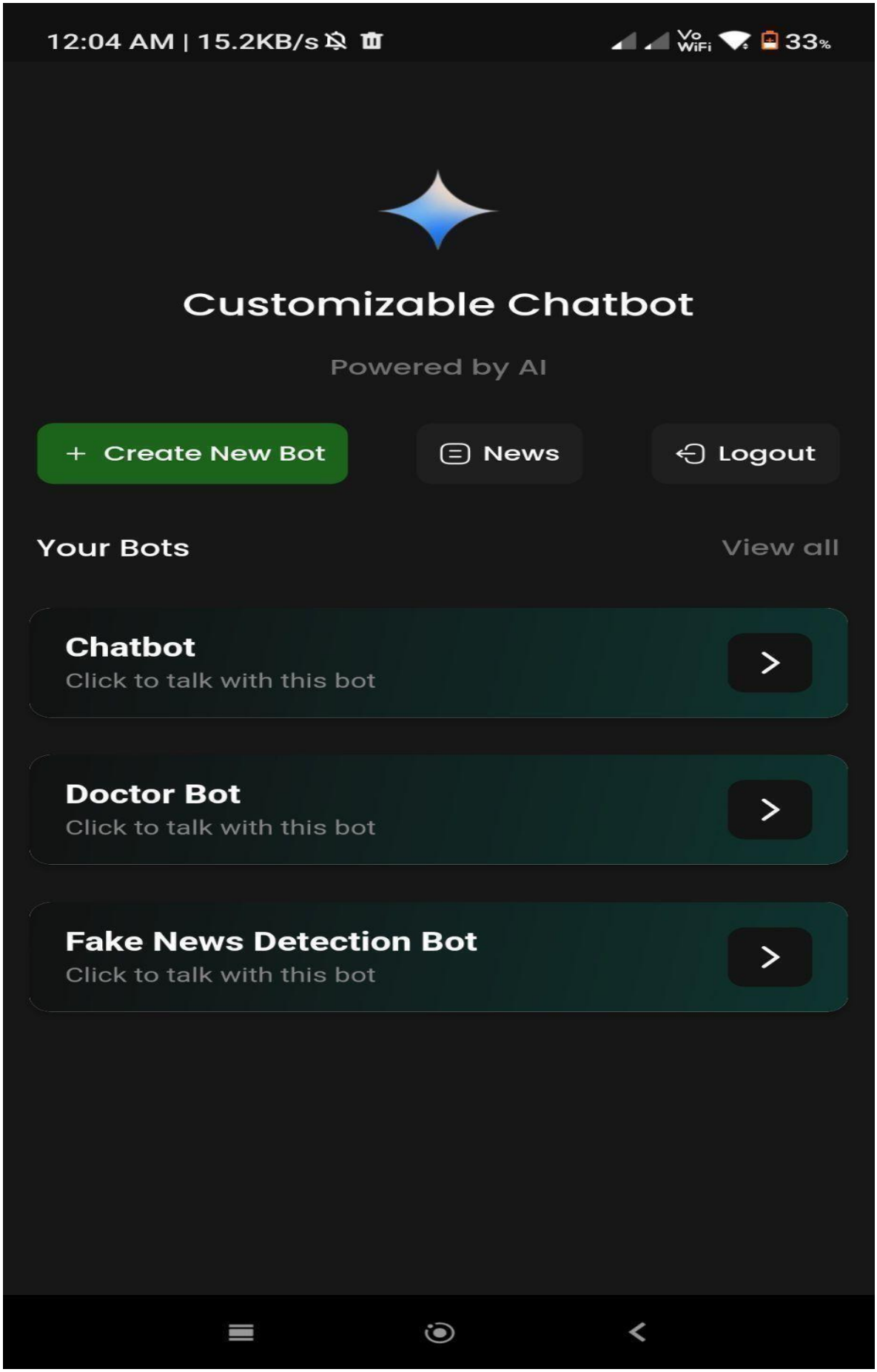
```
    data = []
    for b in bots:
formatted_time = b.date.strftime("%a %d %Y at %I:%M %p")
product_data = {
            'name': b.name,
            'pk':str(b.pk),

            'date' :formatted_time

           }

data.append(product_data)
    return JsonResponse(data, safe=False)

@csrf_exempt
def posts(request):
    products = Post.objects.all()
    data = []
    for product in products:
formatted_time = product.date.strftime("%a %d %Y at %I:%M %p")
product_data = {
            'name': product.name,
            'pk':str(product.pk),
            'description':product.desc,
            'image': request.build_absolute_uri(product.image.url),
            'date' :formatted_time
}
        print(request.build_absolute_uri(product.image.url))
data.append(product_data)
    print(data)
    return JsonResponse(data, safe=False)




import openai

openai.api_key =  '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'


@csrf_exempt
def chatbot(request):
datauser = json.loads(request.body.decode('utf-8'))
    bot = Chatbot.objects.filter(pk = datauser['pk']).first()
text_data = datauser['message']
    data = []
    response = openai.ChatCompletion.create(
```

