CAPSTONE PROJECT

ADMISSION GUIDANCE BOT ON IBM CLOUD USING WATSONX ASSISTANT

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OUTLINE

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PROBLEM STATEMENT

- B.Tech admissions are often plagued by inefficiencies. Prospective students face long wait times, inconsistent information, and limited accessibility to admissions staff. Traditional methods like phone calls and emails are time-consuming and may not provide timely responses. To address these issues, a B.Tech admissions chatbot can provide 24/7 support, answer common queries, and guide students through the complex application process. By automating routine tasks and providing personalized assistance, the chatbot can significantly improve the overall admissions experience.

PROPOSED SOLUTION

- The proposed system aims to address the challenge of predicting the required bike count at each hour to ensure a stable supply of rental bikes. This involves leveraging data analytics and machine learning techniques to forecast demand patterns accurately. The solution will consist of the following components:
- Data Collection:
  - Gather historical data on bike rentals, including time, date, location, and other relevant factors.
  - Utilize real-time data sources, such as weather conditions, events, and holidays, to enhance prediction accuracy.
- Data Preprocessing:
  - Clean and preprocess the collected data to handle missing values, outliers, and inconsistencies.
  - Feature engineering to extract relevant features from the data that might impact bike demand.
- Machine Learning Algorithm:
  - Implement a machine learning algorithm, such as a time-series forecasting model (e.g., ARIMA, SARIMA, or LSTM), to predict bike counts based on historical patterns.
  - Consider incorporating other factors like weather conditions, day of the week, and special events to improve prediction accuracy.
- Deployment:
  - Develop a user-friendly interface or application that provides real-time predictions for bike counts at different hours.
  - Deploy the solution on a scalable and reliable platform, considering factors like server infrastructure, response time, and user accessibility.
- Evaluation:
  - Assess the model's performance using appropriate metrics such as Mean Absolute Error (MAE), Root Mean Squared Error (RMSE), or other relevant metrics.
  - Fine-tune the model based on feedback and continuous monitoring of prediction accuracy.
  - Result:

SYSTEM APPROACH

The "System Approach" section outlines the overall strategy and methodology for developing and implementing the rental bike prediction system. Here's a suggested structure for this section:

- System requirements : 16.0 GB , 64-bit operating system, x64-based processor
- Library required to build the model

