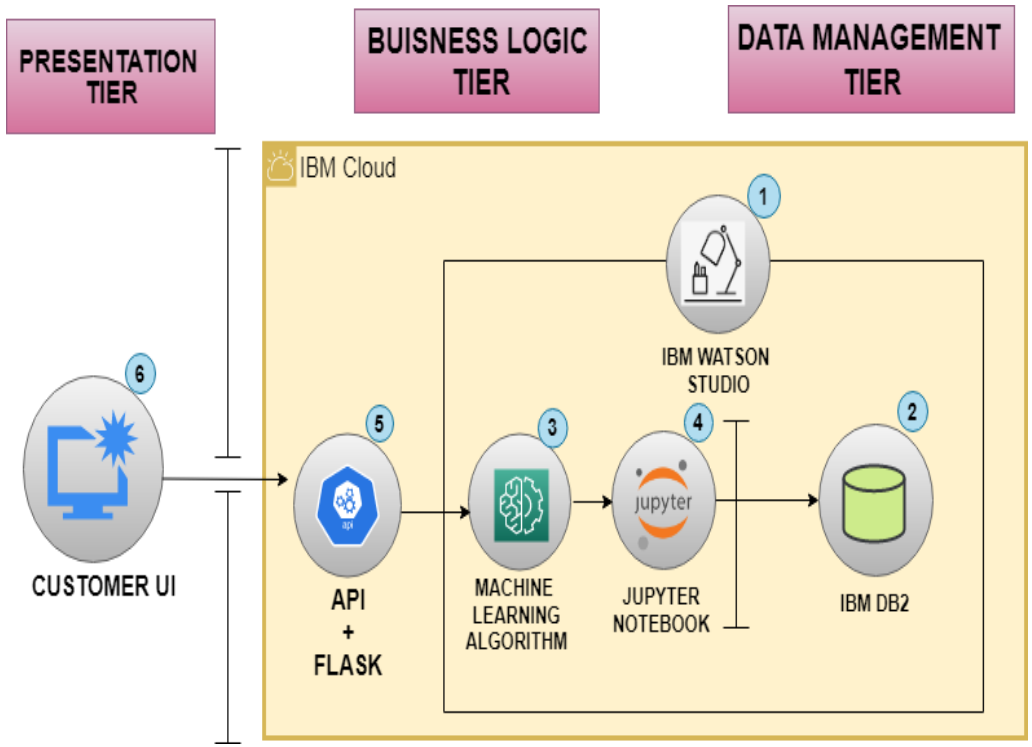
Project Design Phase-II
Technology Stack (Architecture & Stack)

Team ID	**PNT2022TMID23950**
Project Name	**University Admit Eligibility Predictor**

Technical Architecture:



Guidelines:

1. **Create a Watson Studio Project on IBM Cloud.**
2. **IBM DB2 on Cloud Database stores information that will be used for machine learning and predictions.**
3. **Watson Machine Learning helps to create ML models so that new predictions can be run against the model.**
4. **Jupyter notebook uses DB2 on Cloud and Watson Machine Learning to create the machine learning model.**
5. **The model is exposed through API and Flask.**
6. **Customer UI uses the API to send new data for predictions.**

Table-1: Components & Technologies

S. No	Component	Description	Technology
1.	User Interface	• Registration through Form, Gmail, Facebook • Confirmation via Mail • Login and Logout via Mail and Password	HTML, CSS, JavaScript
2.	Platform	• Platform for coding purpose	Jupyter notebook
3.	Data pre-processing	• Removing noisy values in the Dataset • Handling Missing Values	Python libraries (pandas, NumPy, Scikit-learn)
4.	Data visualization	• Graphical representation of student details like chart, graph, plots, etc for easy understanding.	Matplotlib, Seaborn
5.	Database	• Storing Student details	IBM DB2
6.	Cloud Database	• Database Service on Cloud	IBM DB2, IBM Watson cloud
7.	Machine Learning Algorithms	• Purpose of Machine Learning Model	Logistic Regressions, SVM, KNN, Decision tree
8.	Infrastructure (Server / Cloud)	• Cloud server configuration for hosting the website.	IBM cloud

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	▪ To connect front end and backend.	Flask python
2.	Security Implementations	▪ Confidentiality ▪ Integrity ▪ Availability ▪ Updated Software and APIs	Firewall, SSL certification, Encryptions, IAM Controls, Recommending strong passwords, etc
3.	Scalable Architecture	▪ Use of cloud features like resource provisioning in all the 3-tiers	IBM Cloud
4.	Availability	▪ Ensuring anytime and anywhere ▪ Load balancing ▪ Traffic management	IBM Load balancing
5.	Performance	▪ Simple and modular website with fast loading (<5sec) ▪ Moderate page size of html, CSS, JavaScript files ▪ Fully compressed and optimized images and videos	CDN