Project Initialization and Planning Phase

Date	15 March 2024
Team ID	SWTID1719937289
Project Title	WCE Curated Colon Disease Classification using Deep Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report:

this project proposal is for the development of a WCE Curated Colon Disease Classification System using Deep Learning analysis of colonoscopy images and patient records. Our goal is to leverage advanced technology and medical expertise to enhance the accuracy and efficiency of diagnosing colon diseases. This project aims to improve patient outcomes, reduce human error, and streamline the diagnostic process.

Project Overview	
Objective	Develop a Deep Learning model capable of accurately classifying colon diseases from Wireless Capsule Endoscopy (WCE) images.
Scope	The Project deploys a Deep Learning model to analyse WCE colonoscopy images with a user-friendly interface.
Problem Statement	
Description	accurate classification of colon diseases (polyps, ulcerative colitis, and esophagitis) using deep learning analysis of colonoscopy images and patient record
Impact	It assists healthcare professionals in diagnosing colon diseases. Enhances diagnostic accuracy, streamline treatment decisions, and improve patient care by providing timely and accurate disease classification.
Proposed Solution	
Approach	Employing deep learning techniques like CNN to increase the accuracy and reliability of the results whilst also providing an easy to use interface

Key Features	The project uses VGG16 Architecture, a deep network with a total of 16 convolutional layers this architecture has been widely used for various computer vision tasks due to its simplicity, versatility, and strong results.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	AMD Ryzen 3 3250U @2.6Ghz
Memory	RAM specifications	8.00 GB DDR4
Storage	Disk space for data, models, and logs	512 GB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	Tensorflow, VGG16, numpy, matplotlib, wtforms
Development Environment	IDE, version control	Google Collaboratory, Pycharm
Data		
Data	Source, size, format	Kaggle dataset(https://www.kaggle.com/datasets/francismon/curated-colon-dataset-for-deep-learning), 6,000 images, jpg format