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

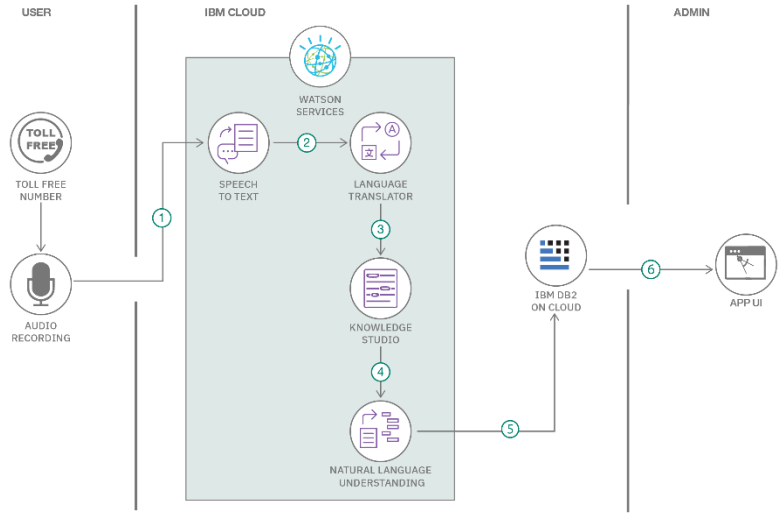
Date	31st October 2023
Team ID	593197
Project Name	PayGuard Plus – An Online Payments Fraud Detector
Maximum Marks	4 Marks
Team Size	3
Member 1 – Team Lead	Akshit Bahl (21BIT0012)
Member 2	Ananya Priya (21BIT0245)
Member 3	Lakshya Mittal (21BIT0076)

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/



Guidelines:
1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript, BootStrap
2.	Backend of application	Back-end server	Python’s Flask module
3.	Application Logic-1	Rendering a HTML template in flask	Render_template library of flask
4.	Application Logic-2	Handling GET and POST requests of HTTP	Request library of flask
5.	Application Logic-3	Handling arrays in the application data	Numpy library of python

6.	Application Logic-4	Login/Signup feature of the website	Flask_login,flask.config of flask
7.	Application logic-5	Manipulating and collecting data from forms	Flask_wtf, WTForms of flask
8.	Application logic-6	Hashing Passwords and storing in database for security feature	Flask_bcrypt library
9.	Database	User data stores in the database under user table	SQLite, flask_sqlalchemy
10.	Machine Learning Model	Purpose of Machine Learning Model	Fraud Detection model: Supervised Machine learning model
11.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	Heroku deployment web hosting: Live server on internet hosting

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	1. Flask 2. Numpy 3. Pandas 4. Matplotlib 5. Seaborn 6. Pickle 7. SQLite 8. Warnings 9. Scikit-learn 10. OS 11. VS Code 12. GIT and GITHUB 13. SQLite Viewer	They are all web development and data preprocessing frameworks
2.	Security Implementations	None	None
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
S.No	**Characteristics**	**Description**	**Technology**
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used