
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

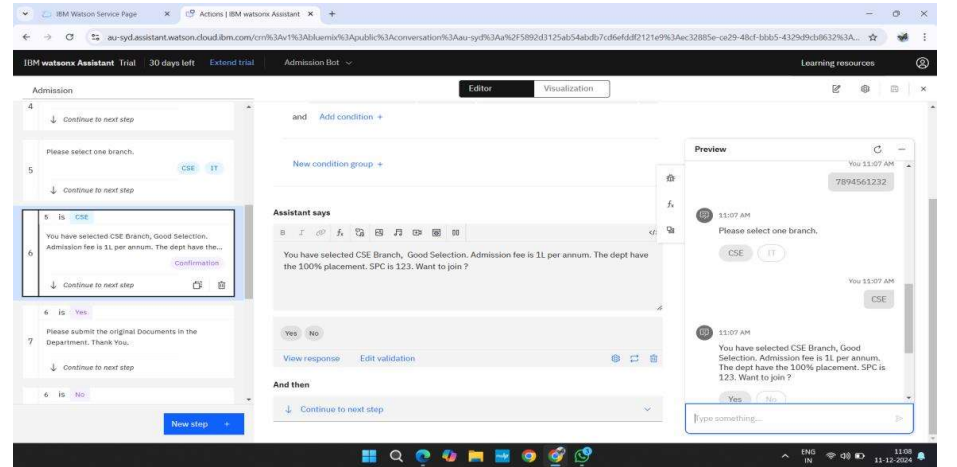
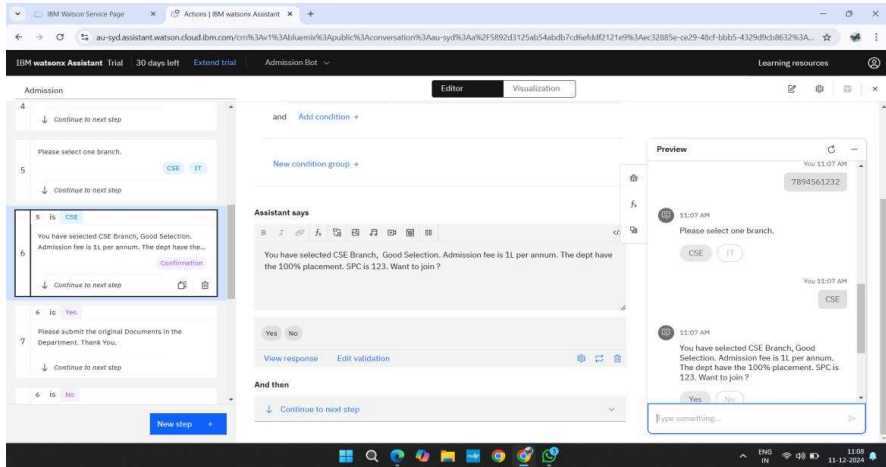
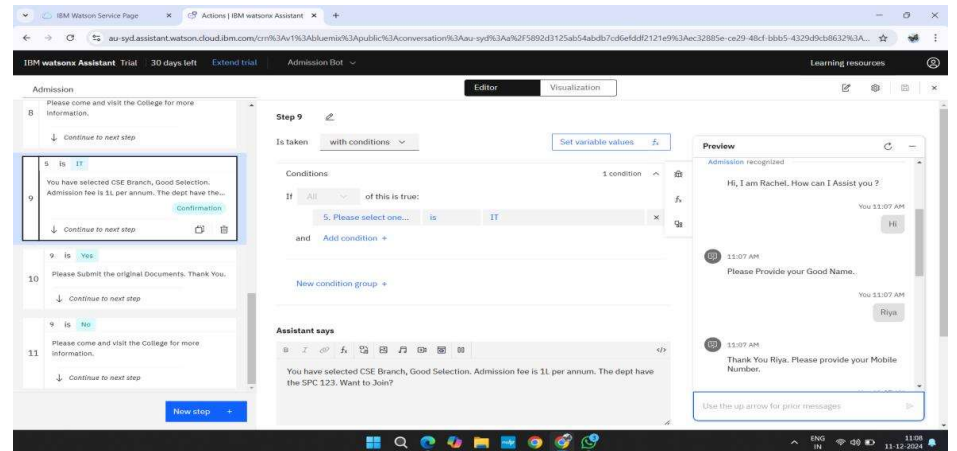
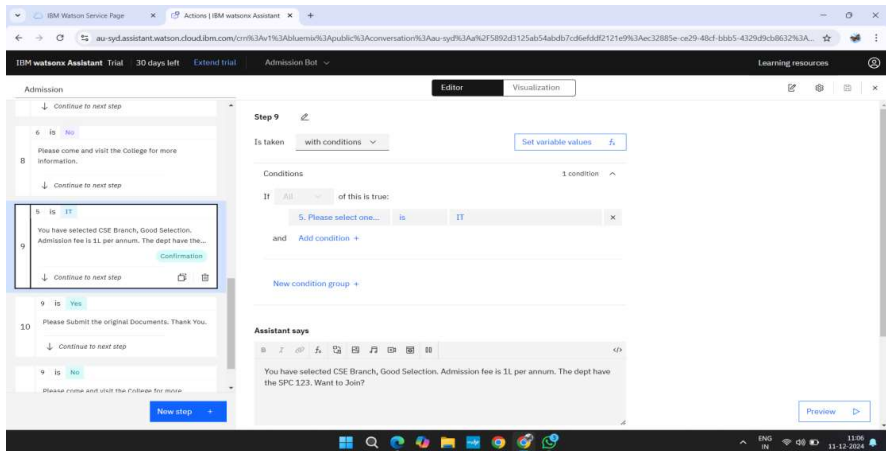
ALGORITHM & DEPLOYMENT

- 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

The screenshot displays the IBM Watson Assistant Editor interface. The top navigation bar includes 'IBM watsonx Assistant', 'Trial', '30 days left', 'Extend trial', 'Admission Bot', and 'Learning resources'. The main workspace is divided into two tabs: 'Editor' and 'Visualization'. The 'Editor' tab is active, showing a conversation flow for 'Step 1' under the 'Admission' topic. The flow starts with a customer message: 'Hi, I am Rachel. How can I Assist you?'. The assistant responds with the same text. The flow then branches into three steps: Step 1 (Customer provides name), Step 2 (Customer provides mobile number), and Step 3 (Customer provides document). Each step has a 'Continue to next step' action. A 'Preview' button is located at the bottom right of the editor.

The screenshot displays the IBM Watson Assistant Preview interface. The top navigation bar includes 'watsonx Assistant Preview' and a URL. The main workspace is divided into two tabs: 'Sample website' and 'Admission Bot'. The 'Sample website' tab is active, showing a chatbot interface with a sample website background. The chatbot is titled 'Admission Bot' and shows a conversation flow. The first message is 'Hi, I am Rachel. How can I Assist you?'. The assistant responds with 'You have selected CSE Branch, Good Selection. Admission fee is 1L per annum. The dept have the 100% placement. SPC is 123. Want to join?'. The user responds with 'Yes'. The assistant then says 'Please submit the original Documents in the Department. Thank You.' The chatbot interface includes a 'Type something...' input field and a 'Send' button. The bottom status bar shows 'Built with IBM watsonx'.



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 Assistant.
- IBM Watsonx Assistant
- IBM Cloud Documentation
- IBM Research

THANK YOU