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ROLL NUMBER: 546

COURSE: MSc CS

SUBJECT: BIOINFORMATICS

TOPIC: PAIRWISE SEQUENCE ALIGNMENT

Practical No: 1

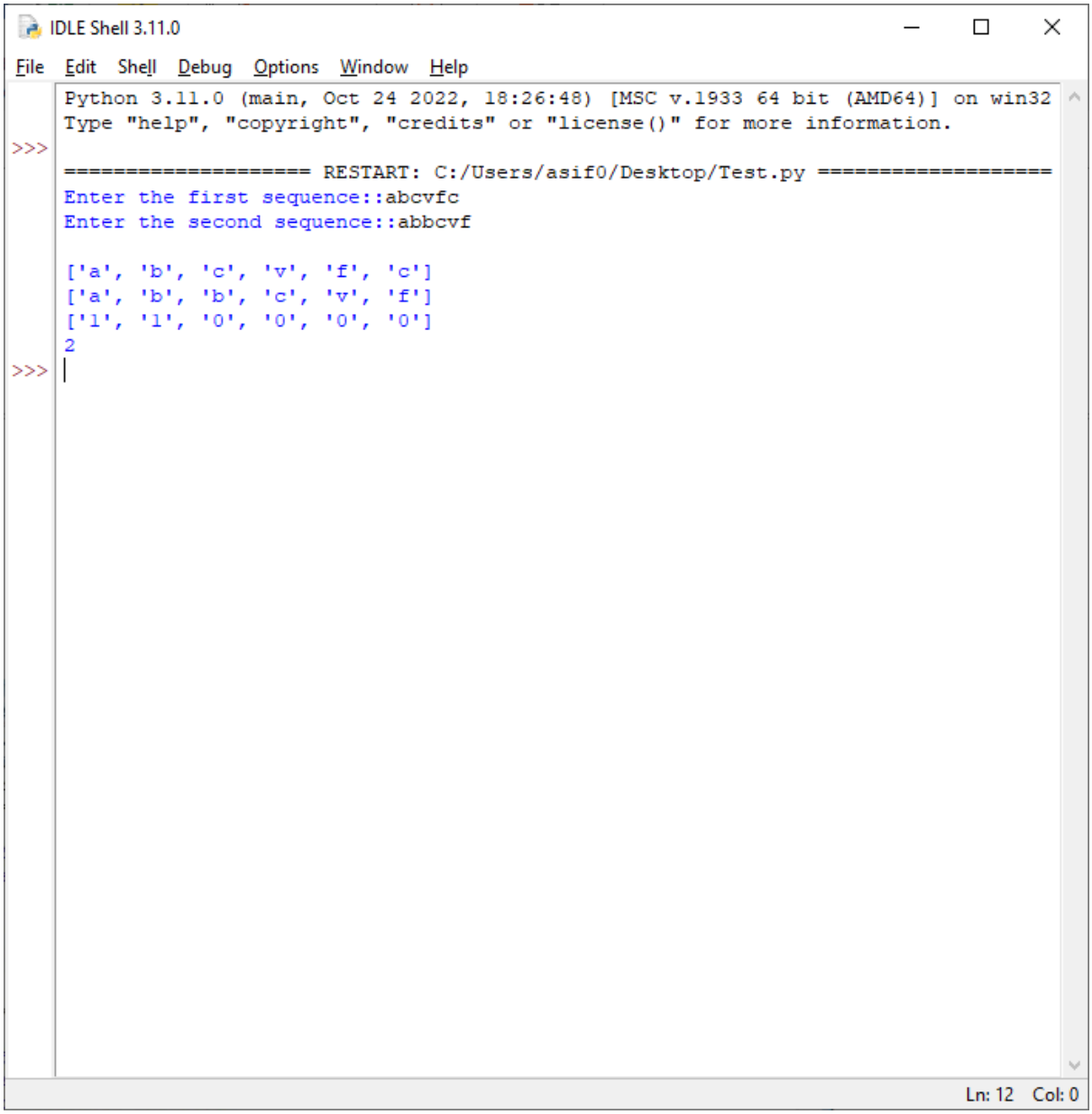
Aim: Write a Python/Java code to perform pairwise alignment. Take 2 sequences from user and calculate the score.

Code:

```
se1=input("Enter the first sequence::")
se2=input("Enter the second sequence::")
seq1=list(se1)
seq2=list(se2)
score=[]

def Pairwise_alignment(a,b):
    gap(a,b)
    print(a)
    print(b)
    value=0
    length=len(a)
    for i in range(0,length):
        if(a[i]==b[i]):
            score.append('1')
            value=value+1
        else:
            score.append('0')
    print(score)
    print(value)

def gap(a,b):
    if(len(a)==len(b)):
        print()
```

```
    else:
        k=int(input("enter the position to insert::"))
        if (len(a)<len(b)):
            a.insert(k,'-')
        else:
            b.insert(k,'-')
    return(a,b)

Pairwise_alignment(seq1,seq2)
```

OUTPUT:


IDLE Shell 3.11.0
File Edit Shell Debug Options Window Help
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/asif0/Desktop/Test.py ==========
Enter the first sequence::abcvfc
Enter the second sequence::abbcvf
['a', 'b', 'c', 'v', 'f', 'c']
['a', 'b', 'b', 'c', 'v', 'f']
['1', '1', '0', '0', '0', '0']
2
>>>
Ln: 12 Col: 0