# CHATBOT USING MACHINE LEARNING

A PROJECT REPORT

*Submitted by,*

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*Under the guidance of,*

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*in partial fulfillment for the award of the degree of*
BACHELOR OF TECHNOLOGY

IN

COMPUTER ENGINEERING [Data Analytics]

At


PRESIDENCY UNIVERSITY
BENGALURU
JANUARY 2024

# PRESIDENCY UNIVERSITY

## SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

## CERTIFICATE

his is to certify that the Project report **"ChatBot Using Machine Learning"** being submitted by Siva Sai 20201COD0029 and S. Annamaiah 20201COD0051 in partial fulfilment of requirement for ne award of degree of Bachelor of Technology in Computer Engineering [Data Analytics] is a onafide work carried out under my supervision.

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## DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **TITLE OF THE PROJECT** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Engineering [Data Analytics]**, is a record of our own investigations carried under the guidance of Mr. Pajany M, Assistant Professor, **School of Computer Science and Engineering, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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# ABSTRACT

Chatbots are intelligent computer programs that simulate human speech and the Artificial Intelligence Markup Language (AIML) is a tool that these bots use to build intelligent and interactive soft ware systems. AIML provides a foundation for machines to demonstrate a level of intelligence similar to that of human mental processes. In this regard, our article explores the development and deployment of a movie-related question-focused ChatBot.

This ChatBot's primary goal is to give users accurate and in-depth information based on a dataset of often asked questions (FAQs). The ChatBot uses AIML to handle templatebased queries and answer to frequently asked user congratulations or greetings.This guarantees a smooth and convenient interaction experience.

We apply Latent Semantic Analysis (LSA) to improve the ChatBot's comprehension of natural language and its contextual response capability. As a crucial part of Natural Language Processing (NLP), LSA enables the ChatBot to understand the subtleties of user messages and provide relevant responses. The combination of AIML and LSA improves the ChatBot's language understanding and helps it respond to user inquiries more accurately.

Our ChatBot, which caters to movie-related queries, is a prime example of how AIML and NLP can be used practically to give users a sophisticated and user-friendly conversational interface. This integration not only makes information retrieval more efficient, but it also demonstrates how AI-driven technology may improve user engagement in a variety of context.

# ACKNOWLEDGEMENT

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We thank our family and friends for the strong support and inspiration they have provided us in bringing out this project.

**Y.SIVA SAI**

**S ANNAMAIAH**

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# CHAPTER-1
# INTRODUCTION

People these days watch movies for far too much entertainment, and because of their busyschedules and time constraints, they are willing to finish all tasks quickly. However, finding different movies ondifferent websites takes time and is a laborious process.We have developed an effective Bot that engages with users in a courteous manner in order tosolve the aforementioned issue. Natural Language Processing (NLP) components AIML and LSA were used to construct this movie application bot.

Applications utilizing artificial intelligence are created using AIML, a markup language based on XML. Processing the user's query and comparing it to the pre-existing questionsin the database isdone via latent semantic analysis, which speeds up the process of findingthe right answer.

chatbot, which iscapable of providing thoughtful responses to user inquiries. The Internet is full of resources that we can use to host our customized Numerous businesses, institutions, and organizationsuse these services to provide for their customers. Artificial Intelligence Markup Language, or AIML, is one of the most popular languages for creating bots.

Artificial Intelligence Markup Language, or XML Base Language, is saved with the extension.aiml and is used to create chatbots (AI). By answering the questions about what chatbots are, their advantages, and how to make them, the knowledge gap can be closed.

By dissecting the basic conceptof the term and examining both recent and historical usage, it is possible to provide a suitable description of chatbots. There are applicationsfor chatbots in current products. It is possible to identify new potential applications for chatbots by analyzing media and technological characteristics as well as market trends.

The easiest way to explain development is to build a genuine chatbot and use it to walk through the fundamental ideas of the process. The development of the chatbot ecosystemwill speed up if more individuals are able to use and build chatbots by demystifying theiruses, explaining what they are, and showing how to make them. Technology innovation and the development of fresh approaches canassist in automating and streamlining more chores, freeing up people's time to concentrate on more engaging problems and completemore jobs. Chatbots have the ability to automate and simplify a lot of current.

chatbots are formed through the definition of terminology and the exploration of applications. After that, use cases for chatbots arefound by gathering examples that now exist and by investigating potential future applications by examining the characteristics ofpertinent technology. A case study for the creation of a chatbot makesup the second half of the paper. In addition to walking developers through the process of building user interactions for a chatbot, the example also outlines technological and architectural choices that can be used as a foundation for future chatbot development.

you understand the communication more easily. converse is described as" an informal discussion" by the Oxford Dictionary, with more specific delineations being" the online exchange of dispatches in real time with one or further contemporaneous druggies of acomputer network." This description makes it clear that addresses are essential to converse and, therefore, to chatbots. The description also highlights the characteristicsof being online and in real time, as well as the natural casual structure of a converse.

Though there are differences in formality between, say, a formal letter and a converse communication, informality isn't always a need. Being online and not being confined to aparticular place, object, or other physicality might be considered as a pivotal starting point for figuring out what kinds of systems might be applicable for these kinds of media.confining communication to real- time entails limitations on possible relations and establishes a standard for the kind of stoner experience that can be anticipated. also, using some technologies that do not enable the needed responsiveness isn't allowed.

# CHAPTER-2
# LITERATURE SURVEY

| Authors | Title | Conference/Journal | Key Focus Areas |
|---|---|---|---|
| Salto Martínez Rodrigo, Jacques García Fausto Abraham | Development and Implementation of a Chatbot in Social Networks | 2012 Ninth International Conference on Information Technology - New Generation | Message Reception, Message Processing, Generation of Suitable Replies |
| Karthick S1 | Professional Chat Application | Not Specified | Stemming and Lemmatization |
| RJohn Victor2, Manikandan S3, Bhargavi Goswami4 | Natural Language Processing-based Chat Application | IEEE International Islamic University Chittagong | Stemming, Lemmatization, Natural Language Processing |
| AM Rahman1, Abdullah Al Mamun, Alma Islam2 | Programming Challenges of Chatbot: Current and Future Prospective | IEEE International Islamic University Chittagong | Natural Language Processing, Dialogue Management, Syntactic Analysis, SVM, Naive Bayes, Q-learning |
| Yoko Nishihara, Masaki Ikuta, Ryosuke Yamanishi, Jun-ichi Fukumoto | Method of Back-Channel Response to Let a Chatting Bot Be a Member of Discussions ina Text-Based Chat | IIAI International Conference, July 2017 | Q-learning, SVM, Naive Bayes, Syntactic Analysis |
| Md. Shahriare Satu, Md. Hasnat Parvez, Shamim-Al-Mamun | Review of Integrated Applications with AIML-based Chatbot | 1st International Conference on Computer & Information Engineering | Sentence Splitting, Normalization, Stemming, Lemmatization, Named Entity Recognition |
| S.J. du Preez, Manoj Lall, S. Sinha | An Intelligent Web-Based Voice Chatbot | EUROCON 2009, IEEE EUROCON '09 | ALICE-bot Engine, Expert System, Voice Processing |

# CHAPTER-3
# RESEARCH GAPS OF EXISTING METHODS

Despite significant progress, there are still areas in need of study and improvement in the field of machine learning-based chatbot.