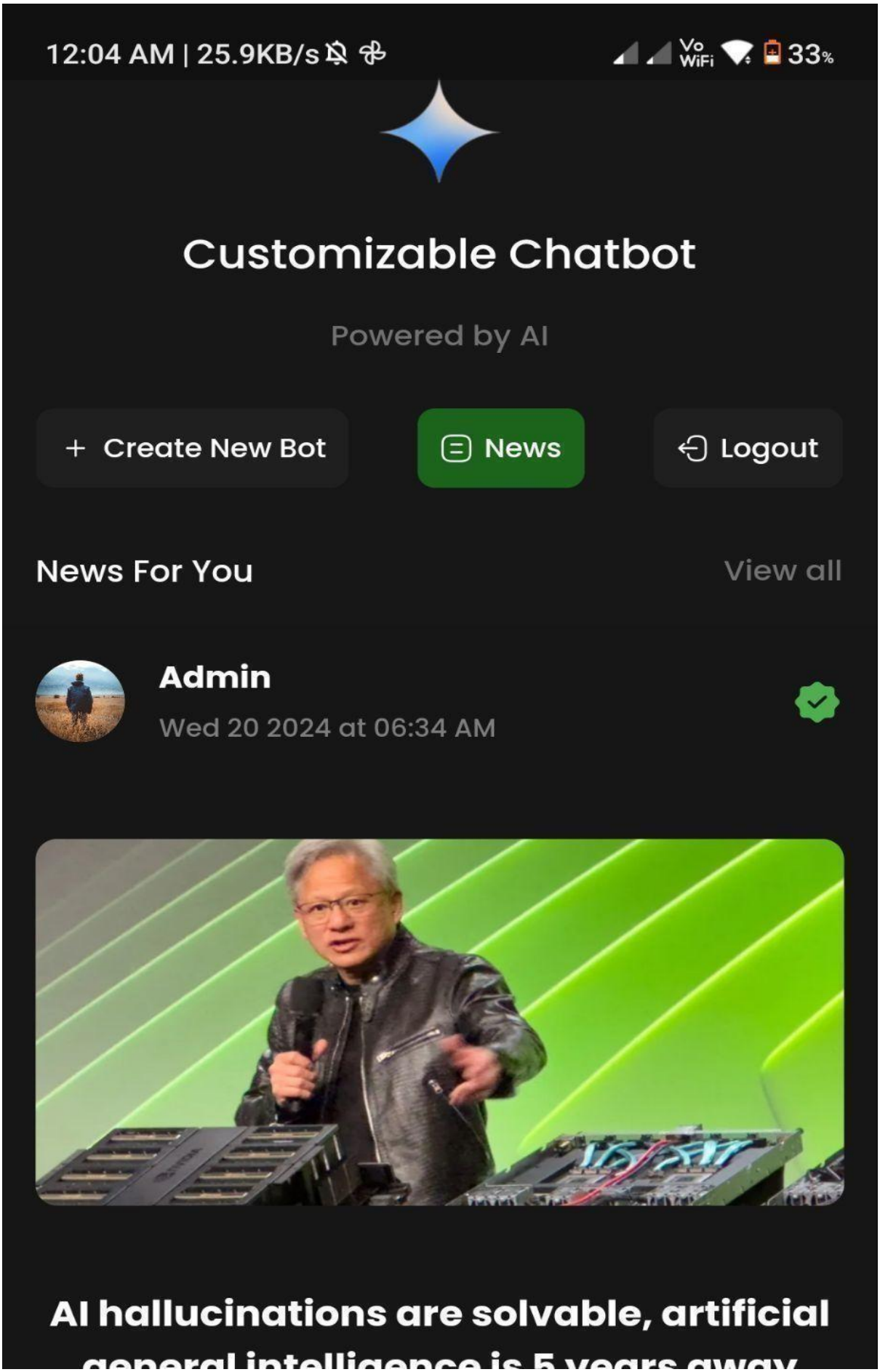
```
            model="gpt-3.5-turbo",
            messages=[
                {"role": "system", "content": bot.desc},
                {"role": "user", "content": text_data},
            ]
            )
        resmsg = response['choices'][0]['message']['content']



        cleaned_response = resmsg.replace('\n', '').replace('/n/n','').replace('/n','')
print(response['choices'][0]['message']['content'])
            return JsonResponse(cleaned_response, safe=False)
```

