Project Initialization and Planning Phase

Date	9 December 2024
Team ID	739902
Project Title	Alzheimer Disease Prediction
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to predict Alzheimer's disease using deep learning techniques. 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	To develop a deep learning model capable of predicting the risk of Alzheimer's disease early using brain imaging.
Scope	The project focuses on building and evaluating a predictive model for Alzheimer's risk. It includes data collection, preprocessing, model development, and deployment. The application is intended for researchers and healthcare professionals.
Problem Statement	
Description	Early detection of Alzheimer's disease is challenging due to the lack of accessible diagnostic tools that analyze complex data like imaging.
Impact	Solving this problem would enable early interventions, improve patient outcomes, and reduce healthcare costs by offering a non-invasive, data-driven diagnostic approach.
Proposed Solution	
Approach	1. Collect data from public datasets, such as MRI scans. 2. Preprocess and clean the data to ensure quality. 3. Engineer features that are significant for Alzheimer's prediction.

	4. Build and evaluate deep learning model that is xception model to predict Alzheimer's risk. 5. Deploy the model as a user-friendly web-based tool for healthcare use.
Key Features	1. Deep learning algorithms for Alzheimer's prediction. 2. A comprehensive analysis of multi-modal data (imaging). 3. Deployment of a web-based interface for user interaction.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space	1 TB SSD
Software		
Frameworks	Python frameworks	Flask, TensorFlow
Libraries	Additional libraries	numpy, tensorflow, sklearn, imblearn
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Kaggle dataset, 10,000 images, JPG