Double-click (or enter) to edit

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split # Import train_test_split function
from sklearn import svm #Import svm model
from sklearn import metrics #Import scikit-learn metrics module for accuracy calculation
from sklearn.metrics import confusion_matrix
```

```
from google.colab import files
uploaded=files.upload()
```

Choose Files heart.csv

- **heart.csv**(application/vnd.ms-excel) - 38114 bytes, last modified: 10/25/2019 - 100% done

```
Saving heart.csv to heart.csv
```

```
data = pd.read_csv("heart.csv")
```

+ Code + Text

```
data.head()
```

	age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal
0	52	1	0	125	212	0	1	168	0	1.0	2	2	3
1	53	1	0	140	203	1	0	155	1	3.1	0	0	3
2	70	1	0	145	174	0	1	125	1	2.6	0	0	3
3	61	1	0	148	203	0	1	161	0	0.0	2	1	3
4	62	0	0	138	294	1	1	106	0	1.9	1	3	2

```
data.describe()
```

	age	sex	cp	trestbps	chol	fbs	re
count	1025.000000	1025.000000	1025.000000	1025.000000	1025.00000	1025.000000	1025.0
mean	54.434146	0.695610	0.942439	131.611707	246.00000	0.149268	0.5
std	9.072290	0.460373	1.029641	17.516718	51.59251	0.356527	0.5
min	29.000000	0.000000	0.000000	94.000000	126.00000	0.000000	0.0

```
#Display basic info about the data
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1025 entries, 0 to 1024
Data columns (total 14 columns):
 #   Column    Non-Null Count  Dtype  
---  ------    --------------  -----  
 0   age       1025 non-null   int64  
 1   sex       1025 non-null   int64  
 2   cp        1025 non-null   int64  
 3   trestbps  1025 non-null   int64  
 4   chol      1025 non-null   int64  
 5   fbs       1025 non-null   int64  
 6   restecg   1025 non-null   int64  
 7   thalach   1025 non-null   int64  
 8   exang     1025 non-null   int64  
 9   oldpeak   1025 non-null   float64
 10  slope     1025 non-null   int64  
 11  ca        1025 non-null   int64  
 12  thal      1025 non-null   int64  
 13  target    1025 non-null   int64  
dtypes: float64(1), int64(13)
memory usage: 112.2 KB
```

```
#Separate Feature and Target Matrix
x = data.drop('target',axis = 1)
y = data.target
```

```
# Split dataset into training set and test set
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.3,random_state=109) # 7
```

```
#Create a svm Classifier
ml = svm.SVC(kernel='linear') # Linear Kernel

ml.fit(x_train, y_train)
y_pred = ml.predict(x_test)
```

```
ml.score(x_test,y_test)
```

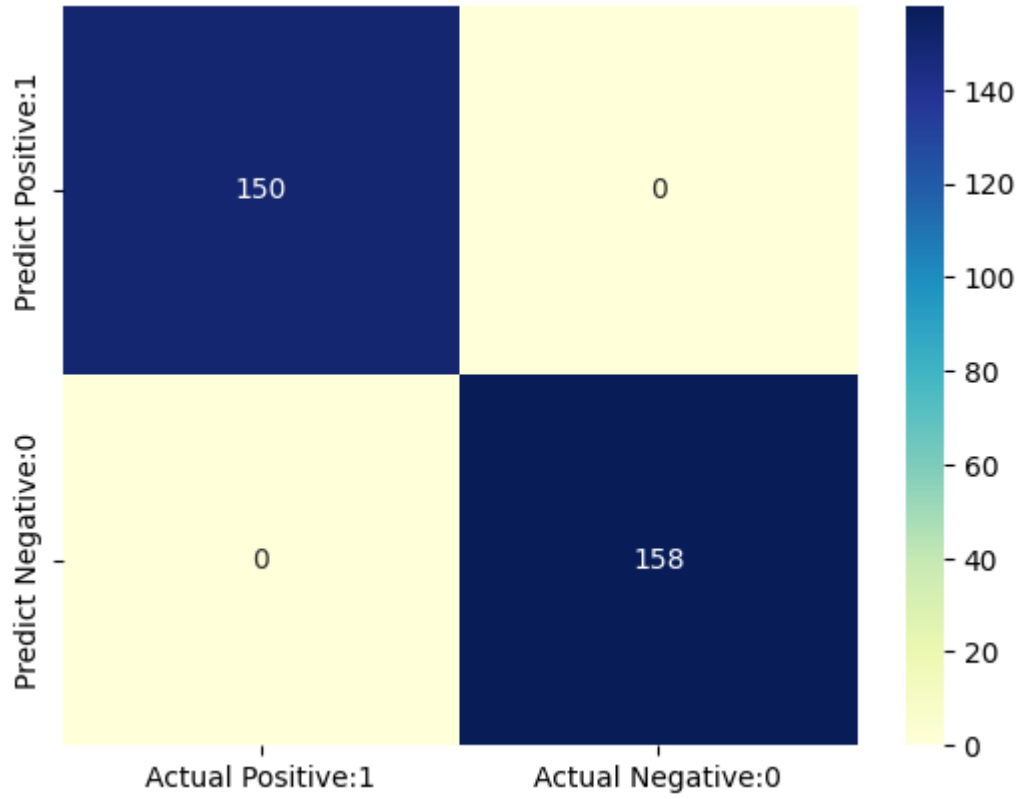
```
0.8733766233766234
```

```
import seaborn as sns

cm = confusion_matrix(y_test, y_test)
cm_matrix = pd.DataFrame(data=cm, columns=['Actual Positive:1', 'Actual Negative:0'],
                                  index=['Predict Positive:1', 'Predict Negative:0'])

sns.heatmap(cm_matrix, annot=True, fmt='d', cmap='YlGnBu')
```

```
<Axes: >
```



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