

Output Screen Shot:

39110636

1) Write python code to find the Least Common Multiple among given two numbers

	Input	Expected	Got	
✓	54 24 The L.C.M. is 216	54 24 The L.C.M. is 216	54 24 The L.C.M. is 216	✓
✓	568 928 The L.C.M. is 65888	568 928 The L.C.M. is 65888	568 928 The L.C.M. is 65888	✓
✓	8 7 The L.C.M. is 56	8 7 The L.C.M. is 56	8 7 The L.C.M. is 56	✓

Passed all tests! ✓

2) Evaluating the Results of Machine Learning Algorithms

Read Actual values Vs Predicted Values from the User.

Compute the following:

A) Confusion Matrix

B) Accuracy

C) Specificity

D) Sensitivity

E) Precision

F) Recall

G) Misclassification Error

```
In [1]: y = ['0', '1', '0', '1', '1', '1', '0', '1', '0', '1', '0', '0', '0', '1', '1', '1', '0', '1', '1', '0']
        y_pred = ['0', '0', '0', '0', '1', '0', '1', '1', '1', '1', '0', '0', '0', '0', '1', '0', '1', '1', '1', '0']
        print(y)
        print(y_pred)

['0', '1', '0', '1', '1', '1', '0', '1', '0', '1', '0', '0', '0', '1', '1', '1', '0', '1', '1', '0']
['0', '0', '0', '0', '1', '0', '1', '1', '1', '1', '0', '0', '0', '0', '1', '0', '1', '1', '1', '0']
```

```
print(y)  
print(y_pred)  
[0, 1, 0, 1, 1, 1, 0, 1, 0, 1, 0, 0, 1, 1, 1, 0, 1, 1, 0]  
[0, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 1, 1, 0]  
  
In [3]: j = 0  
TP, TN, FP, FN = 0, 0, 0, 0  
for i in y:  
    if i == '1' and y_pred[j] == '1':  
        TP+=1  
    if i == '0' and y_pred[j] == '0':  
        TN+=1  
    if i == '1' and y_pred[j] == '0':  
        FP+=1  
    if i == '0' and y_pred[j] == '1':  
        FN+=1  
    j+=1  
  
confusion_matrix = [TP, TN, FP, FN]  
print('A) Confusion Matrix: ', confusion_matrix)  
  
ACC = (TP+TN)/(TP+FP+TN+FN)  
print('B) Accuracy: ', ACC)  
  
SP = TN/(TN+FP)  
print('C) Specificity: ', SP)  
  
SN = TP/(TP+FN)  
print('D) Sensitivity: ', SN)  
  
PREC = TP/(TP+FP)  
print('E) Precision: ', PREC)  
  
REC = TP/(TP+FN)  
print('F) Recall: ', REC)  
  
MCE = 1-ACC  
print('G) Missclassification Error: ', MCE)  
  
A) Confusion Matrix: [6, 7, 5, 2]  
B) Accuracy: 0.65  
C) Specificity: 0.5833333333333334  
D) Sensitivity: 0.75  
E) Precision: 0.5454545454545454  
F) Recall: 0.75  
G) Missclassification Error: 0.35
```

- A) Confusion Matrix: [6, 7, 5, 2]
- B) Accuracy: 0.65
- C) Specificity: 0.5833333333333334
- D) Sensitivity: 0.75
- E) Precision: 0.5454545454545454
- F) Recall: 0.75
- G) Missclassification Error: 0.35