Experiment- 11 **A N V SREEVISHNU**
Date: 28.04.2021 **RA1811003010333**

Implementation of learning algorithms for an application

Aim : To implement of learning algorithms for an application

Algorithm:

1. Import the necessary libraries
2. Take a dataset and read it to the model using pandas
3. Train the model using machine learning models
4. After training the dataset use the models to predict unknown results
5. Test the viability of the model using accuracy score

Code :

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

df=pd.read_csv('suv_data.csv')
df.head()

df.isnull().sum()
```

```
df.info()

from sklearn.preprocessing import LabelEncoder
le=LabelEncoder()
df['Gender']=le.fit_transform(df['Gender'])


df.head()

X=df.iloc[:,[2,3]].values
Y=df.iloc[:,4].values

from sklearn.model_selection import train_test_split
X_train,X_test,Y_train,Y_test=train_test_split(X,Y)

from sklearn.preprocessing import StandardScaler
sc=StandardScaler()
X_train=sc.fit_transform(X_train)
X_test=sc.transform(X_test)

from sklearn.linear_model import LogisticRegression
LogReg=LogisticRegression()
LogReg.fit(X_train,Y_train)
Y_pred=LogReg.predict(X_test)

from sklearn.metrics import accuracy_score
accuracy_score(Y_test,Y_pred)
```

Output :

```
[2] import pandas as pd
    import numpy as np
    import matplotlib.pyplot as plt

    df=pd.read_csv('suv_data.csv')
    df.head()
```

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	Male	19	19000	0
1	15810944	Male	35	20000	0
2	15668575	Female	26	43000	0
3	15603246	Female	27	57000	0
4	15804002	Male	19	76000	0

- New section

```
[ ] df.isnull().sum()

    User ID          0
    Gender           0
    Age              0
    EstimatedSalary  0
    Purchased        0
    dtype: int64
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 400 entries, 0 to 399
Data columns (total 5 columns):
 #   Column           Non-Null Count  Dtype
---  ------           --------------  -----
 0   User ID          400 non-null    int64
 1   Gender           400 non-null    object
 2   Age              400 non-null    int64
 3   EstimatedSalary  400 non-null    int64
 4   Purchased        400 non-null    int64
dtypes: int64(4), object(1)
memory usage: 15.8+ KB
```

```
[5] from sklearn.preprocessing import LabelEncoder
    le=LabelEncoder()
    df['Gender']=le.fit_transform(df['Gender'])
```

```
[6] df.head()
```

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	1	19	19000	0
1	15810944	1	35	20000	0
2	15668575	0	26	43000	0
3	15603246	0	27	57000	0
4	15804002	1	19	76000	0

```
X=df.iloc[:,[2,3]].values
Y=df.iloc[:,4].values

from sklearn.model_selection import train_test_split
X_train,X_test,Y_train,Y_test=train_test_split(X,Y)

from sklearn.preprocessing import StandardScaler
sc=StandardScaler()
X_train=sc.fit_transform(X_train)
X_test=sc.transform(X_test)
```

```
[ ] from sklearn.linear_model import LogisticRegression
    LogReg=LogisticRegression()
    LogReg.fit(X_train,Y_train)
    Y_pred=LogReg.predict(X_test)

    from sklearn.metrics import accuracy_score
    accuracy_score(Y_test,Y_pred)
```

```
0.88
```

```
[ ]
```

Result : Implementation of learning algorithms for an application has been done successfully.