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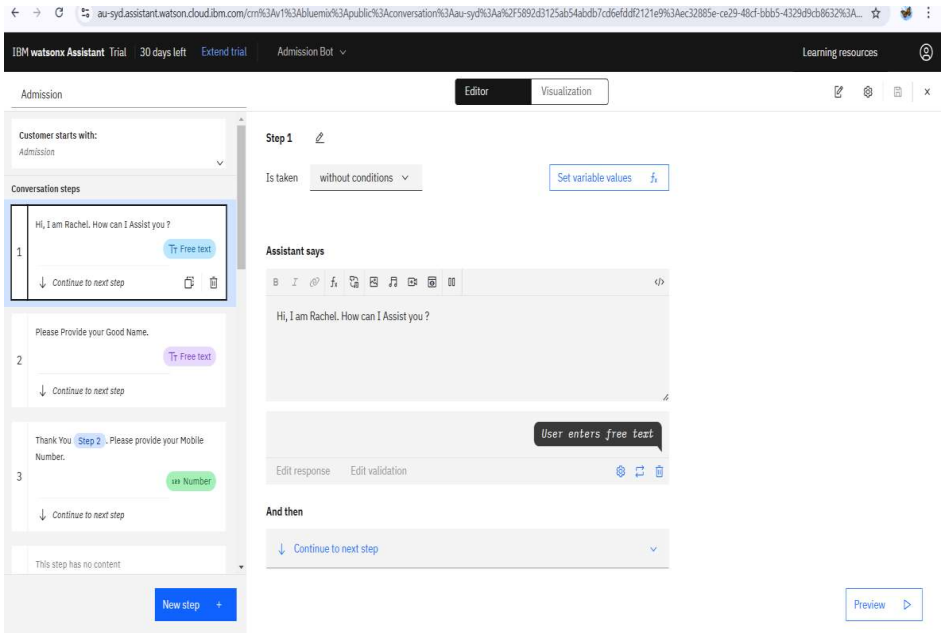
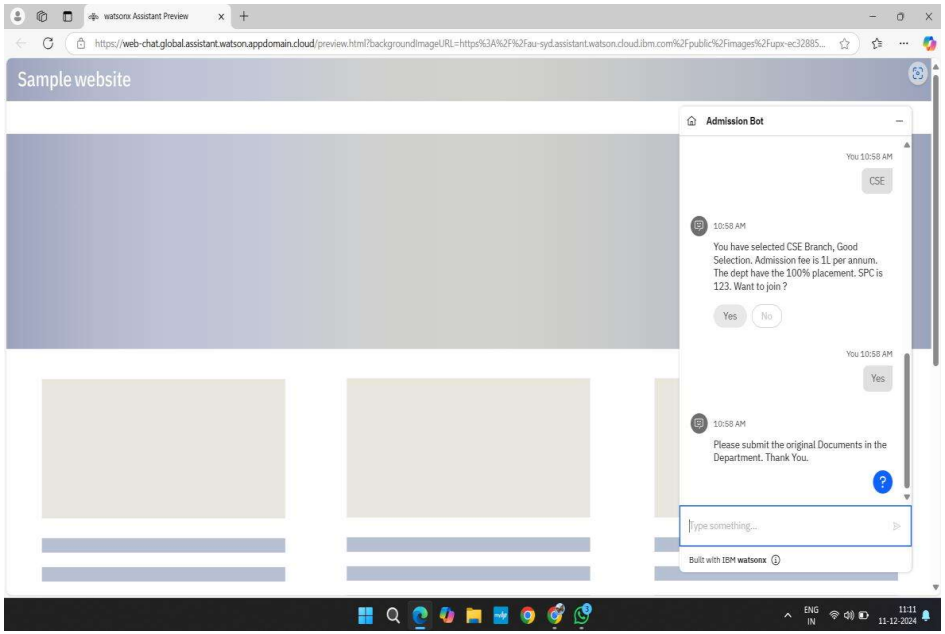
ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the machine learning algorithm chosen for predicting bike counts. Here's an example structure for this section:
- **Algorithm Selection:**
  - Provide a brief overview of the chosen algorithm (e.g., time-series forecasting model, like ARIMA or LSTM) and justify its selection based on the problem statement and data characteristics.
- **Data Input:**
  - Specify the input features used by the algorithm, such as historical bike rental data, weather conditions, day of the week, and any other relevant factors.
- **Training Process:**
  - Explain how the algorithm is trained using historical data. Highlight any specific considerations or techniques employed, such as cross-validation or hyperparameter tuning.
- **Prediction Process:**
  - Detail how the trained algorithm makes predictions for future bike counts. Discuss any real-time data inputs considered during the prediction phase.

RESULT





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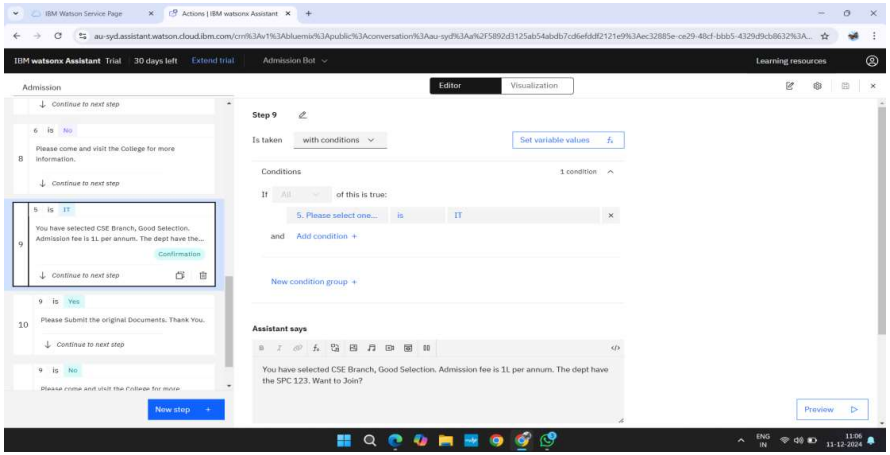

