```python
#Q1          SID-21107052
#Python program for coding on a string
#assigning variable to the string
word="Python is a case sensitive language"

#finding the no. of letters in the string
print("length of word is : ", len(word) , end=" letters  \n" )

#reversing the order of string
print(word[::-1])

#storing part of string
print(word[10::])

#replacing the stored part by another str
print(word.replace("a case sensitive" , "object oriented"))

#finding index of a substring
print(word.find('a'))

#removing the white spaces from string
print(word.replace(" ",""))
```

input

```
length of word is :  35 letters
egaugnal evitisnes esac a si nohtyP
a case sensitive language
Python is object oriented language
10
Pythonisacasesensitivelanguage


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
#Q2          SID-21107052
# python program for storing and printing name, sid , branch and cgpa
#taking input from user about his/her details
name=input("enter your name : ")
sid=int(input("enter your SID : "))
branch=input("enter your department name : ")
cgpa=float(input("enter your cgpa : "))

#printing those details in format given
print("Hey," ,  name , "Here !")
print("My SID is " , sid)
print( "I am from" , branch , "department and my CGPA is" , cgpa)
```

input

```
enter your name : Gurkirat Singh
enter your SID : 21107052
enter your department name : Mechanical
enter your cgpa : 8.0
Hey, Gurkirat Singh Here !
My SID is  21107052
I am from Mechanical department and my CGPA is 8.0


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
#Q3          SID-21107052
# Python program for doing bitwise calculations on 2 given numbers
#assigning value to given variables
a=56
b=10

#printing the result using bitwise operators
print(a&b)
print(a|b)
print(a^b)
print(a<<2 , b<<2)
print(a>>2 , b>>4)
```

Input

```
8
58
50
224 40
14 0


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
#Q4          SID-21107052
#python program for finding 'name' in string input
# asking user for string input
word=input("enter word : ")

# fining 'name' in string and giving ouput as 'yes' or 'no' format using replace function
d=str('name' in word).replace("True" , "Yes").replace("False" , "No")

#printing output
print(d)
```

input

```
enter word : abcname
Yes


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
#Q5          SID-21107052
#python program for checking if triangle can be formed from 3 sides whose lengths are user defined
# taking input of length of sides frm user
side1=int(input("length of first side :"))
side2=int(input("length of second side :"))
side3=int(input("length of third side :"))

# using the condition 'sum of 2 sides greater than 3rd side' to check feasibility
test1=bool(side1<(side2+side3))
test2=bool(side2<(side1+side3))
test3=bool(side3<(side1+side2))

# checking if all conitions are true or not and then giving output in 'yes' and 'no' format
d = str(test1 and test2 and test3).replace("True" , "Yes").replace("False" , "No")

#printing answer
print(d)


```

input

```
length of first side :5
length of second side :3
length of third side :4
Yes


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
#Q6          SID-21107052
#python program for counting no. of bits to be flipped to convert one number to other
#asing user for input of 2 numbers
num1=int(input("enter 1st number : "))
num2=int(input("enter 2nd number : "))

#using XOR to find number of different bits
c=num1^num2

#we need to find total '1's in XOR and that will be required bits
# converting it to a string
d=str(bin(c))


#assigning values to vairables required for loop
occurences=0
start=0

# running loop where it finds 1
for i in range(len(d)):

# if j get a return value of -1 then 1 is absent at that index
    j=d.find('1' , start)
    if j !=-1:

        # when 1 is present it shifts to next index and total occurences of'1' is increased
        start=j+1
        occurences += 1

#printing the two numbers in binary and their bits flipping answer
print("1st number = " , bin(num1))
print("2nd number = " , bin(num2))
print(occurences , "bits need to be flipped")
```