Project Initialization and planning phase

Date	21/06/25
Team-id	SWTID1750180744
Project Title	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum marks	3 marks

Project proposal

Project Overview	
Objective	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Scope	It is used in Agricultural and Farming Sector , Supply Chain and Warehousing Retail and Supermarket , Food Processing Industry ,Technical and Research Applications
Problem Statement	
Description	In the fresh produce industry, ensuring the quality of fruits and vegetables is critical. However, current sorting methods are predominantly manual or rely on outdated automation systems, which are time-consuming, error-prone, and inefficient when dealing with large volumes of produce. These systems struggle with variability in size, shape, colour, and lighting conditions, resulting in frequent misclassification of rotten versus fresh items.
Impact	Economic benefit,Supply chain efficiency,Empowerment of farmers and Small business ,Advancement in AI and

	agriculture,Environment Impact
Proposed Solution	
Approach	• Data collection and preprocessing • Model selection:Transfer learning(pre trained CNN model VGG16) • Training the model • Model evaluation • Deployment(Tensorflow) • Testing and feedback loop
Key features	• Transfer Learning for Low-Data Adaptability • Generalization Across Multiple Fruit/Vegetable Types • Real-Time Detection Capability • Cost-Effective Automation for Low-Infrastructure Settings • Environmental and Social Impact

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	GPU specification,number of cores	NVIDIA T4,P100, V100
Memory	RAM specification	12.67GB
Storage	Disk space for data,models and logs	112.64 GB SSD
Software		
Frameworks	Python Frameworks	Flask

Libraries	Additional libraries	Tensorflow, Scikit-learn
Development Environment	IDE,version control	Google colab notebook,GitHub
Data		
Data	Source,size,format	Kaggle dataset.10000images