Understanding these gaps is crucial to developing prediction models that are more reliable and accurate. Some unfulfilled gaps and existing methods in the field of chatbot development using machine learning

are as follows:

**Limited Variability within the Sets**:

1.Research Gap: Many of the datasets currently used for the training of the chatbot lack diversity in terms of demographics, lifestyle, and geographic representation.

2.Existing methods: Researchers have used popular datasets. To increase the generalizability of the model, more diverse datasets from different populations enhance models.

Choosing Features and Their Significance:

1.Research Gap: It's still difficult to determine which features are most important. Comprehending the attributes that substantially contribute to precise forecasting is crucial for both clinical applicability and model interpretability.

2.Current Approaches: Recursive Feature Elimination (RFE), feature importance derived from tree-based models, and domain knowledge- driven feature selection are a few of the feature selection strategies that have been used. But more reliable and automated are required.

3.Unbalanced Collections:

4.Research Gap: Biased models can result from imbalanced datasets, where one class is noticeably underrepresented.

5.Current Methods: To address class imbalance, methods such as under sampling, oversampling, and the use of synthetic data (SMOTE) have been used. Nevertheless, more research is required to find the best strategy for imbalanced datasets related.

Unbalanced Collections:

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Model Interpretability:

1.Research Gap: Interpretability issues prevent many machine learning models—especially complex ones like methods—from being widely used in clinical settings.

2.Current Approaches:Interpretability strategies have been investigated, including model-agnostic approaches, LIME, and SHAP values. Nonetheless, creating models that strike a balance between interpretability and complexity is a never-ending task.

Temporal Elements:

1. Current Techniques: To capture temporal trends, time series analysis techniques and longitudinal studies have been investigated.

# CHAPTER-4
# PROPOSED METHODOLOGY

Most crucial part of modeling a system is capturing its dynamic behavior. The system's operating or running behavior is referred to as dynamic behavior. Dynamic behavior is more significant than static behavior when modeling a system; static behavior alone is insufficient. Tocreate the interaction, there should be a few internal or external components.Actors are these external and internal agents. Actors, use cases, and their relationships are all shown in use case diagrams.The application's system or subsystem is modeled by the diagram.

Modeling real-world objects and systems, makes use of use case diagrams. Planned requirements, hardware design validation, software product testing and debugging, online help reference creation, and customer service-oriented tasks are examples of system objectives. In a product sales setting, for instance, use cases can include client relations, payment processing, ordering items, and catalog updating.

## 4.1Problem Definition and Data Collection:

Give specifics about the goals, intended audience, and project boundaries for chatbot development.

Determine the sources of pertinent data: Gather a variety of datasets with data on lifestyle, factors.

## 4.2Data Preprocessing:

Managing missing data involves either removing or imputed values from the dataset.

guarantee consistency Code variables that are categorical: Utilize methods such encoding to translate categorical variables into representations

## 4.3. Exploratory Data Analysis (EDA):

To comprehend feature distribution, spot correlations, and learn more about possible relationships between variables, do exploratory data analysis (EDA).

To identify patterns and trends in data, visualize it with charts.

### 4.4 Feature Engineering:

Choose pertinent features: Determine which variables have the greatest influence by using features' importance, domain expertise, or feature selection methods.Make additional features if needed: Extrapolate features improve the model's ability to predict the future.

### 4.5 Model selection

Choose a variety of machine learning models: Analyze many models, including Support Vector Machines (SVM), Logistic Regression, K-Nearest Neighbors (KNN), Random Forest, Naïve Bayes, and XG Boost.

Determine if deep learning models are suitable. Examine neural networks, especially for handling complex data relationship structures.Apply ensemble approaches in your work: Combining many models will improve performance.

### 4.6 Training and validation

Separate the dataset into sets for validation and training. A portion of the data should be set aside for the model's validation and training.Use cross-validation in your work: Use techniques like k-fold cross-validation to assess model performance in a trustworthy manner.

### 4.7 Hyperparameter Tuning:

To improve model performance, optimize model parameters with methods like grid search or random search.

### 4.8 Model Evaluation:

Evaluate models using appropriate metrics: Consider recall, accuracy, precision, F1-score, and the area under the Receiver Operating Characteristic (ROC) curve. The sensitivity of the model to imbalances in the dataset can be assessed using confusion matrices.

### 4.9 Interpretability and Explain ability:

Use these techniques to decipher model predictions: Utilize methods such as LIME or SHAP values to describe the model's decision- making process.Models with interpretability for clinical acceptance should be given priority.

**4.10 Validation and Deployment:**

Test the model using a different dataset: Evaluate the model's ability to be generalized.

Use the model in an actual clinical setting if it performs well. Establish a mechanism for ongoing model monitoring and updating so that it can adjust to modifications in patient demographics or data distribution.

**4.11Documentation:**

Record every step of the process, including the data preprocessing stages, the reasoning behind feature selection, the model and the performance metrics.

# CHAPTER-5

## OBJECTIVES

Based on the research gaps identified in the literature survey, here are four focused objectives for further investigation:

1.Real-Time Responsiveness Enhancement:

❖Rationale: Address the observed delays in traditional ticketing systems and FAQ sections.

❖Objective: Develop and implement strategies to enhance real-time responsiveness in customer support systems, ensuring swift resolution of user queries and issues.

2.Advanced Natural Language Processing (NLP) Integration:

❖Rationale: Acknowledge challenges in user articulation and precision in queries.

❖Objective: Explore and implement advanced NLP techniques to improve the system's understanding of user intent, making it more proficient in interpreting and responding to diverse queries

.

3.Optimization of Human-AI Collaboration:

❖Rationale: Recognize the effectiveness of human-operated live chat in complex query resolution.

❖Objective: Investigate methods to optimize the collaboration between human operators and AI systems, aiming for seamless integration that maximizes efficiency and user satisfaction.

4.Continuous Learning Mechanisms Implementation:

❖Rationale: Acknowledge the evolving nature of customer queries and expectations.

