Model Development Phase Template

Date	20 June 2025
Student Name	Hrituraj Shashikant Narvekar
Project Title	GreenSnap: A Vegetable Classifier
Maximum Marks	5 Marks

Model Selection Report:

Model	Description
Artificial Neural Network (ANN)	ANNs are foundational deep learning models composed of multiple fully connected layers. They are well-suited for tabular data or feature-engineered inputs, and while they can be adapted for image data, they do not inherently capture spatial relationships.
Convolutional Neural Network (CNN)	CNNs are powerful deep learning models specifically designed for image data. They automatically extract spatial features from images using convolutional layers, allowing effective classification of complex visual patterns. In this project, CNNs are used to classify Boletus, Lactarius, and Russula mushrooms based on their images.
Recurrent Neural Network (RNN)	RNNs are designed to model sequential data by maintaining a hidden state across time steps. While they are powerful for time series and language modeling, their utility in static image classification is limited.
MobileNetV2	MobileNetV2 is a lightweight convolutional neural network architecture designed for efficient image classification. It utilizes depth wise separable convolutions to reduce computational cost while maintaining high accuracy. Pre-trained on ImageNet, MobileNetV2 is suitable for transfer learning, offering a good balance of accuracy and speed. In this project, it is used to classify 15 vegetable types.

Conclusion:

Model Selected	
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