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

Date	18 October 2022
Team ID	PNT2022TMID27400
Project Name	Personal Expense Tracker application
Maximum Marks	4 Marks

Technical Architecture:

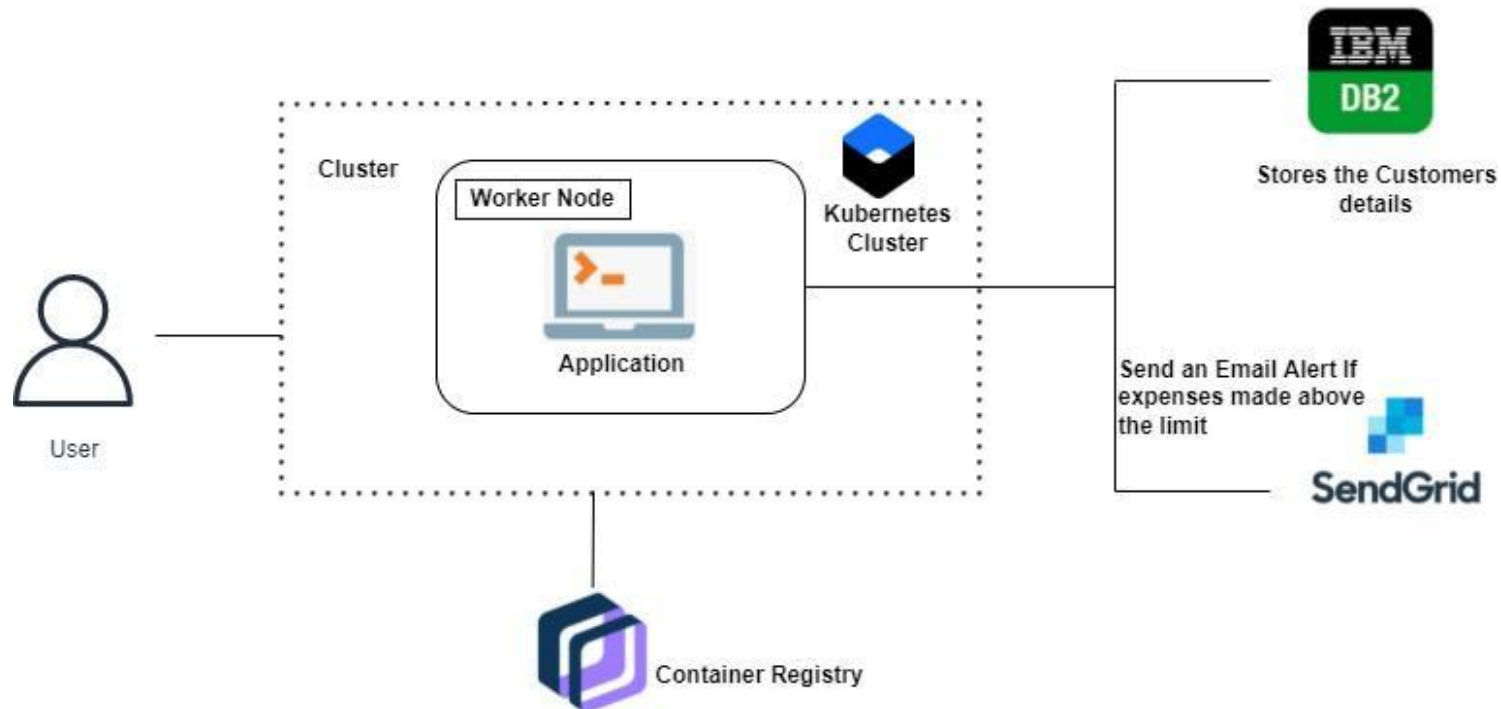The deliverable must include the architectural diagram shown below as well as the data from tables 1 and 2.

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interaction with the application:	HTML, CSS, Javascript, Python - Flask
2.	User Login	Users have the option of logging in with either their Gmail or the app server account.	Google OAuth for google sign-in. Hashed password in DB
3.	Graph visualisation	Users will receive a graphical overview of their spending.	Seaborn, Mathplotlib
4.	Database	Data Type, Configurations etc	NoSQL database
5.	Cloud Database	Database Service on Cloud	IBM DB2 can be used to store user details and expense entries
6.	SendGrid	Without having to maintain email servers, a cloud-based SMTP is utilised to send an email alert if a user exceeds the spending cap.	If a specific circumstance (spending limit) occurs, SendGrid is utilised to send a user an email notice.
7.	Google OAuth	OAuth 2.0 enables users to give applications access to only certain types of data. They can maintain the privacy of their personal information, such as usernames and passwords.	Allows login through Gmail account
8.	Cloud Deployment	Application deployment is done on a cloud server	Docker, Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask is a microframework in Python since it doesn't require specialised tools or libraries.	Python Flask Framework
2.	Security Implementations	Passwords must be hashed since they cannot be shared in plaintext for secure usage.	BCrypt
3.	Scalable Architecture	Applications installed in containers are scaled up quickly to meet demand.	Docker
4.	Availability and Performance	Enhance user experience Kubernetes is an open-source container orchestration system for automating software deployment, scalability, and management.	Kubernetes