❖Objective: Develop and implement mechanisms for continuous learning within the

customer support system, allowing it to adapt to emerging patterns, trends, and variations in customer interactions over time.

# CHAPTER-6
# SYSTEM DESIGN & IMPLEMENTATION

## 6.1 Class Diagram :

A static diagram is the class diagram. It depicts an application's static view. The class diagram is used not only to build the executable code of a software application but also to visualize, describe, and record various features of a system.

A class diagram delineates the characteristics and functions of a class together with the limitations placed upon the system. Since class diagrams are the only UML diagrams that can be directly transferred to object-oriented languages, they are frequently employed in the modeling of object-oriented systems.

A collection of classes, interfaces, affiliations, partnerships, and constraints are displayed in a class diagram. Another name for it is a structural diagram.

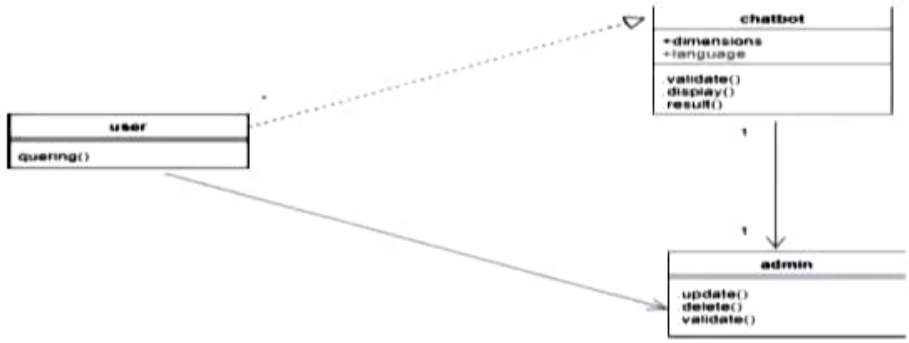


*Fig 6.1 : class diagram for chatbot*

## 6.2 SEQUENCE DIAGRAM NOTATIONS:

Actor In a UML diagram, an actor symbolizes a certain kind of role that it plays in that an actor is never inside the boundaries of thesystem that the UML diagram is intended to represent.


*Fig 6.2 : Notation symbol for actor*

Actors are used to portray a variety of roles, such as those of external topics and human users. A stick person notation is used in UML diagrams to represent actors. A sequence diagram can have several actors.
Lifelines: In a sequence diagram, a lifeline is a named element that shows a specific participant. In essence, a lifeline represents each incident in a sequence diagram. In a sequence diagram, the elements that are lifeline are found at the top. The format that is typical in UML for naming a lifeline is as follows: Name of Instance: Name of Class

Messages: Messages are used to show how objects communicate with one another. On the lifeline, the messages are displayed in chronological sequence. We employ arrows to symbolize messages. A sequence diagram's lifelines and signals come from its core.

Generally speaking, messages fall into the following categories: A flowchart featuring many messages kinds

Synchronous messages: Before the conversation can continue, a synchronous message awaits a response. The message sender waits for the recipient to finish digesting the message. The caller doesn't hang up until it receives a reply message indicating that the preceding message has been processed by the recipient. In object-oriented programming, a lot of the calls are made synchronously. A synchronous message is represented by a solid arrow head.

Messages that are sent asynchronously do not wait for a response from the recipient. Whether or not the recipient processes the prior communication, the engagement continues. An asynchronous message is represented as a lined arrow head.

Create message: In the sequence diagram, a new object is instantiated using a Create message. There are times when creating an object is necessary for a certain message call.

Delete Message: To remove an object, we utilize a Delete Message. We utilize the Delete Message symbol when an object is destroyed or deallocated within the system. It eliminates the object's existence within the system. It is symbolized by an arrow that ends in an x. For instance, in the following situation, the order class object may be deleted by the user upon receiving the order.
Self Message: There may be situations in which an object needs to communicate with itself. These communications are referred to as self- messages and are symbolized by a U-shaped arrow.


*Fig 6.3:E-R diagram for chatbot*

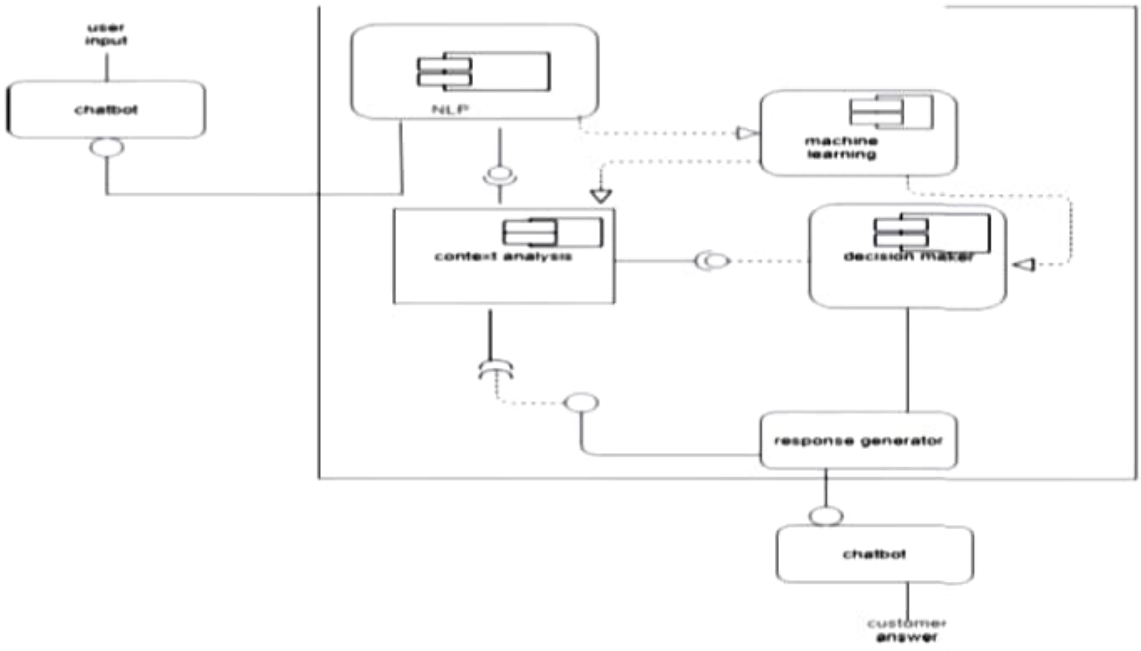


*Fig 6.4:E-R diagram for chatbot*

# SYSTEM REQUIREMENTS:
# REQUIREMENTS

## ANALYSIS HARDWARE REQUIREMENTS

processor Intel dual core and above

- Clock speed .0 GHz
- RAM size 12 MB
- Hard Disk capacity 00 GB
- Monitor type 5 inch color monitor

## SOFTWARE REQUIREMENTS

- Operating System Windows XP, Windows 7, Windows 8,Windows 10
- Application HTML, CSS, JS, Python, Flask
- Browser Google chrome, Firefox
- Database Google Firestore.
- Documentation MS-Office

# CHAPTER-8

# OUTCOMES

**1.Real-Time Responsiveness Enhancement:**

❖Outcome: Implementation of real-time responsiveness strategies results in a substantial reduction in query resolution times, ensuring timely and efficient support for users.

