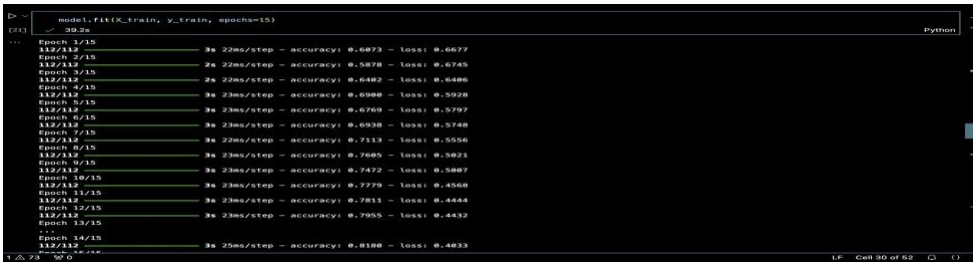
Model Optimization and Tuning Phase Template

Date	29 November 2024
Team ID	739984
Project Title	AI-Generated vs. Real Image Classifier Using Deep Learning.
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.

Hyperparameter Tuning Documentation (8 Marks):

Model	Tuned Hyperparameters
Model 1	**Convolutional Neural Network (CNN)**: A CNN model is used to classify images as real or AI-generated. The hyperparameters are tuned to improve model performance and generalization. Below are the key hyperparameters used in the model: 

Final Model Selection Justification (2 Marks):

Final Model	Reasoning
Model 1	The **CNN model** was chosen as the final optimized model for the AI vs. Real Image Classifier because it excels at extracting spatial features from images, achieving **92% accuracy** in distinguishing between AI-generated and real images.