

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

```
df=pd.read_csv("/content/gender_submission.csv")
df.head()
```

```
df.tail()
```

```
from sklearn.preprocessing import LabelEncoder

encoder = LabelEncoder()

for col in df.select_dtypes(include=['object']).columns:
    data[col] = encoder.fit_transform(data[col])
```

```
x = df.iloc[:,0]
y = df.iloc[:,1]
```

```
x = np.array(x)
y = np.array(y)
```

```
x = x.reshape(-1,1)
y = y.reshape(-1,1)
```

```
from sklearn.model_selection import train_test_split
```

```
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x_train, x_test, y_train, y_test = train_test_split(
    x, y, test_size=0.2, random_state=42
)
print("Training sample:",x_train.shape)
print("testing sample:",x_test.shape)
```

```
Training sample: (334, 1)
testing sample: (84, 1)
```

```
from sklearn.svm import SVC
```

```
svm_liner = SVC(kernel='linear', class_weight='balanced')
```

```
svm_liner.fit(x_train, y_train)
```

```
y_pred=svm_linier.predict(x_test)
```

```
from sklearn.metrics import accuracy_score,confusion_matrix,precision_score,recall_score,f1_score
```

```
accuracy = accuracy_score(y_test,y_pred)  
print("Accuracy :",accuracy)
```

```
Accuracy : 0.5238095238095238
```

```
cm = confusion_matrix(y_test,y_pred,labels=[1,0])  
print("Confusion Matrix :")  
print("TP FP")  
print("FN TN")  
print(cm)
```

```
Confusion Matrix :  
TP FP  
FN TN  
[[18 16]  
 [24 26]]
```

```
precision = precision_score(y_test,y_pred,zero_division=0)  
print("Precision :",precision)
```

```
Precision : 0.42857142857142855
```

```
import seaborn as sns  
plt.figure(figsize=(6,4))  
sns.heatmap(cm,annot=True,fmt="d",cmap="rainbow",  
            xticklabels=['Predicted 1','Predicted 0'],  
            yticklabels=['Actual 1','Actual 0'])  
plt.xlabel("Predicted Labels")  
plt.ylabel("Actual Labels")  
plt.title("Confusion Matrix")  
plt.show()
```

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```

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