**2 Advanced Natural Language Processing (NLP) Integration:**

❖Outcome: Successful integration of advanced NLP techniques leads to a significant improvement in the system's ability to accurately comprehend and respond to diverse user queries, enhancing overall user satisfaction.

**3.Optimization of Human-AI Collaboration:**

❖Outcome:Investigation and implementation of collaboration optimization methods result in a harmonious blend of human expertise and AI capabilities,leading to more effective and user- friendly query resolution.

**4.Continuous Learning Mechanisms Implementation:**

❖Outcome Development and implementation of continuous learning mechanisms empower the customer support system to adapt dynamically to changing customer queries and expectations, ensuring long-term relevance.

**5.Enhanced User Satisfaction:**

❖Outcome: The cumulative impact of real-time responsiveness, improved language understanding, optimized collaboration, and continuous learning mechanisms results in heightened user satisfaction, fostering a positive user experience.

**6.Reduced Query Resolution Delays:**

❖Outcome:The real-time responsiveness enhancement contributes to a significant reduction in query resolution delays, addressing a crucial pain point observed in traditional ticketing systems and FAQ sections.

**7.Improved Accuracy in Query Interpretation:**

❖Outcome: The implementation of advanced NLP techniques leads to enhanced accuracy in query interpretation,minimizing instances of miscommunication and ensuring more precise responses.

**8.Efficient Complex Query Resolution:**

❖Outcome: The optimization of human-AI collaboration enables more efficient resolution of complex queries, leveraging the strengths of both human operators and AI components. **9.Adaptability to Evolving Customer Needs:**

❖ Outcome:Continuous learning mechanisms ensure the system's adaptability to evolving customer needs, allowing it to stay ahead of emerging patterns,trends,and variations in customer interactions.

**10.Increased System Efficiency:**

❖Outcome:The combination of optimized collaboration and continuous learning mechanisms results in increased system efficiency,streamlining operations and enhancing resource utilization.

**11.Dynamic System Adaptation:**

❖Outcome:The implementation of continuous learning mechanisms ensures the system's dynamic adaptation to changing circumstances, maintaining its relevance in the ever-evolving landscape of customer support.

**12.Positive Brand Perception:**

❖Outcome: The overall improvement in user satisfaction, reduced query resolution delays, and efficient resolution of complex queries contribute to apositive brand perception, strengthening the brand- customer relationship.

# CHAPTER-9
# RESULTS AND DISCUSSIONS

## TESTING

A test case is a detailed description of the inputs, limitations, methodology, and anticipated outcomes that specify a single test to be carried out in order to accomplish a specific goal related to software testing, like verifying a specific program route or confirming compliance with a requirement.

Testing that is deliberate rather than chaotic is supported by test cases. To provide the required coverage of the software under test, a battery of test cases can be constructed. Regression testing can be done consistently and successfully with the help of formally described test cases, which enable the same tests to be performed repeatedly against updated software versions.

A set of parameters or conditions that a tester will use to assess whether a system is functioning properly or meeting requirements is another definition of a test case. Finding issues with specifications or application design can also be aided by the process of creating test cases.

| Input | Actual output | Expected output | Result |
|---|---|---|---|
| Greeting messages | Bot greets user | Bot greets user | Accepted |
| Ask for movies | Gives results based on place | Gives results based on place | Accepted |
| Enters irrelevant query | Displays error message | Expects answer for the entered query | Rejected |
| User willing to watch movie | Bot asks to enter place | Get answer to that query as to enter place | Accepted |
| User enters the location | Bot asks for movie name | Askes to enter the movie name | Accepted |

Testcases 9.1

# CHAPTER-10
# CONCLUSION

A chatbot is a growing trend that improves customer satisfaction at a minimal cost, thereby increasing business efficacy. Developing a basic chatbot is not as difficult as creating a complicated one, although developers still need to take high-level human language purpose into account as well as reliability, scalability, and adaptability concerns. In summary, chatbots are a rapidly evolving ecosystem, and as time goes on, new capabilities are introduced to the current platform. It offers a productive and successful means of communication. Our project provides information about movies who are searching for the details in different websites.

Our chatbot project with machine learning is making promising strides in developing a sophisticated customer support solution. We're currently working on creating a responsive front end, training the machine learning model, and integrating the back end, following a strategic timeline for refinement. While the full impact is yet to be realized, we're on track to redefine customer engagement with seamless collaboration between human and AI, improved responsiveness, and continuous learning. The ongoing development signifies our commitment to innovation and excellence in meeting evolving customer needs. Exciting times lie ahead in enhancing user experiences through our chatbot solution

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https://www.analyticsvidhya.com/blog/2017/09/naive-bayes- explain

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# APPENDIX-A
# PSUEDOCODE

## BACK END CODE:

```
# importing the required modules
from chatterbot import ChatBot
from chatterbot.trainers import ListTrainer
from chatterbot.trainers import ChatterBotCorpusTrainer

    # creating a
 chatbot myBot =
     ChatBot(
  name='Sakura',
   read_only=True
             ,
    logic_adapters=
            [
      'chatterbot.logic.MathematicalEvaluation
      ', 'chatterbot.logic.BestMatch'
   ]
)

# training the
chatbot small_convo
= [
   'Hi there!',
   'Hi',
   'How do you do?',
   'How are you?',
   'I\'m cool.',
   'Always cool.',
   'I\'m Okay',
   'Glad to hear
   that.', I\'m fine',
   'I feel awesome',
   'Excellent, glad to hear that.',
   'Not so good',
   'Sorry to hear that.',
   'What\'s your name?',
   ' I\'m Sakura. Ask me a math question, please.'
]

math_convo_1 = [
   'Pythagorean theorem',
   'a squared plus b squared equals c squared.'
]
```

```
math_convo_2 = [
   'Law of Cosines',
   'c**2 = a**2 + b**2 - 2*a*b*cos(gamma)'
]

# using the ListTrainer class
list_trainee = ListTrainer(myBot)
for i in (small_convo, math_convo_1, math_convo_2):
   list_trainee.train(i)

# using the ChatterBotCorpusTrainer class
corpus_trainee = ChatterBotCorpusTrainer(myBot)
corpus_trainee.train('chatterbot.corpus.english')
```

