In [65]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.svm import SVC
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import mean_squared_error
from sklearn.metrics import confusion_matrix
from sklearn.tree import DecisionTreeClassifier
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score
```

In [3]:
```
train = pd.read_csv('Downloads/titanic_train.csv')
```

In [4]:
```
train
```

Out[4]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Ca
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	N
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	N
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	N
...	...	...	...	...	...	...	...	...	...	...	
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.0000	N
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	23.4500	N
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.0000	C
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	7.7500	N

891 rows × 12 columns

In [25]:
```
pclass=train['Pclass']
age=train['Age']
```

In [26]:
```
for i in range(len(age)):
    if pclass[i]==3 and pd.isnull(age[i])==True:
        age[i]=25
    elif pclass[i]==2 and pd.isnull(age[i])==True:
        age[i]=29
    elif pclass[i]==1 and pd.isnull(age[i])==True:
```

```
        age[i]=39
```

```
C:\Users\Sony Vaio\AppData\Local\Temp\ipykernel_11920\4259283003.py:3: SettingWith
CopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stabl
e/user_guide/indexing.html#returning-a-view-versus-a-copy
  age[i]=25
C:\Users\Sony Vaio\AppData\Local\Temp\ipykernel_11920\4259283003.py:5: SettingWith
CopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stabl
e/user_guide/indexing.html#returning-a-view-versus-a-copy
  age[i]=29
C:\Users\Sony Vaio\AppData\Local\Temp\ipykernel_11920\4259283003.py:7: SettingWith
CopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stabl
e/user_guide/indexing.html#returning-a-view-versus-a-copy
  age[i]=39
```

In [28]:
```
sx=train['Sex']

for i in range(len(sx)):
    if sx[i]=='male':
        sx[i]=1
    elif sx[i]=='female':
        sx[i]=0
```

In [ ]:
```

```

In [29]:
```
train
```

Out[29]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin
0	1	0	3	Braund, Mr. Owen Harris	1	22.0	1	0	A/5 21171	7.2500	NaN
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	0	38.0	1	0	PC 17599	71.2833	C85
2	3	1	3	Heikkinen, Miss. Laina	0	26.0	0	0	STON/O2. 3101282	7.9250	NaN
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	0	35.0	1	0	113803	53.1000	C123
4	5	0	3	Allen, Mr. William Henry	1	35.0	0	0	373450	8.0500	NaN
...	...	...	...	...	...	...	...	...	...	...	...
886	887	0	2	Montvila, Rev. Juozas	1	27.0	0	0	211536	13.0000	NaN
887	888	1	1	Graham, Miss. Margaret Edith	0	19.0	0	0	112053	30.0000	B42
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	0	25.0	1	2	W./C. 6607	23.4500	NaN
889	890	1	1	Behr, Mr. Karl Howell	1	26.0	0	0	111369	30.0000	C148
890	891	0	3	Dooley, Mr. Patrick	1	32.0	0	0	370376	7.7500	NaN

891 rows × 12 columns

In [78]:
```
x=train[['Pclass','Sex','Age']]
y=train['Survived']
```

Out[78]:
```
0.0
```

In [50]:
```
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3)
```

In [82]:
```
dtree=LogisticRegression()
lm=SVC()
```

```
dtc=DecisionTreeClassifier()
knn=KNeighborsClassifier()

dtree.fit(x_train,y_train)
lm.fit(x_train,y_train)
dtc.fit(x_train,y_train)
knn.fit(x_train,y_train)

pred=dtree.predict(x_test)
pred2=lm.predict(x_test)
pred3=dtc.predict(x_test)
pred4=knn.predict(x_test)
```

In [85]:

```
a1=accuracy_score(pred,y_test)
a2=accuracy_score(y_test,pred2)
a3=accuracy_score(pred3,y_test)
a4=accuracy_score(pred4,y_test)
print(a1)
print(a2)
print(a3)
print(a4)

avg =(a1+a2+a3+a4)/4
print('average=',avg)
```

```
0.8097014925373134
0.6529850746268657
0.7611940298507462
0.7723880597014925
average= 0.7490671641791045
```

In [ ]:

In [ ]: