Department of Computer Engineering & Technology
Synopsis

Group No:	Students names	PRN	Email,Mobile number	Panel	Sign of student
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Project Title: **Depression Detection System using Python**
Project Domain : **Machine Learning & Artificial Intelligence**

Name of the Company(for Industry Supported Project only): Name of the External Guide(for Industry Supported Project only):

INHOUSE PROJECT : YES/NO

YES

Abstract:
Millions of people worldwide suffer from depression, a serious mental health issue that has a significant influence on everyday functioning and personal well-being. The goal of this project is to propose a Python-based depression detection system that can be used as an easily accessible tool for early diagnosis and treatment. The technology combines real-time facial expression analysis with an assessment based on a quiz.

The first step is for users to complete a diagnostic quiz. Based on their answers, a Naive Bayes classifier is used to identify the most likely kind of depression, which might be anxiety, PTSD, or bipolar disorder. The quiz's answers are used by the system to recommend local clinics and to generate an interactive map that makes finding expert assistance simple.

The device also has a capability that analyzes facial expressions in real time. For one minute, users are asked to talk about themselves while a convolutional neural network (CNN) trained on a specific dataset records and analyzes their facial expressions. This analysis evaluates several emotional states, which aids in the diagnosis' refinement.

The system was created using Django and MySQL for database management, HTML, CSS, and JavaScript for the frontend, and Python for backend processing. It also improves resource accessibility and self-evaluation. Its novel methodology is accompanied by several drawbacks, such as possible errors in the identification of emotions and quiz answers.

Project Objectives for Team (at least 4)
1. Create a Diagnostic Quiz: To identify different types of depression, create a quiz using a Naive Bayes classifier.
2. Use Facial Expression Analysis: To improve diagnosis, use real-time facial expression analysis utilizing a CNN.
3. Ensure Frontend-Backend Integration: Create a frontend that is easy to use and make sure it interfaces seamlessly with the MySQL database and Python backend.
4.Address Limitations: Recognize and resolve any possible errors in the quiz answers and emotion recognition.

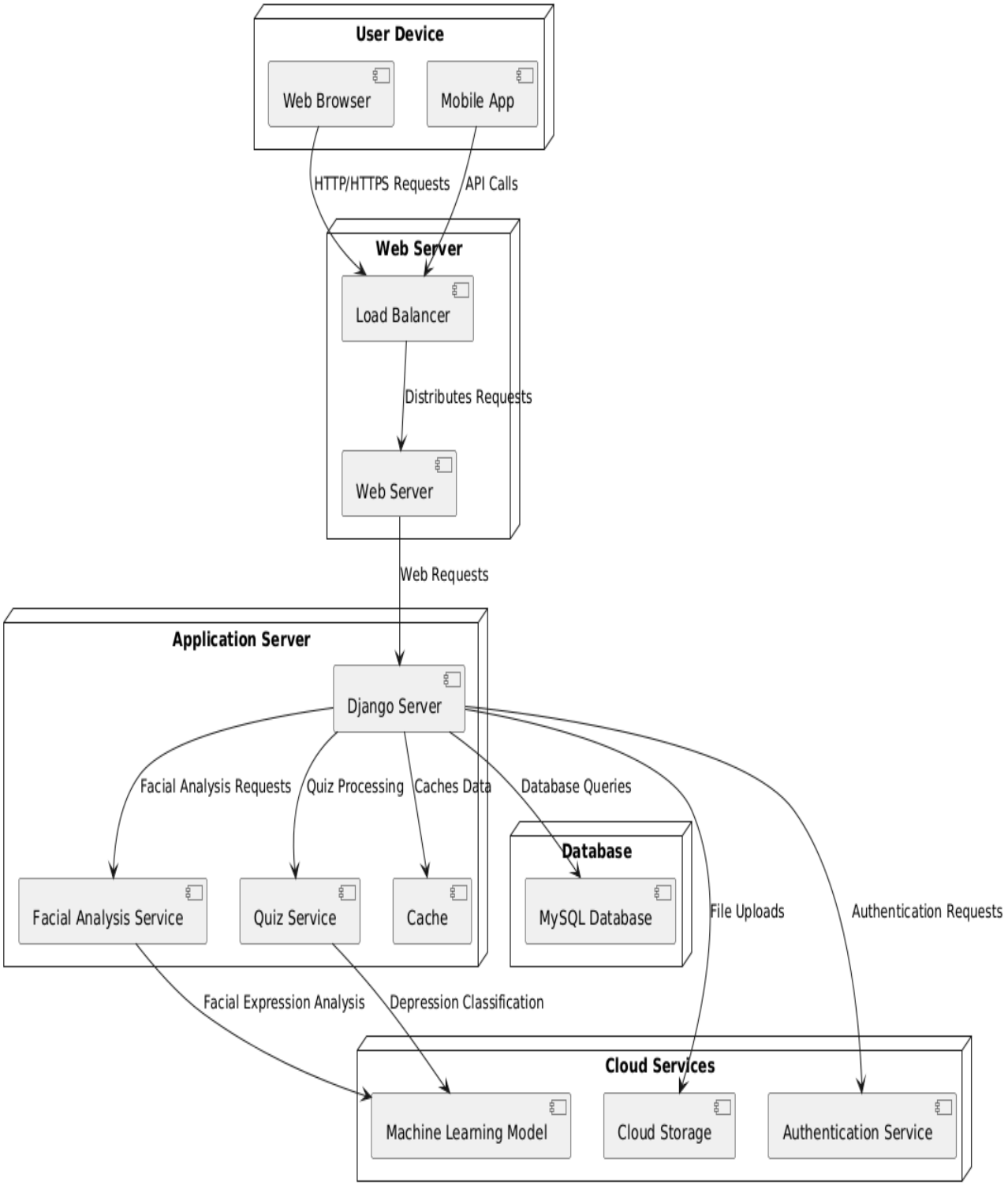
Individual Project objectives per member (at-least 4)
1. Frontend Developer: Utilizing HTML, CSS, and JavaScript, design and develop the user interface.
2. Backend Developer: Use Python and Django to create and oversee backend logic, such as database interactions and quiz processing.
3. Machine Learning Engineer: Develop and enhance the Convolutional Neural Network (CNN) and Naive Bayes classifier for facial analysis and depression identification.
4. Database Administrator: Create and manage the MySQL database while guaranteeing the accuracy and productivity of the data.
5. QA Tester: Report any flaws or issues and test the system for correctness, usability, and integration difficulties.
6.UX/UI Designer: Improve interface design and user experience in response to user input.
7. Project Manager: Oversee the project's coordination, keep an eye on deadlines, and guarantee productive teamwork.

H/w & S/w Requirements:

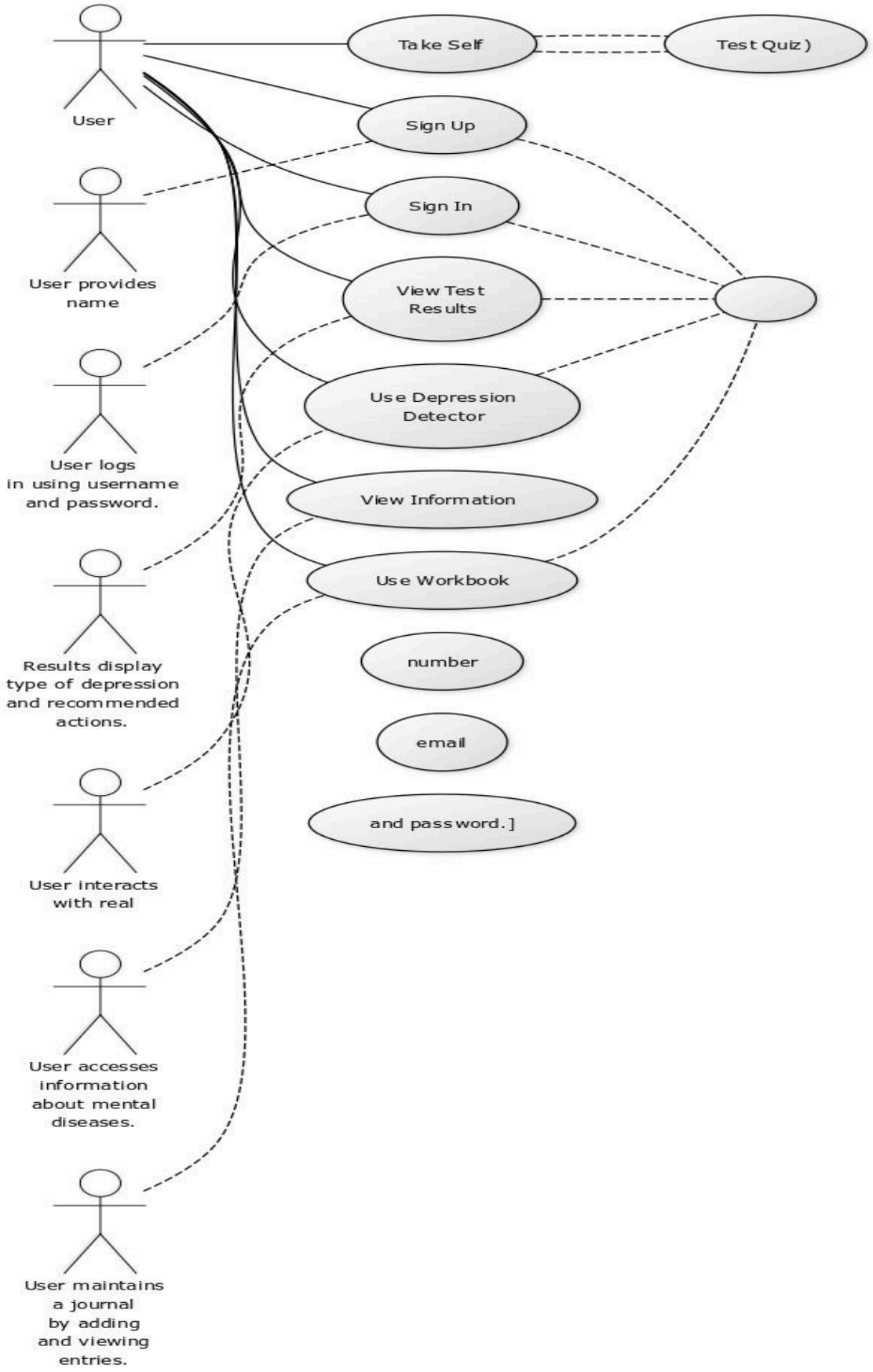
High Level Design [Architecture Diagram/Block Diagram]

