# Model Development Phase Report

| Date | 12 July 2024 |
|---|---|
| Team ID | Team - 740292 |
| Project Title | Abalone Age 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 Model Training and accuracy score, presented through respective screenshots.

**Initial Model Training Code:**

```python
from sklearn.tree import DecisionTreeRegressor
dtr=DecisionTreeRegressor()
dtr.fit(x_train_scaled,y_train)
```

```
▼ DecisionTreeRegressor
DecisionTreeRegressor()
```

```python
from sklearn.ensemble import RandomForestRegressor
rfr=RandomForestRegressor()
rfr.fit(x_train_scaled,y_train)
```

```
▼ RandomForestRegressor
RandomForestRegressor()
```
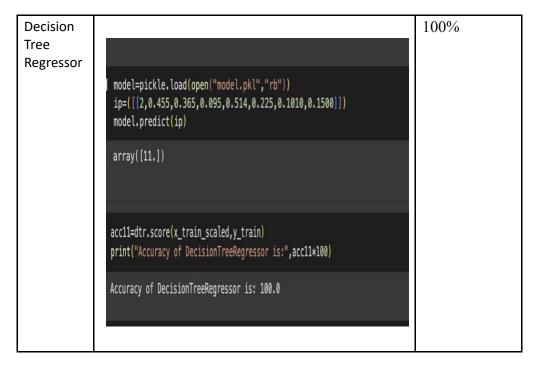
**Model Validation and Evaluation Report:**

| Model | Accuracy Report | Accuracy Score |
|-------|-----------------|----------------|
|       |                 |                |

| Decision Tree Regressor | | 100% |
|---|---|---|
| | ```
model=pickle.load(open("model.pkl","rb"))
ip=([[2,0.455,0.365,0.095,0.514,0.225,0.1010,0.1500]])
model.predict(ip)

array([11.])


acc11=dtr.score(x_train_scaled,y_train)
print("Accuracy of DecisionTreeRegressor is:",acc11*100)

Accuracy of DecisionTreeRegressor is: 100.0
``` | |

| Random Forest Regressor | | 93% |
|---|---|---|
| | ```
pickle.dump(rfr,open("abalone.pkl",'wb'))
model1=pickle.load(open("abalone.pkl","rb"))
ip=([[2,0.455,0.365,0.095,0.514,0.2254,0.101,0.150]])
model1.predict(ip)

array([[12.57]])




acc12=rfr.score(x_train_scaled,y_train)
print("Accuracy of RandomForestRegressor is:",acc12*100)

Accuracy of RandomForestRegressor is: 93.51817674152262
``` | |