# * * * * * * * * * * * * * * * * * Assignment no 5 * * * * * * * * * * * * * * * * *

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## *Importing all Libaries*

In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as mtp
import sklearn
```

## *Importing all Models from sklearn*

In [2]:
```
from sklearn.svm import SVC
from sklearn.preprocessing import LabelEncoder
```

## *Importing model for Splitting the data and checking the accuracy*

In [3]:
```
from sklearn.model_selection import train_test_split
from sklearn.metrics import classification_report
from sklearn.metrics import accuracy_score,confusion_matrix
```

## *Bay's Classifier*

In [4]:
```
class classifier():

    # Read the Data,
    # Describe the dependent, Independent variables
    # Split the data in Train and Test

    def __init__ (self):
        self.data = pd.read_csv("healthcare-dataset-stroke-data.csv")
        self.data = self.data.drop(self.data[self.data['gender']=='Other'].
        self.bmi_mean = self.data['bmi'].mean
        self.data['bmi'] = self.data['bmi'].fillna(self.bmi_mean)
        self.data.drop('id',axis = 1,inplace = True)
        obj_cols = ['gender', 'ever_married', 'Residence_type']
        self.lb = LabelEncoder()

        for i in obj_cols:
            self.data[i] = self.lb.fit_transform(self.data[i])
        self.data=pd.get_dummies(self.data)

        self.y = self.data['stroke']
        self.X = self.data.drop('stroke', axis = 1)
        self.X_train,self.X_test,self.y_train,self.y_test = train_test_spli


  # Support Vector Machine(SVM)

    def svm(self):
        svc_model = SVC(C = .1, kernel = 'linear', gamma = 1)
        svc_model.fit(self.X_train,self.y_train)
        self.y_pred = svc_model.predict(self.X_test)
        acc = svc_model.score(self.X_test, self.y_test)*100
        print(" Support Vector Machine Accuracy: ",acc)
```

## Main Function

In [5]:
```
def main():
    obj = classifier()
    obj.svm()
```

In [6]:
```
main()
```

```
 Support Vector Machine Accuracy:  93.9334637964775
```

In [ ]:
```

```