Low Level Design [use case, class, activity, and sequence diagrams]

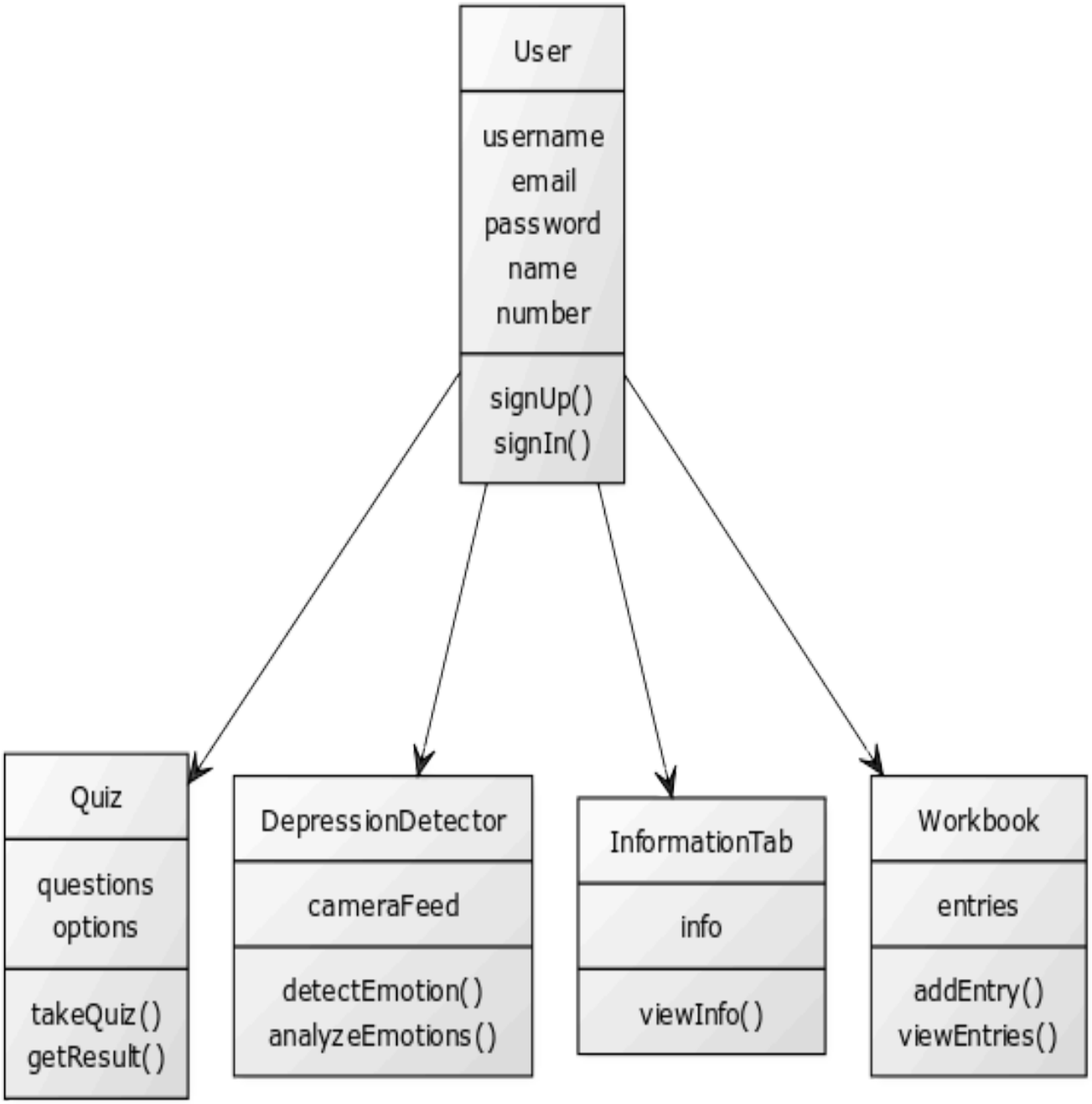
ARCHITECTURE DIAGRAM



USE-CASE DIAGRAM



CLASS -DIAGRAM



ACTIVITY-DIAGRAM

SEQUENCE-DIAGRAM