Project Report Template

By:

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1 Introduction :

1.1 Project Overview:

Anemiasense leverages machine learning algorithms to provide precise recognition and management of anemia, a condition characterized by a deficiency of red blood cells or hemoglobin. Here are three general scenarios illustrating its use case:

Scenario 1:Early Detection and Diagnosis:
Anemiasense utilizes machine learning models trained on vast datasets of blood parameters and patient profiles to detect early signs of anemia. By analyzing key indicators such as hemoglobin levels, red blood cell counts, and other relevant biomarkers, the system can flag potential cases for further investigation by healthcare professionals. Early detection enables timely interventions and treatment plans, improving patient outcomes.

Scenario 2: Personalized Treatment Plans
Machine learning algorithms in Anemiasense can analyze diverse patient data, including genetic factors, lifestyle habits, and medical history, to generate personalized treatment plans. By considering individual variations and responses to different treatments, the system helps healthcare providers tailor interventions for optimal results. This personalized approach enhances the effectiveness of anemia management and reduces the risk of complications.
Scenario 3:Remote Monitoring and Follow-Up

Anemiasense supports remote monitoring of patients with anemia through wearable devices or digital health platforms. Machine learning algorithms continuously analyze real-time data such as hemoglobin levels, activity levels, and medication adherence to provide insights to both patients and healthcare providers. This remote monitoring capability facilitates proactive management, enables timely adjustments to treatment regimens, and reduces the need for frequent in-person visits, particularly beneficial for patients in rural or underserved areas.

1.2 Objectives:

Analyse the data and Find the best suitable model.Build an website using flask for the customer to upload their test results to recognise anemia.

2.1 Project Initialization and Planning Phase

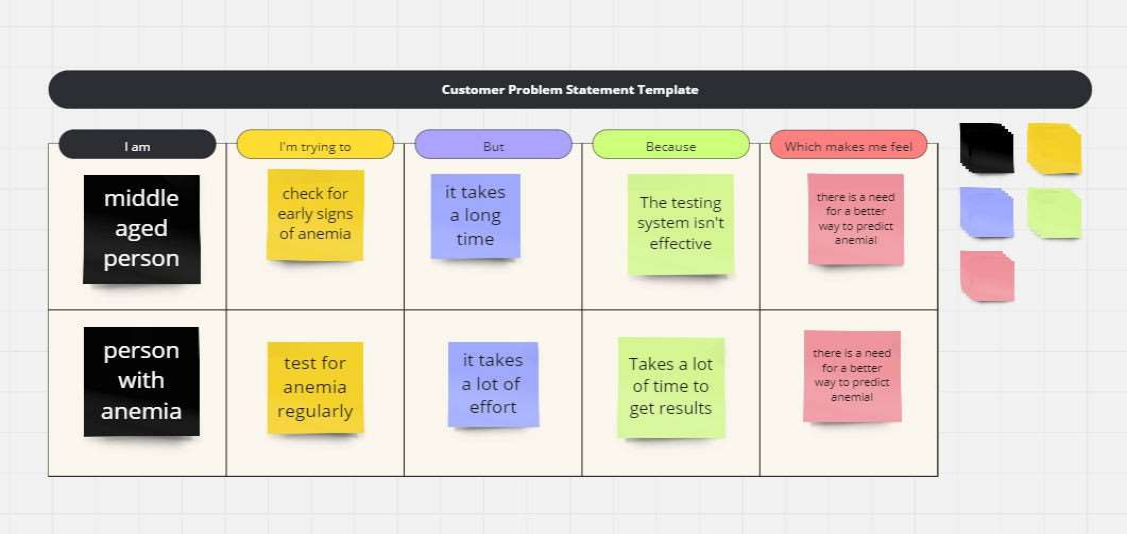
Date	11 July 2024
Team ID	SWTID1720099206
Project Name	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
Maximum Marks	3 Marks

Define Problem Statements (Customer Problem Statement Template):
Anemiasense leverages machine learning algorithms to provide precise recognition and management of anemia, a condition characterized by a deficiency of red blood cells or hemoglobin. Here are three general scenarios illustrating its use case:

Scenario 1: Early Detection and Diagnosis

Scenario 2: Personalized Treatment Plans

Scenario 3:Remote Monitoring and Follow-Up


Customer Problem Statement Template
I am
I'm trying to
But
Because
Which makes me feel
middle aged person
check for early signs of anemia
it takes a long time
The testing system isn't effective
there is a need for a better way to predict anemia!
person with anemia
test for anemia regularly
it takes a lot of effort
Takes a lot of time to get results
there is a need for a better way to predict anemia!

2.2 Project Initialization and Planning Phase

Date	10 July 2024
Team ID	SWTID1720099206
Project Title	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	Leveraging Machine Learning for Precise Anemia Recognitions
Scope	• Data Analysis • Pattern Recognition • Personalized Medicine
Problem Statement	
Description	**Scenario 1:** Early Detection and Diagnosis **Scenario 2:** Personalized Treatment Plans **Scenario 3:** Remote Monitoring and Follow-Up
Impact	Helps in precise recognition of Anemia
Proposed Solution	
Approach	Train and test the data using different types of models and obtain the most efficient model and use it for Anemia Recognition.
Key Features	Use of Random forest model, Logistic Regression Model, Decision Tree Model,etc.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	Intel i3, 2 Cores	Minimum Intel Iris Xe
Memory	RAM specifications	minimum 8 GB
Storage	40 mb	Minimum 256 GB SSD
Software		
Frameworks	Python frameworks	e.g., Flask
Libraries	Additional libraries	e.g., scikit-learn, pandas, NumPy, matplotlib, seaborn
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images

2.3 Initial Project Planning Template

Date	11 July 2024
Team ID	SWTID1720099206
Project Name	Anemia Sense: Leveraging Machine Learning For Precise Anemia Recognitions
Maximum Marks	4 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-1	Data Collection & Preparation	USN-1	Collected Data and check for errors.	2	Medium	Aytha Bhoomika	10th July	10th July
Sprint-1	Exploratory Data Analysis	USN-2	Did Univariate,Bivariate and Multivariate Analysis.	1	Medium	Akkaldevi Rakshith	10th July	10th July
Sprint-2	Model Building	USN-3	Tested the data using many models.	3	Medium	Akkaldevi Rakshith, Ajith Varma, Varad Wankadhe, Aytha Bhoomika	10th July	10th July
Sprint-2	Performance Testing & Hyperparameter Tuning	USN-4	Checking the performance and choosing the best model.	2	Medium	Kanumuri Ajith Varma	11th July	11th July
Sprint-3	Model Deployment	USN-5	Build the Web-Pages and deploy.	2	Medium	Varad Wankadhe	11th July	11th July