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

Date	30 October 2022
Team ID	PNT2022TMID14696
Project Name	Skill/Job Recommender
Maximum Marks	4 Marks

Technical Architecture:

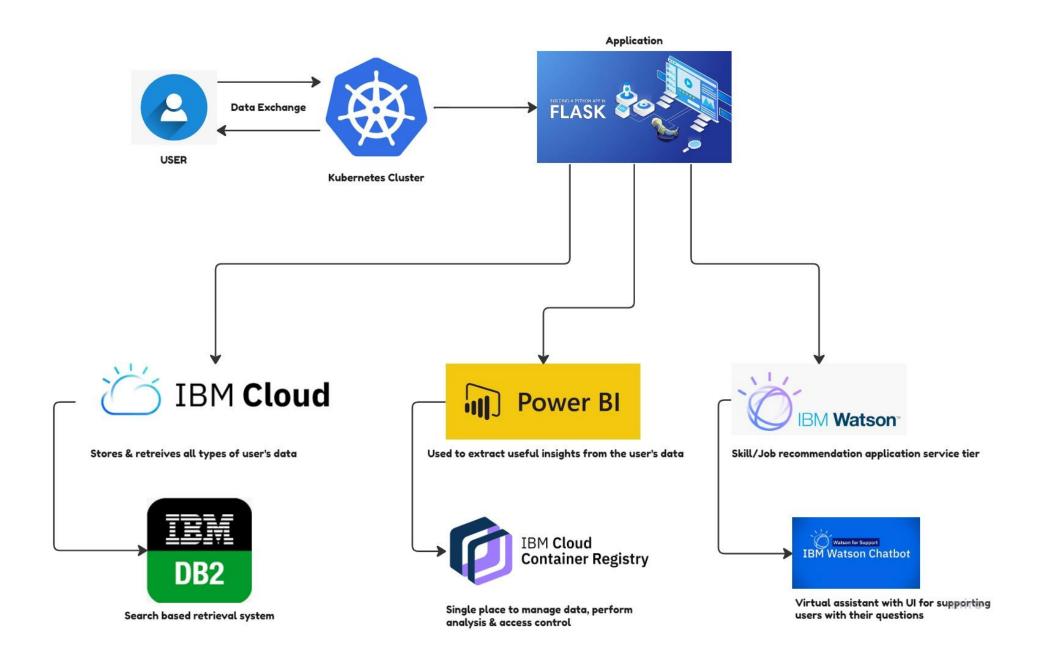The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

USER — Data Exchange

Kubernetes Cluster

Application

FLASK — BUILDING A PYTHON APP IN FLASK

IBM **Cloud**
Stores & retreives all types of user's data

IBM DB2
Search based retrieval system

Power BI
Used to extract useful insights from the user's data

IBM Cloud Container Registry
Single place to manage data, perform analysis & access control

IBM **Watson**
Skill/Job recommendation application service tier

IBM Watson Chatbot — Watson for Support
Virtual assistant with UI for supporting users with their questions

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	In Desktop as well as mobile browser, the following stacks are used	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application	Python Flask
3.	Application Logic-2	Logic for a process in the application	SendGrid Service / IBM Watson STT Service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	To store data, here MySQL is used, since it is for structured data	MySQL
6.	Cloud Database	To store data in cloud, here we use IBM service	IBM DB2
7.	File Storage	Block storage is very much used in this website	IBM Block Storage
8.	External API-1	The main purpose is to recommend suitable job based on skillset, area of interest, salary package	Google Job Searching API
9.	Machine Learning Model	ML algorithm is used to cluster users with similar interest	K- Means Clustering
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local Server Configuration: Local Service Cloud Server Configuration: Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask is used for developing web applications using python. Advantages of using Flask framework are: There is a built-in development server and a fast debugger provided.	Python flask
2.	Security Implementations	Many advanced security techniques are used to secure the connection and data	SHA-256, SSL certificates, OWASP, hashing techniques

S.No	Characteristics	Description	Technology
3.	Scalable Architecture	The Three-Tier architecture is listed here, it includes Web Tier, Application Tier, Database Tier	Web tier – HTML5, CSS, JavaScript Application tier – Python Flask Database tier – IBM Watson Cloud
4.	Availability	As we use IBM Cloud for hosting, this website is available all the time and there is very less server downtime.	IBM hosting cloud
5.	Performance	It supports for both desktop and mobile browser. As it uses cloud storage all the process is faster and takes less time to execute. It has faster loading time.	IBM load balance