**Model Optimization and Tuning Phase Template**

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| Date | 13 November 2024 |
| Team ID | 739761 |
| Project Title | pixelprose - crafting visual stories with intelligent image captioning |
| Maximum Marks | 10 Marks |

**Model Optimization and Tuning Phase**

The Model Optimization and Tuning Phase involves refining neural network models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

### Final Model Selection Justification (2 Marks):

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| **Final Model** | **Reasoning** |
| ResNet15V2 | ResNet152V2 is a deep convolutional neural network architecture known for its high accuracy in image classification tasks. It's particularly wellsuited for complex datasets with many variations in objects. For tomato plant identification, ResNet152V2 could be a good choice if you have a large and diverse dataset of tomato plant images with different growth stages, varieties, and environmental conditions. It's ability to learn intricate features from the images could lead to a highly accurate model. |