Project Initialization and Planning Phase

Date	8 August 2025
Skillwallet ID	SWUID20250188620
Project Title	Anemia Sense: Leveraging Machine Learning for Precise Anemia Recognition
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

The proposal report aims to improve early anemia detection using machine learning, offering quick, accurate, and accessible predictions for preliminary health assessment. It addresses the lack of fast and user-friendly tools for anemia risk evaluation, empowering individuals to take proactive steps in managing their health. Key features include a machine learning-based anemia risk model and a web-based interface for instant predictions.

Project Overview	
Objective	The primary objective is to provide an accessible and accurate anemia risk prediction system by implementing machine learning techniques, enabling users to receive instant feedback based on key blood parameters without needing an immediate doctor's visit.
Scope	The project focuses on designing and developing a web-based anemia prediction tool using a trained ML model. It covers data preprocessing, model training and evaluation, and deployment through a Flask web application. This ensures ease of use, quick results, and increased awareness about anemia risks.
Problem Statement	
Description	The current preliminary anemia risk assessment process is often inconvenient, requiring physical visits, lab tests, and medical consultations. This slows down early detection and may discourage individuals from seeking timely advice.
Impact	By providing a quick, data-driven, and accessible prediction tool, the solution encourages early detection, reduces delays in diagnosis, and promotes proactive health management, contributing to improved personal well-being and awareness.
Proposed Solution	
Approach	Employ machine learning techniques to analyze critical blood test parameters (Gender, Hemoglobin, MCH, MCHC, MCV) and predict the likelihood of anemia. Deploy the solution as a responsive, user-friendly Flask-based web application.
Key Features	- Machine learning-based anemia prediction model trained on real dataset.

	- Web interface for easy data input and instant results. - Simple, clean, and responsive design for user accessibility.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, pycharm
Data		
Data	Dataset name, size, format	anemia.csv, 1421 rows, CSV