Model Development Phase Template

Date	1 JUNE 2025
Team ID	xxxxxx
Project Title	CRIME VISION: ADVANCED CRIME CLASSIFICATION LEARNING
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):

Paste the screenshot of the model training code

```
[ ] def transfer_learning():
        base_model = DenseNet121(include_top=False, input_shape=(*IMG_SHAPE, 3), weights="imagenet")
        base_model.trainable = False  # Freeze all layers
        return base_model
```

```
    def create_model():
        model = Sequential([
            Rescaling(1./255, input_shape=(*IMG_SHAPE, 3)),
            transfer_learning(),
            GlobalAveragePooling2D(),
            Dense(256, activation="relu"),
            Dropout(0.2),
            Dense(512, activation="relu"),
            Dropout(0.2),
            Dense(1024, activation="relu"),
            Dense(n, activation="softmax")
        ])
        model.summary()
        return model
```

```
[ ] model = create_model()
    model.compile(optimizer="adam", loss="categorical_crossentropy", metrics=["accuracy"])
```

```
    # Train the model
    history = model.fit(x = train_set, validation_data = val_set,epochs = EPOCHS)
```

```
# Save model
model.save('crime.h5')
```

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
Model 1