

## Project Initialization and Planning Phase

Date	15 March 2024
Team ID	SWTID1720333657
Project Title	Wce Curated Colon Disease Classification Using Deep
Maximum Marks	3 Marks

### Project Proposal (Proposed Solution) template

This project proposes a novel solution to revolutionize colon disease diagnosis using deep learning. Current diagnostic methods based on colonoscopy images often lead to inconsistencies and missed early-stage cancers. Our solution aims to improve accuracy, efficiency, and patient outcomes by leveraging deep learning algorithms. Key features include automated image analysis for precise disease classification, reducing unnecessary biopsies and procedure costs. Personnel will include data scientists, medical experts, and software engineers. This initiative aims to streamline clinical workflows, enhance diagnostic precision, and ultimately improve patient care while optimizing healthcare resource utilization.

Project Overview	
Objective	The primary objective is to enhance colon disease diagnosis through the implementation of deep learning technology, aiming to improve diagnostic accuracy, streamline clinical workflows, and ultimately enhance patient care outcomes.
Scope	The project scope encompasses the development and implementation of a deep learning-based system for automated analysis of colonoscopy images. It focuses on improving diagnostic accuracy for colon diseases, particularly early-stage cancers, while streamlining clinical workflows to reduce unnecessary procedures and costs.
Problem Statement	
Description	Current colonoscopy diagnoses rely heavily on subjective interpretations of images by doctors, leading to inconsistencies and missed cancers.
Impact	Deep learning-aided colonoscopy diagnoses could mean earlier cancer detection and better patient outcomes and fewer unnecessary procedures for patients and lower costs for healthcare.

<b>Proposed Solution</b>	
Approach	To tackle diagnosis inconsistencies, the project will leverage deep learning. We'll train a powerful image recognition model on a massive dataset of labeled colonoscopy images. This model will learn to identify disease signatures during training, ultimately assisting endoscopists in real-time during procedures.
Key Features	This solution goes beyond just automating analysis. It harnesses deep learning's power to identify subtle disease markers, potentially exceeding human accuracy and revolutionizing colon disease classification.

## Resource Requirements

Resource Type	Description	Specification/Allocation
<b>Hardware</b>		
Computing Resources	CPU/GPU specifications, number of cores	AMD Ryzen 7 5700U with Radeon Graphics
Memory	RAM specifications	16 GB
Storage	Disk space for data, models, and logs	1 TB SSD
<b>Software</b>		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	Tensorflow, keras, numpy
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
<b>Data</b>		
Data	Source, size, format	Kaggle dataset, 4000 images