heartattack-data

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#Project Title **To predict the heart attack disease for organization WHO,using machine learning algorithm rate of heart attack disease will increasing manner or decreasing manner**

#Problem Statement **A WHO estimated 12 million death records.One of them half off the death result is found in US.The research intenders the researchers scholar pointout the most relevant risk factor of heartattack As a datascience engineer predict the overall risk using machine learning alogorithm which is called as logistic regression**

###Task 1 ####import the libraries ##Task2 ####import the data set to your used workspace ###Task 3 ####Use a appropriate argument of sklearn library to train,test and split the dataset ### Task 4 ##### hit your values with the arrange using feature scaling ###Task 5 ##### Check your model accuracy and precision using confusion matrix

#Conculsion According to the model analysis the logistic regression algorithm works successfully with 0.6 accuracy.

The accuracy shows that building the model is successfull.

```python
# import the libery's
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```python
#read the data files "framingham.csv"
data=pd.read_csv("framingham.csv")
data
```

```
      male  age  education  currentSmoker  cigsPerDay  BPMeds  \
0        1   39          4              0           0       0
1        0   46          2              0           0       0
2        1   48          1              1          20       0
3        0   61          3              1          30       0
4        0   46          3              1          23       0
...    ...  ...        ...            ...         ...     ...
4233     1   50          1              1           1       0
4234     1   51          3              1          43       0
```

```
4235        0    48              2                1             20          0
4236        0    44              1                1             15          0
4237        0    52              2                0              0          0

        prevalentStroke  prevalentHyp  diabetes  totChol  sysBP  diaBP    BMI  \
0                     0             0         0      195  106.0   70.0  26.97
1                     0             0         0      250  121.0   81.0  28.73
2                     0             0         0      245  127.5   80.0  25.34
3                     0             1         0      225  150.0   95.0  28.58
4                     0             0         0      285  130.0   84.0  23.10
...                 ...           ...       ...      ...    ...    ...    ...
4233                  0             1         0      313  179.0   92.0  25.97
4234                  0             0         0      207  126.5   80.0  19.71
4235                  0             0         0      248  131.0   72.0  22.00
4236                  0             0         0      210  126.5   87.0  19.16
4237                  0             0         0      269  133.5   83.0  21.47

        heartRate  glucose  TenYearCHD
0              80       77           0
1              95       76           0
2              75       70           0
3              65      103           1
4              85       85           0
...           ...      ...         ...
4233           66       86           1
4234           65       68           0
4235           84       86           0
4236           86        0           0
4237           80      107           0

[4238 rows x 16 columns]
```

```python
from sklearn.model_selection import train_test_split
X=data[["age"]]
y=data["currentSmoker"]
X_train,X_test,y_train,y_test=train_test_split(X,y,test_size=0.
 ↪2,random_state=42)
```

```python
print(X_train)
```

```
      age
3252   40
3946   57
1261   47
2536   41
4089   64
...   ...
```

```
3444    36
466     57
3092    60
3772    39
860     35

[3390 rows x 1 columns]
```

```
print(y_train)
```

```
3252    1
3946    0
1261    0
2536    1
4089    0
       ..
3444    1
466     1
3092    0
3772    1
860     0
Name: currentSmoker, Length: 3390, dtype: int64
```

```
print(X_test)
```

```
        age
3188    63
764     45
3264    51
1967    45
2185    45
...     ...
3303    47
4056    44
4210    50
3971    64
2540    55

[848 rows x 1 columns]
```

```
print(y_test)
```

```
3188    0
764     0
3264    1
1967    1
2185    1
       ..
```

```
3303    0
4056    0
4210    0
3971    0
2540    1
Name: currentSmoker, Length: 848, dtype: int64
```

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

```python
print(X_train)
```

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```python
print(X_test)
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[ 0.63875144]]
```

[ ]:
```python
from sklearn.linear_model import LogisticRegression
classifier = LogisticRegression(random_state = 0)
classifier.fit(X_train, y_train)
```

[ ]: LogisticRegression(random_state=0)

[ ]:
```python
y_pred = classifier.predict(X_test)
```

[ ]:
```python
from sklearn.metrics import confusion_matrix, accuracy_score
cm = confusion_matrix(y_test, y_pred)
print(cm)
accuracy_score(y_test, y_pred)
```

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[ ]: