# Model Development Phase Template

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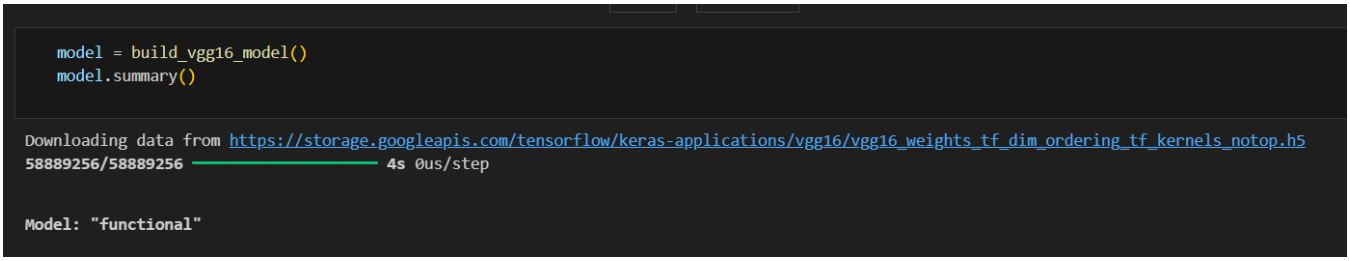
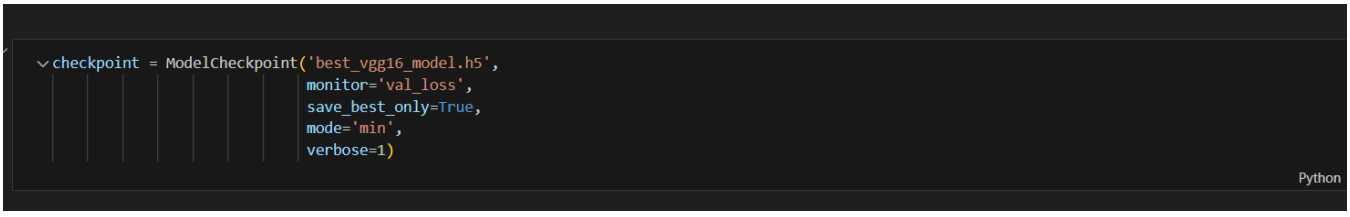
|---|---|
| Date | 25 June 2025 |
| Team ID | SWTID1749974387 |
| Project Title | Neural Networks Ahoy: Cutting-edge Ship Classification for Maritime Mastery |
| Maximum Marks | 4 Marks |

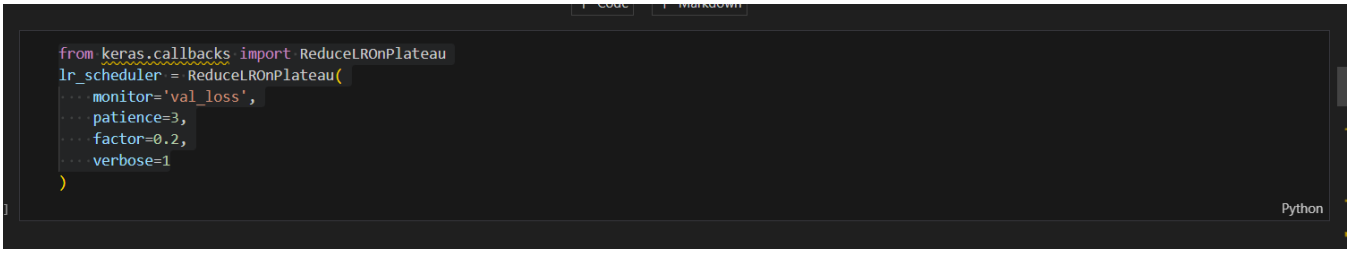
## Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

## Initial Model Training Code:



```python
history = model.fit(
    train_gen,
    validation_data=val_gen,
    epochs=25,
    callbacks=[checkpoint, lr_scheduler],
    verbose=1
)
```

Python

**Model Validation and Evaluation Report:**

| Model | Classification Report | F1 Score |
|---|---|---|
| VGG-16 | precision recall f1-score support<br>1 0.93 0.93 0.93 318<br>2 0.97 0.98 0.97 175<br>3 0.99 0.96 0.98 138<br>4 0.99 0.99 0.99 125<br>5 0.90 0.92 0.91 182<br>accuracy 0.95 938<br>macro avg 0.96 0.96 0.96 938<br>weighted avg 0.95 0.95 0.95 938 | 95% |