Model Development Phase Template

Date	17 July 2025
Team ID	739816
Project Title	Galactic Gazetter: A comprehensive Dataset of planet images.
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

```
# Train the model
history = model.fit(datagen.flow(X_train, y_train, batch_size=32),
                    validation_data=(X_test, y_test), epochs=20)
```

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
Model 1	The model.fit() function then trains the model using augmented image batches generated by ImageDataGenerator, which introduces random transformations like rotation and flipping to help the model generalize better. The training runs for 20 epochs, and validation data is provided to monitor performance on unseen images. This entire process helps the model learn effectively from limited data while reducing the risk of overfitting. Model.fit(...) starts training using mini-batches from the augmented dataset. Validation_data=(X_test, y_test) monitors generalization to unseen data.