

Model Development Phase Template

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| Date | 10 July 2024 |
| Team ID | 739745 |
| Project Title | Rising Waters: Machine Learning Approach To Flood Prediction |
| 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:

```
y_pred=dt.predict(x_test)
y_pred=rf.predict(x_test)
y_pred=knn.predict(x_test)
y_pred=xgb.predict(x_test)
```

```
rf=RandomForestClassifier(n_estimators=20,random_state=42)
```

```
rf.fit(x_train,y_train)
```

```
RandomForestClassifier
RandomForestClassifier(n_estimators=20, random_state=42)
```

```
y_pred=rf.predict(x_test)
```

```
accuracy_score(y_test,y_pred)
```

```
0.9655172413793104
```

Model Validation and Evaluation Report:

| Model | Classification Report | Accuracy | Confusion Matrix |
|---------------------|---|----------|---|
| Logistic Regression | - | - | - |
| Random Forest | <pre> Classification Report: precision recall f1-score support 0 0.96 0.96 0.96 54 1 0.92 0.92 0.92 26 accuracy 0.94 macro avg 0.94 weighted avg 0.95 </pre> | 96% | <pre> cm = confusion_matrix(y_test, y_pred) print("Confusion Matrix:") print(cm) Confusion Matrix: [[26 0] [1 21]] </pre> |