

Project Initialization and Planning Phase

Date	5 August 2025
Team ID	SWUID20250185217
Project Name	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

The proposal report aims to leverage machine learning to enhance the early detection and management of anemia, boosting diagnostic accuracy and accessibility. It addresses challenges in traditional detection methods, offering faster, more precise, and more accessible solutions for both healthcare professionals and patients. Key features include a machine learning-based anemia detection model, a user-friendly prediction interface, and remote accessibility through a web-based application.

Project Overview	
Objective	The primary objective is to improve the anemia detection process by implementing advanced machine learning techniques, ensuring faster, more accurate, and more accessible assessments.
Scope	The project focuses on developing a predictive model for anemia detection based on blood parameter datasets, integrated with a Flask web application for real-time predictions. The system will be optimized for both local and remote use, enabling accessibility in rural and urban areas.
Problem Statement	

Description	Traditional anemia detection often involves time-consuming lab processes and multiple visits to healthcare centers, leading to delays in diagnosis and treatment.
Impact	Implementing an AI-based detection tool will enable early identification of anemia, reduce diagnostic delays, and enhance treatment outcomes, particularly in resource-limited settings.
Proposed Solution	
Approach	Employing machine learning techniques to analyze patient data and predict anemia risk, creating an efficient and accessible detection system through a web-based platform.
Key Features	<p>Machine learning-based anemia detection model trained on real-world health data.</p> <ul style="list-style-type: none"> - Flask web application for user-friendly prediction input. - Support for early detection, personalized health guidance, and potential integration with remote monitoring tools.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU specifications, number of cores	Intel Core i5, 4 cores
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	256 GB SSD
Software		
Frameworks	Python frameworks	Flask

Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, VS Code
Data		
Data	Data Source, size, format	Kaggle anemia dataset, 1421 records, CSV format