Model Development Phase Template

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Project Title	Greenclassify: Deep Learning-Based Approach For Vegetable Image Classification
Maximum Marks	5 Marks

Model Selection Report

In the model selection report for future deep learning and computer vision projects, various architectures, such as CNNs and transfer learning models, will be evaluated. Factors such as performance, complexity, and computational requirements will be considered to determine the most suitable model for the task at hand.

Model Selection Report:

Model	Description
CNN (Convolutional Neural Network)	A Convolutional Neural Network (CNN) is ideal for classifying vegetable images. It detects features using layers like Convolutional, Activation (ReLU), and Pooling. By resizing images to 224x224 pixels, the CNN processes and classifies them, ensuring accurate identification of various vegetables after training.
VGG16	VGG16 is a deep learning model known for its simplicity and effectiveness in image classification tasks. It uses 16 layers, primarily consisting of Convolutional and Pooling layers, to extract features. By resizing images to 224x224 pixels, VGG16 processes and classifies them accurately into different categories after training on the dataset.
ResNet50	ResNet50 is a powerful deep learning model that uses residual learning to handle deeper networks. It consists of 50 layers and includes skip connections to prevent vanishing gradients. By resizing images to 224x224 pixels, ResNet50 processes and

	classifies them with high accuracy after training, making it ideal for complex image classification tasks.
Inception	Inception, also known as GoogLeNet, is a deep learning model designed to capture more information at different scales. It uses Inception modules that apply multiple convolutional operations in parallel. By resizing images to 299x299 pixels, Inception processes and classifies them efficiently, providing accurate results after training on the dataset.
Xception	Xception is an advanced deep learning model that improves on Inception by using depthwise separable convolutions. This architecture captures complex features while reducing the number of parameters. By resizing images to 299x299 pixels, Xception processes and classifies them with high precision after training, making it suitable for detailed image classification tasks.