# APPENDIX B
# SCREENSHOTS


Fig B.1: Homepage

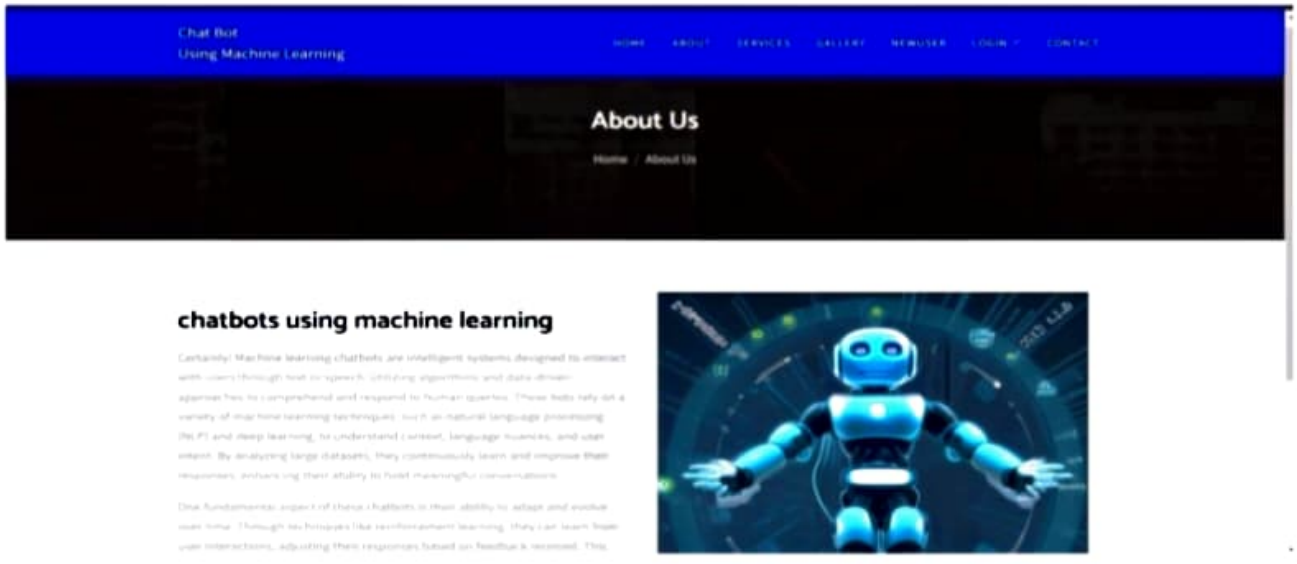



Fig B.2 :Aboutus

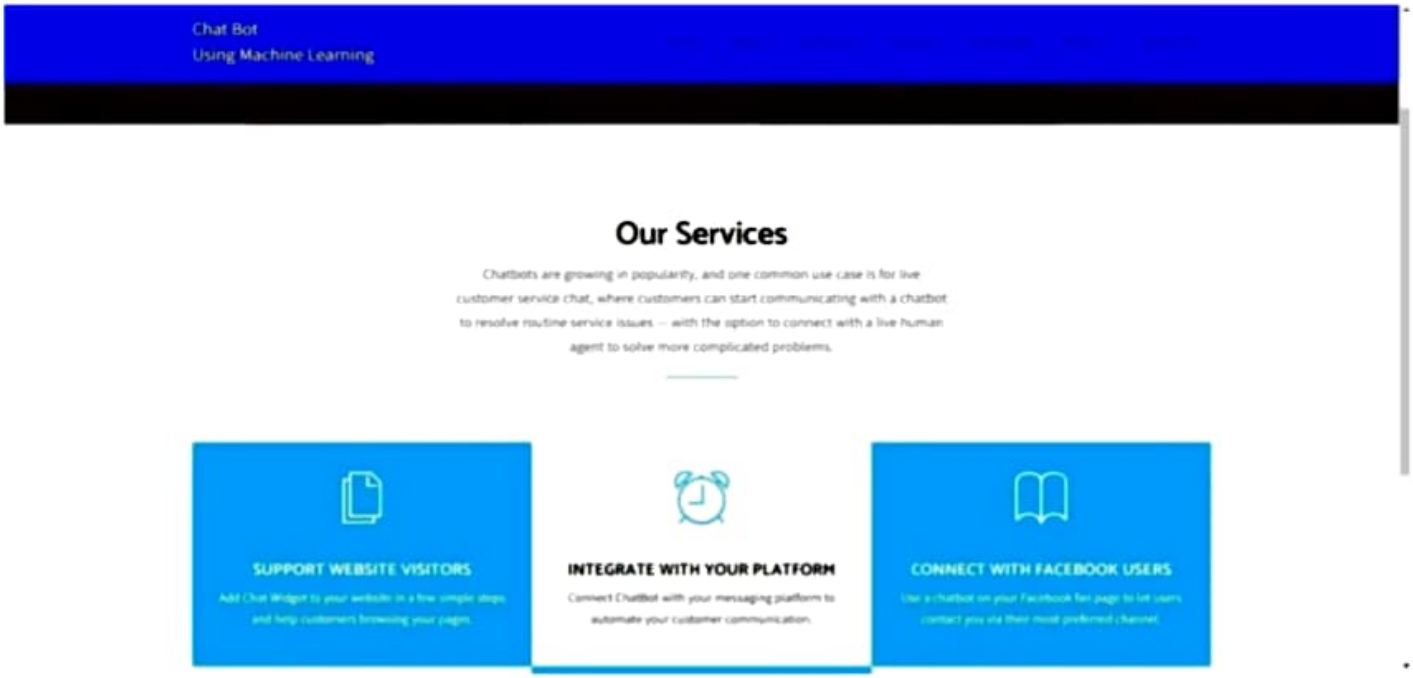



Fig B.3: services


**Fig B.4 :user login**

**FigB.5 :Admin login page**

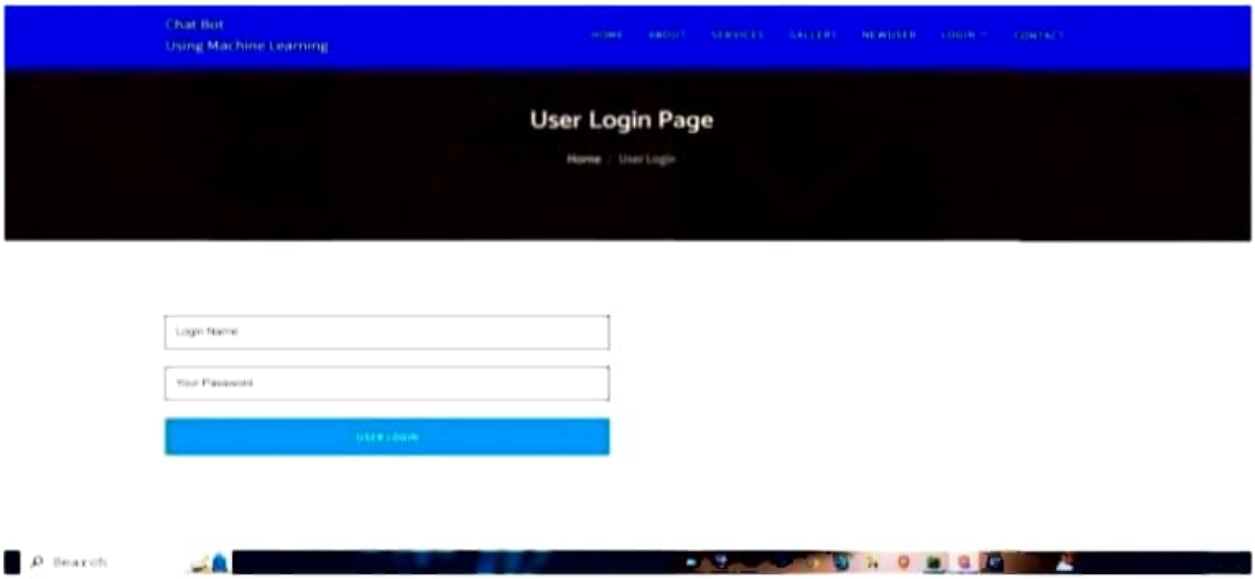



**Fig B.6 :User login page**

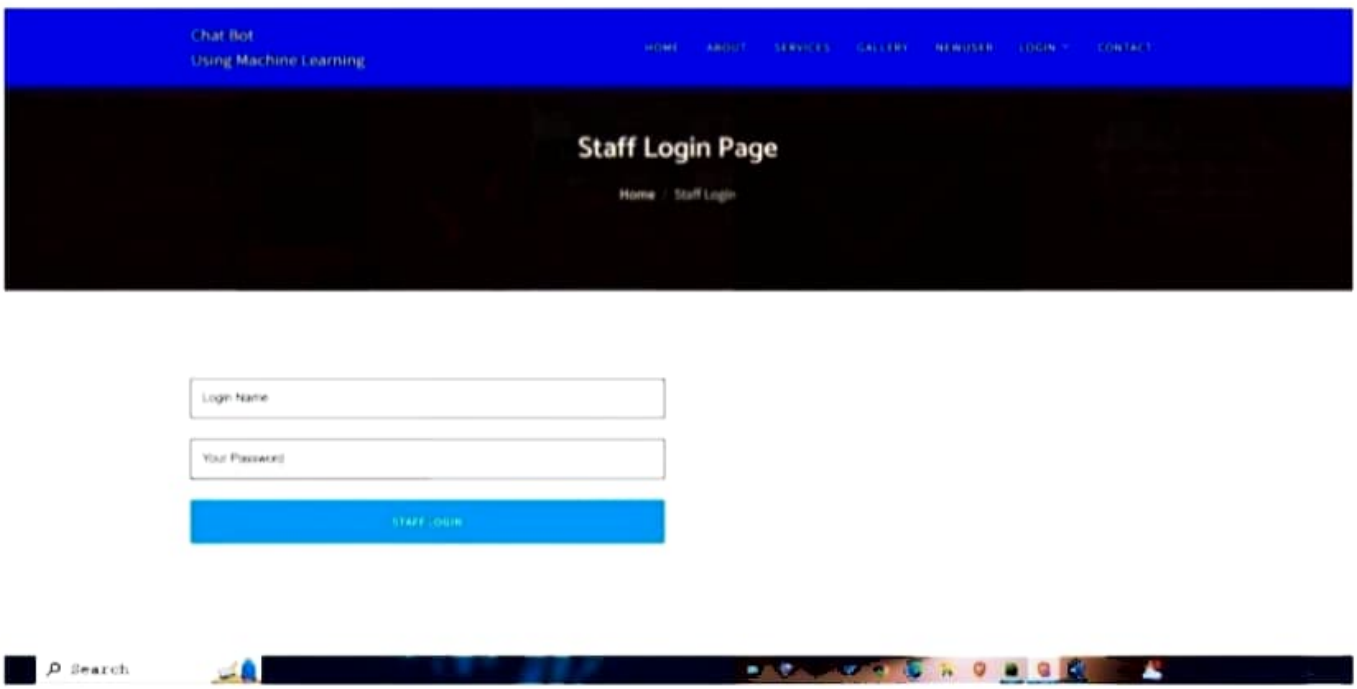



Fig B.7:Staff login page

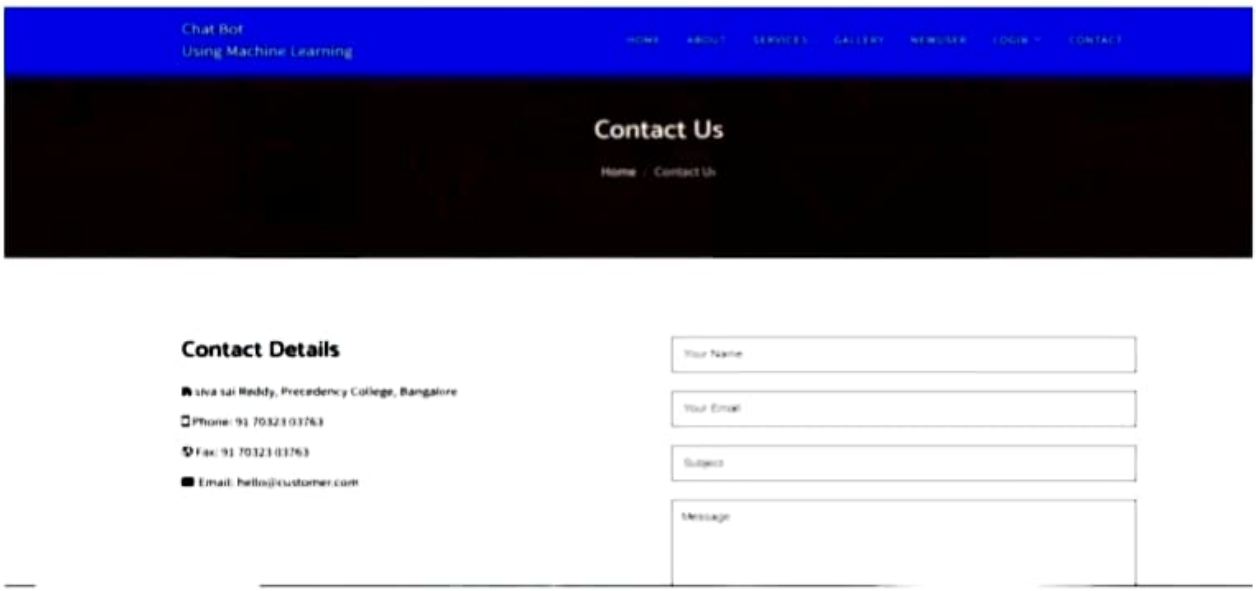



Fig B.8 :Contact page

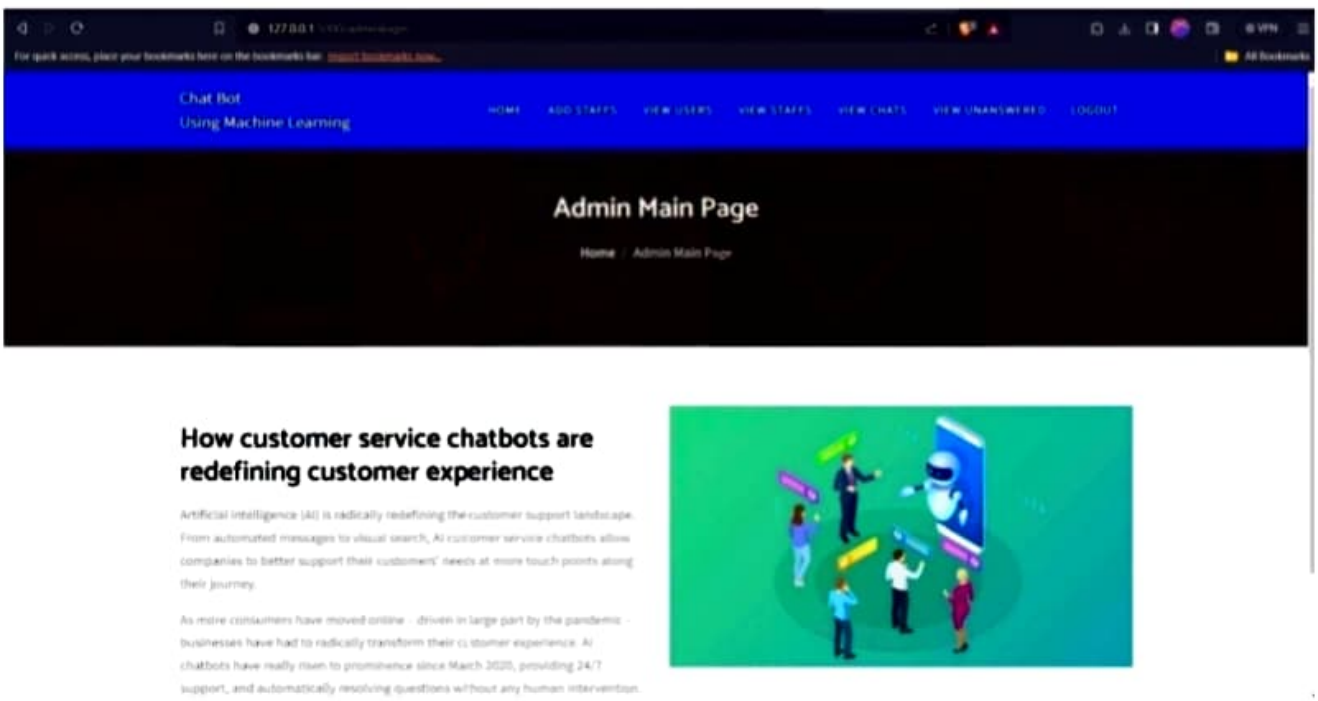


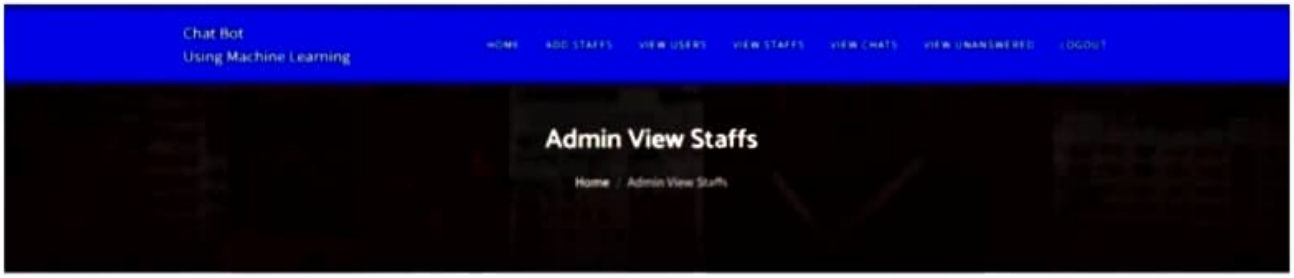

Fig B. 9:Admin main page


Fig B. 10.Add new staff


**User View Users Page**

| User Id | First Name | Last Name | EmailId | Phone Number | Address |
|---|---|---|---|---|---|
| 2262 | y | naveen | mahendranathchowdary2003@gmail.com | 9849821821 | @4dfyh |
| 3120 | reddy | nani | chethanreddy118@gmail.com | 7032303763 | 90/1, Ananthapura St, Ferrar Nagar, Attur Layout, Anantapuram, Bengaluru, Karnataka 560064 |

Fig B.11:Admin view user




**User View Staff Page**

| User Id | First Name | Last Name | Emailid | Phone Number | Address |
|---|---|---|---|---|---|

Fig B12:Admin view Staff


**Admin View Chats Page**

| Chat It | User Id | Question | Answer | DateTime |
|---|---|---|---|---|
| 4384 | 2262 | google | To search the internet using Google. | 26/12/2023 15:17:00 |
| 5869 | 2262 | google | To search the internet using Google. | 26/12/2023 14:53:22 |
| 6931 | 2262 | narendra | is a topper | 26/12/2023 14:53:37 |
| 8730 | 2262 | pole | To bring two objects, ideas, or people together. | 26/12/2023 15:17:40 |

