**Project Design Phase-II**
**Solution Architecture**

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| Date | 28 October 2023 |
| Team ID | Team-592779 |
| Project Name | Machine Learning Model For Occupancy Rates And Demand In The Hospitality Industry |
| Maximum Marks | 4 Marks |

**Solution Architecture:**
The solution comprises a data collection module, preprocessing pipeline, machine learning model (Regression), and a results visualization component. It integrates seamlessly with hotel databases and third-party event data sources. The system is characterized by real-time data processing, adaptability to changing trends, high accuracy, and scalability to handle large volumes of data.

- **Requirements Gathering**: Understand specific needs of hotels and customers.
- **Data Collection and Preprocessing**: Gather historical data and external factors, clean and preprocess data.
- **Model Development**: Choose appropriate algorithms, train the model using historical data.
- **Integration**: Integrate the model with hotel databases and external event data sources.
- **User Interface Development**: Create a user-friendly dashboard for users.
- **Testing and Validation**: Test the system with real-time and historical data to validate accuracy.
- **Deployment**: Deploy the solution on cloud platforms for scalability.
- **Maintenance and Support**: Provide ongoing support, update algorithms based on new data.

**Solution Architecture Diagram:**