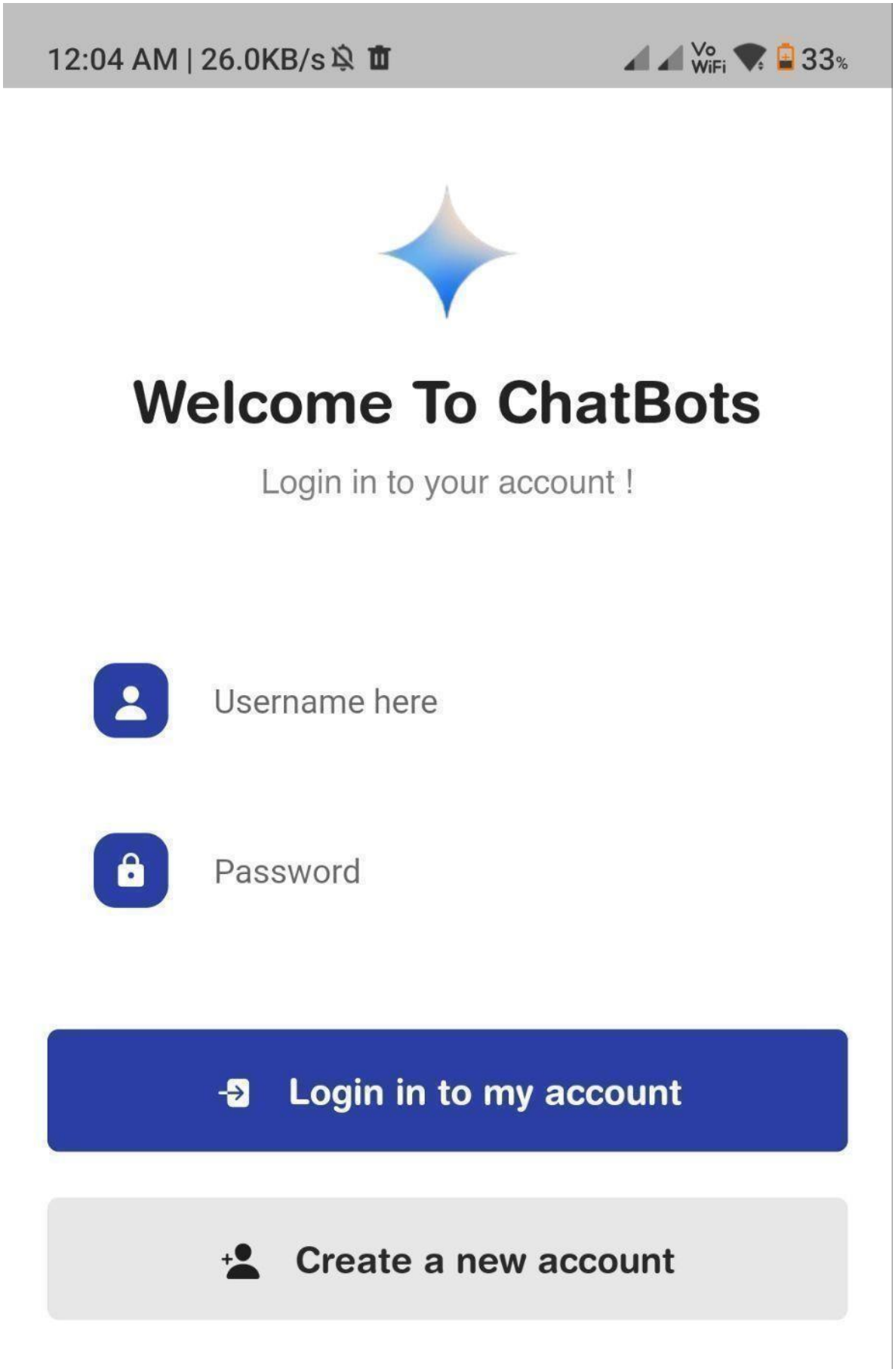

12:04 AM | 1.4KB/s
33%
Add Bot
ChatBot
create your chatbot now
Chatbot name
Chatbot Description
Create Chatbot


