```
from sklearn.model_selection import train_test_split
X_train , X_test ,Y_train,Y_test = train_test_split(X,Y,test_size=0.2,random_state = 4 )
```

```
from sklearn import linear_model
from sklearn.neighbours import KNeighboursClassifier
from sklearn.tree import DecisionTreeClassifier
from sklearn import svm
from sklearn.cluster import KMeans
```

```
print(drug.sex.unique)
```

```
from sklearn import preprocessing
LabE_Sex = preprocessing.LabelEncoder()
LabE_Sex.fit('M','F')
X[:,1:] = LabE_Sex.transform(X[:,1:])
X[:,1] = LabE_Sex.transform(X[:,1])

LR = linear_model.Linearregression()
LR.fit(X_train,Y_train)

k=4
KNN = KNeighboursClassifier(n_neighbours=k).fit(X_train,Y_train)
```

```
DTree = DecisionTreeClassifer(criterion='entropy',max_depth=4)
DTree.fit(X_train,Y_train)

SVM = svm.SVC(kernel='rbf')
SVM.fit(X_train,Y_train)

k=3
kmeans = KMeans(init='k-means++',n_clusters=k',n_init = 12)
kmeans.fit(X)

LR.intercept_
LR.coef_

Y_hat = KNN.predict(X_test)

k_means.labels_

from sklearn import matrices
matrices.accuracy_score(Y_hat,Y_test)

from sklearn.matrices import confusion_matrix
confusion_matrix(Y_test,Y_hat,lables=[2,4])

#for KNN
from sklearn import preprocessing
X = preprocessing.StandardScaler().fit(X).transform(X.astype(float))
or fit_transform(X)
```