Fig B.13 :Admin view chats


Fig B.14: user view profile

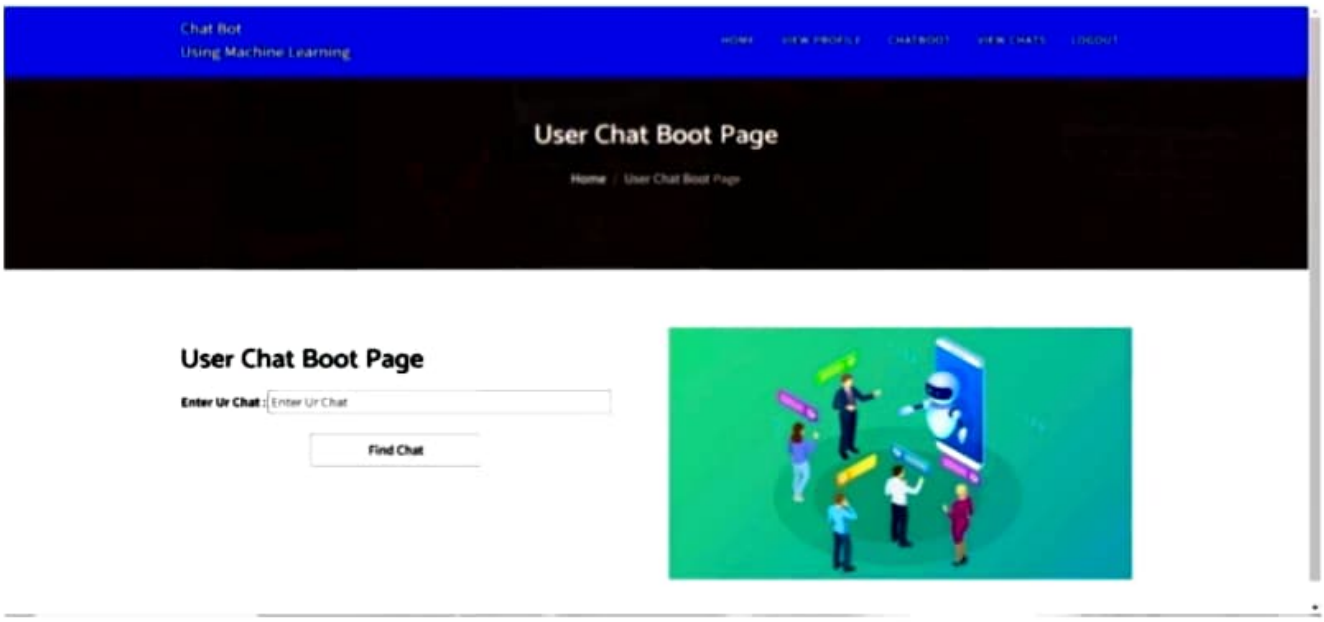



Fig B.15: Enter chatbot


**User View Chats Page**

| Chat It | User Id | Question | Answer | DateTime |
|---|---|---|---|---|
| 8866 | 3120 | google | To search the internet using Google. | 07/01/2024 22:31:00 |

Fig B.16 : User view chats

# APPENDIX-C
# ENCLOSURES

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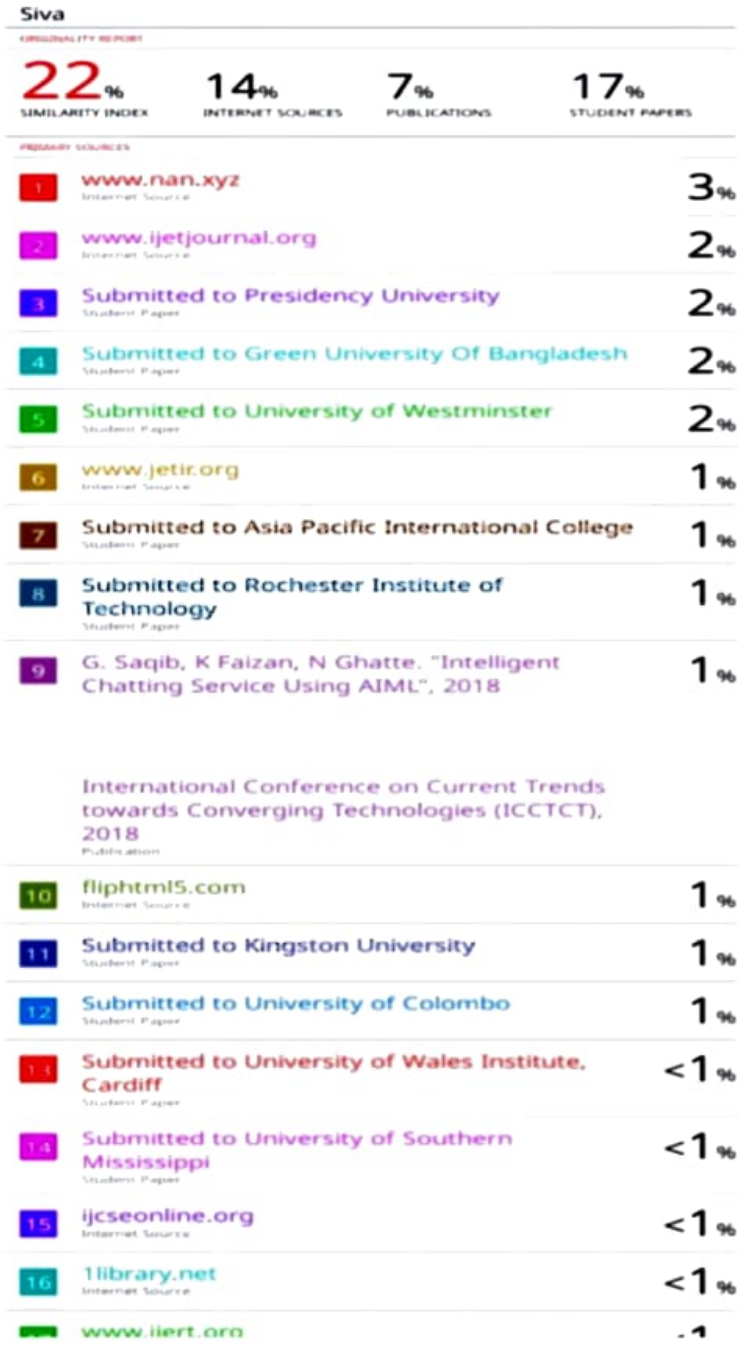

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# SUSTAINABLE DEVELOPMENT GOALS:


Our project is mapped to SDG09: **INDUSTRIAL INNOVATION AND INFRASTRUCTURE**

Building a chatbot for Sustainable Development Goals (SDGs) in the context of industrial innovation involves creating a system that can provide information, answer queries, and promote awareness about sustainable practices in the industrial sector.