Model Development Phase Template

Date	10 July 2024
Team ID	739851
Project Title	Beyond The Veil Of Wellness: Machine Learning's Unique Journey In Animal Health Classification
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:**

```
from sklearn.ensemble import RandomForestClassifier

rfc = RandomForestClassifier()
rfc.fit(xbal, ybal)
```

```
▾ RandomForestClassifier
RandomForestClassifier()
```

```
ytestpredr=rfc.predict(xtest)
ytrainpredr=rfc.predict(xtrain)
print (accuracy_score (ytest, ytestpredr))
print(accuracy_score(ytrain, ytrainpredr))
```

```
0.9961832061068703
0.993431855500821
```

```
from sklearn.tree import DecisionTreeClassifier
dtc = DecisionTreeClassifier()
dtc.fit(xbal, ybal)
```

```
▾ DecisionTreeClassifier
DecisionTreeClassifier()
```

```
ytestpredc=dtc.predict(xtest)
ytrainpredc=dtc.predict(xtrain)
print (accuracy_score(ytest, ytestpredc))
print(accuracy_score(ytrain, ytrainpredc))
```

```
0.9885496183206107
0.986863711001642
```

```
from sklearn.linear_model import LogisticRegression

lr = LogisticRegression()
lr.fit(xbal, ybal)
```

```
▾ LogisticRegression
LogisticRegression()
```

```
ytestpred = lr.predict(xtest)
ytrainpred = lr.predict(xtrain)
print(accuracy_score(ytest, ytestpred))
print(accuracy_score(ytrain, ytrainpred))
```

```
0.7709923664122137
0.8045977011494253
```

```
from sklearn.neighbors import KNeighborsClassifier
knn = KNeighborsClassifier()
knn.fit(xbal, ybal)
```

```
▾ KNeighborsClassifier
KNeighborsClassifier()
```

```
ytestpredk=knn.predict(xtest)
ytrainpredk=knn.predict(xtrain)
print(accuracy_score(ytest, ytestpredk))
print(accuracy_score(ytrain, ytrainpredk))
```

```
0.9541984732824428
0.9408866995073891
```