Project Initialization and Planning Phase

|  |  |
| --- | --- |
| Date | 20-06-2025 |
| Team ID | SWDTID1749906902 |
| Project Title | Early Stage Disease Diagnosis System Using Human Nail Image Processing |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

This proposal outlines the development of an Early Stage Disease Diagnosis System Using Human Nail Image Processing. The project aims to leverage image processing and machine learning to enable early and accurate disease detection through analysis of human nail images.

|  |  |
| --- | --- |
| **Project Overview** | |
| Objective | The primary objective is to revolutionize early disease detection by implementing advanced image processing and machine learning techniques for faster and more accurate assessments based on human nail images. |
| Scope | The project comprehensively assesses and enhances the disease diagnosis process, incorporating image processing and machine learning for a more robust and efficient system. |
| **Problem Statement** | |
| Description | Addressing inaccuracies and inefficiencies in current early disease diagnosis methods adversely affects timely medical intervention and patient outcomes. |
| Impact | Solving these issues will result in improved diagnostic efficiency, earlier detection of diseases, and an overall enhancement in healthcare delivery, contributing to better patient outcomes and organizational success. |
| **Proposed Solution** | |
| Approach | Employing image processing and machine learning techniques to analyze and predict disease indicators from human nail images, creating a dynamic and adaptable diagnostic system. |
| Key Features | - Implementation of an image processing and machine learning-based diagnostic model. |

|  |  |
| --- | --- |
|  | * Real-time decision-making for quicker disease diagnosis. * Continuous learning to adapt to evolving disease patterns and diagnostic criteria. |

**Resource Requirements**

|  |  |  |
| --- | --- | --- |
| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 8 GB RAM |
| 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, OpenCV (for image processing) |
| Development Environment | IDE | Google Colab, VS Code |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset (e.g., nail image datasets for disease detection), UCI dataset (e.g., medical image datasets), custom collected nail image data (size and format to be determined based on collection). |