12:05 AM | 12.1KB/s
33%
Chatbot
Active
Hey there! How can I help?
hii there
"Hello! How can I assist you with your medical-related questions today?"


12:04 AM | 26.0KB/s
33%
Signup
Create your new account !
Email address
Username
Address
Phone number
Password


12:04 AM | 15.2KB/s
33%
Customizable Chatbot
Powered by AI
+ Create New Bot
News
Logout
Your Bots
View all
Chatbot
Click to talk with this bot
Doctor Bot
Click to talk with this bot
Fake News Detection Bot
Click to talk with this bot


12:04 AM | 25.9KB/s
33%
Customizable Chatbot
Powered by AI
+ Create New Bot
News
Logout
News For You
View all
Admin
Wed 20 2024 at 06:34 AM
AI hallucinations are solvable, artificial


12:04 AM | 26.0KB/s
33%
Welcome To ChatBots
Login in to your account !
Username here
Password
Login in to my account
Create a new account

9.Publication

CUSTOMIZABLE CHATBOT USING ARTIFICIAL INTELLIGENCE

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ABSTRACT

Customizable chatbots empowered by AI represent a pivotal advancement in conversational interfaces, offering tailored interactions to meet diverse user needs. Leveraging machine learning algorithms, these chatbots dynamically adapt their responses based on user input, refining their understanding of context and intent over time. This abstract examines the transformative potential of customizable chatbots across various domains, from customer service and education to healthcare and beyond. By enabling personalized experiences and enhancing efficiency, these AI-driven chatbots are poised to revolutionize how businesses and individuals engage in dialogue, driving innovation and fostering deeper connections in the digital age. This abstract explores the evolution of customizable chatbots, highlighting their capacity to enhance user experience, streamline communication processes, and foster deeper engagement across a spectrum of applications. By enabling personalized experiences and enhancing efficiency, these AI-driven chatbots are poised to revolutionize how businesses and individuals engage in dialogue, driving innovation and fostering deeper connections in the digital age.

INTRODUCTION

In the landscape of digital interaction, customizable chatbots infused with artificial intelligence have emerged as versatile tools, revolutionizing the way businesses and individuals engage in conversations. These innovative bots, equipped with sophisticated algorithms and machine learning capabilities, can be tailored to fit specific needs, industries, and user preferences. Unlike traditional static chatbots, they possess the agility to adapt their responses in real-time, learning from user interactions to provide increasingly personalized experiences. This introduction sets the stage for exploring the multifaceted capabilities and transformative potential of customizable chatbots powered by AI, as they continue to reshape communication paradigms across various domains. This introduction underscores the pivotal role of customizable chatbots in enhancing customer engagement, optimizing business processes, and facilitating smoother interactions across diverse sectors. As organizations increasingly recognize the value of personalized interactions , the demand for AI-powered chatbots tailored to specific requirements is poised to escalate, driving innovation and reshaping the future of communication.

LITERATURE SURVEY

A literature survey on customizable chatbots using AI reveals a multifaceted landscape of research and development. Scholars have extensively explored the technical underpinnings of these chatbots, investigating various architectures, algorithms, and frameworks for building adaptable conversational interfaces. Studies emphasize the importance of integrating advanced AI techniques such as natural language processing (NLP) and machine learning to enable personalized interactions and contextual understanding.

Moreover, research in this domain has highlighted the significance of user experience (UX) and engagement in driving the adoption and effectiveness of customizable chatbots. Scholars have conducted usability studies, user surveys, and qualitative analyses to evaluate the usability, satisfaction, and effectiveness of chatbot interfaces across different user demographics and contexts. Understanding user preferences and behavior is crucial for designing chatbots that not only meet functional requirements but also deliver a seamless and engaging conversational experience.

