Project Initialization and Planning Phase

Date	24 July 2024
Team ID	**SWUID20240034367**
Project Title	**Anemia-Sense-Leveraging-Machine-Learning-For-Precise-Anemia-Recognitions-using-python**
Maximum Marks	3 Marks

Project Proposal

Project Overview	
Objective	The primary objective of this project is to develop a robust and accurate anemia detection system using machine learning. This system will allow users to input clinical data, and the application will predict anemia with high accuracy. The system will be user-friendly and accessible via a web-based interface.
Scope	The project will cover the development of a web application that allows users to register, log in, input patient data, and receive anemia predictions. The scope includes data preprocessing, model training, backend development with Flask, and frontend integration. The project will not cover real-time data analysis or the development of native mobile applications.
Problem Statement	
Description	Accurately diagnosing anemia can be challenging for healthcare professionals, especially in resource-limited settings. Existing solutions often lack accuracy or user-friendly interfaces, leading to misdiagnoses and inadequate treatment.
Impact	Solving this problem will provide healthcare professionals and researchers with a reliable tool for diagnosing anemia, improving patient care, and enabling better research outcomes. Accurate anemia detection can also help in early intervention and treatment, reducing the risk of complications.
Proposed Solution	

Approach	The proposed solution involves using machine learning with a well-structured dataset to identify anemia based on clinical data. The approach includes: 1. Data collection and preprocessing from the Kaggle anemia dataset. 2. Training machine learning models (e.g., Decision Tree, Random Forest, Logistic Regression) on the dataset. 3. Developing a Flask-based web application for user interaction. 4. Integrating the model with the web application to allow users to input data and receive anemia predictions.
Key Features	• User registration and login functionality. • • Data input and anemia prediction. • • High accuracy anemia detection using machine learning. • • A web-based interface with a simple and intuitive design. • • Detailed reporting on prediction accuracy.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	16 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	TensorFlow, Keras, scikit-learn
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Kaggle anemia dataset, 66.7 MB