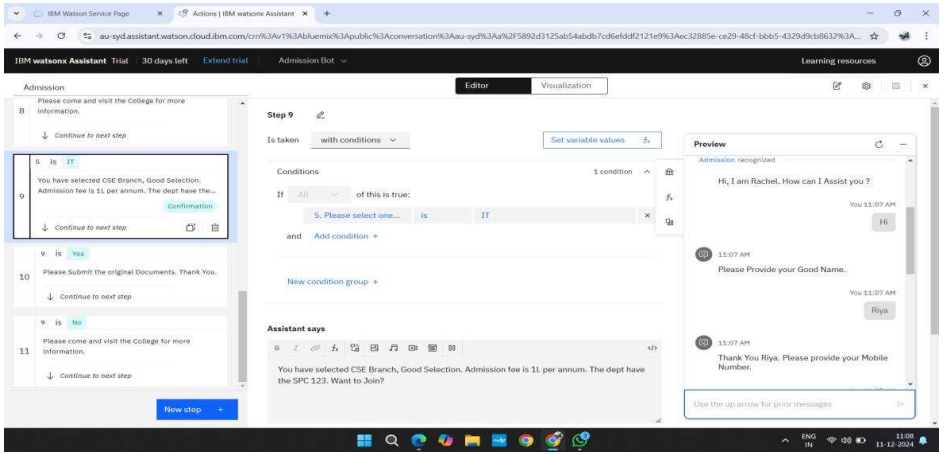

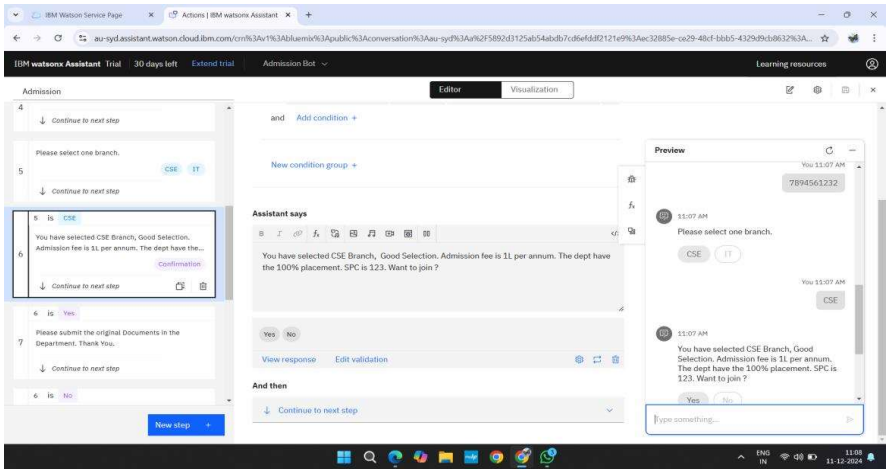

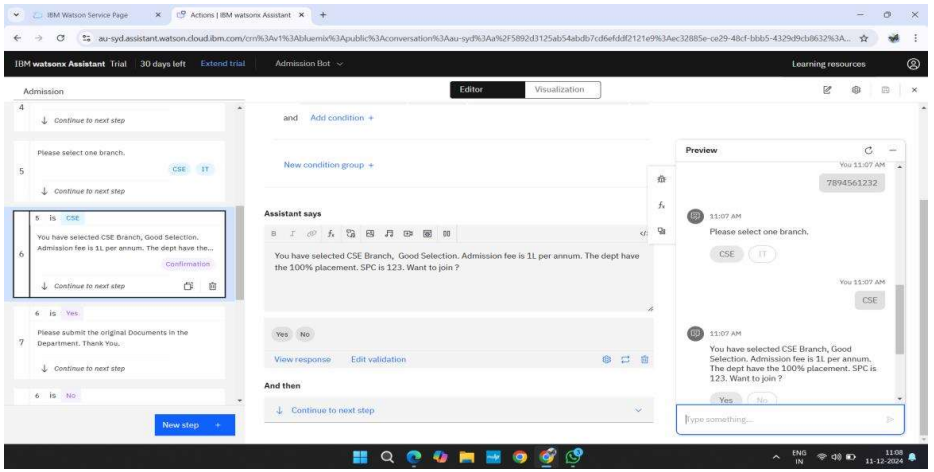

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CONCLUSION

- In conclusion, our B.Tech Admissions Chatbot aims to revolutionize the admissions process. It offers 24/7 support, answers queries efficiently, and guides students through the application process. By leveraging AI and NLP, the chatbot enhances student experience, reduces administrative burden, and improves overall efficiency. It's a step towards a more streamlined and accessible admissions process.

FUTURE SCOPE

- The B.Tech Admissions Chatbot holds immense potential for future development. By integrating advanced AI, voice assistants, and real-time document verification, we can further streamline the admissions process. Sentiment analysis can enhance user experience, while multilingual support and VR tours can cater to a diverse student population. Predictive analytics can optimize marketing efforts, making the chatbot a powerful tool for attracting and enrolling top talent.

REFERENCES

- I specifically used the Watsonx Assistant, for the Admission ChatBot, here are the relevant references for IBM Watson Assisstant.
- IBM Watsonx Assistant
- IBM Cloud Documentation
- IBM Research

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THANK YOU

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