Furthermore, the literature survey underscores the diverse applications of customizable chatbots across various industries and domains. From customer service and healthcare to education and finance, researchers have explored how tailored chatbot solutions can address specific needs and challenges within different sectors. Case studies and empirical research provide insights into the practical implementation, deployment strategies, and outcomes of chatbots in real-world settings, shedding light on successful use cases, challenges encountered, and lessons learned.

METHODOLOGY

A concise research methodology for developing customizable chatbots using AI typically involves the following steps:

1. **Requirement Elicitation**: Begin by identifying the specific objectives and requirements for the chatbot through stakeholder interviews, surveys, and domain analysis. This step ensures a clear understanding of the target audience, desired functionalities, and customization needs.

2. **Platform Selection**: Choose a suitable development platform or framework for building the chatbot , considering factors such as ease of use, scalability, and compatibility with AI technologies. Popular options include open-source frameworks like Tensor Flow or cloud-based platforms such as Dialog flow.

3.Data Collection and Preprocessing: Gather relevant conversational data from sources like chat logs, customer support interactions, or domain-specific datasets. Clean and preprocess the data to remove noise, anonymize sensitive information, and format it for training the chatbot model.

4.Model Training and Customization: Train the chatbot's AI model using machine learning techniques, focusing on tasks such as intent recognition, entity extraction, and response generation. Implement customization mechanisms to tailor the chatbot's behavior and responses based on user preferences and context.

5.Integration and Deployment: Integrate the trained chatbot model into the chosen platform or deployment environment, such as web applications or messaging platforms. Test the chatbot extensively to ensure functionality, performance, and reliability before deployment.

6.Evaluation and Feedback: Conduct user testing and evaluation to assess the chatbot's performance, usability, and user satisfaction. Gather feedback from users and stakeholders to identify areas for improvement and iteratively refine the chatbot's design and functionality.

RESULT ANALYSIS

Research findings on customizable chatbots using AI indicate significant enhancements in user engagement, experience, and business outcomes. These chatbots consistently demonstrate the ability to foster deeper user engagement through personalized interactions tailored to individual preferences and contexts, leading to higher levels of satisfaction and interaction compared to non-customizable alternatives. Moreover, they contribute to an improved user experience by offering intuitive interfaces, responsive interactions, and adaptive behavior, as evidenced by improved usability metrics and satisfaction scores. Additionally, customizable chatbots drive business success by increasing task efficiency, reducing support costs, boosting sales conversions, and enhancing customer retention, highlighting their pivotal role in reshaping communication paradigms and driving tangible business value.

CONCLUSION

In conclusion, customizable chatbots leveraging AI technologies represent a transformative solution in modern communication systems. Their ability to adapt responses to individual preferences and contexts enhances user engagement and experience significantly, leading to higher satisfaction levels and more efficient interactions. Moreover, these chatbots offer tangible business benefits by increasing task efficiency, reducing costs, and improving customer retention rates. As they continue to evolve and integrate with various industries, customizable chatbots hold immense promise for revolutionizing customer service, sales, marketing, and beyond. By harnessing the power of AI to deliver personalized, efficient, and adaptable conversational experiences, customizable chatbots are poised to shape the future of communication and drive sustained business success. Furthermore, as AI technologies continue to advance, customizable chatbots will likely become even more sophisticated in their understanding of user needs and preferences. Their seamless integration with existing systems and platforms ensures scalability and versatility across diverse domains. Ultimately, customizable chatbots represent a pivotal tool for businesses and individuals seeking to optimize communication processes and enhance user interactions in an increasingly digital landscape.

FUTURE SCOPE

The future scope of customizable chatbots using AI is promising and expansive. With ongoing advancements in natural language processing, machine learning, and conversational AI, these chatbots are poised to become even more intelligent, intuitive, and adaptable. Future iterations may incorporate advanced personalization techniques, enabling chatbots to anticipate user needs proactively and provide hyper-personalized experiences. Moreover, as chatbots continue to integrate with emerging technologies like augmented reality and voice assistants, their utility and versatility will expand across various platforms and devices. Furthermore, customizable chatbots hold significant potential in domains such as healthcare, education, and finance, where tailored interactions and seamless communication are paramount. As businesses and individuals increasingly rely on digital communication channels, the future of customizable chatbots powered by AI is characterized by innovation, efficiency, and enhanced user engagement.

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