```python
#Q1# For a given input string “Python is a case sensitive language”.
Write python code for the following:
input_str = "Python is a case sensitive language"

#a. Find the length of the input string.
print(len(input_str))

#b. Reverse the order of the string in one line code.
print(input_str[-1::-1])

#c. Using Slice function store “a case sensitive” in new string.
new_str = input_str[10:-9]
print(new_str)

#d. Replace “a case sensitive” with “object oriented”.
new_str = input_str[0:10] + "object oriented" + input_str[-9:]
print(new_str)

#e. Find index of substring “a” in the given input string.
index = input_str.find('a',)
print(index)

#f. Remove the white spaces from the given input string.
input_str_1 = input_str.replace(" ", "")
print(input_str_1)
```

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35
egaugnal evitisnes esac a si nohtyP
a case sensitive
Python is object oriented language
10
Pythonisacasesensitivelanguage
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```python
'''#Q2# Store your name, SID, department name and CGPA into different
variables. With the help of String formatting print'''
      # Hey, ABC Here!
      # My SID is 2110XXXX
      # I am from XYZ department and my CGPA is 9.9

Name = "Shubham"
SID = "21107042"
Dept = "Mechanical Engineering"
CGPA = "9.7"
print("Hey, " + Name + " Here! \nMy SID is " + SID + "\nI am from " +
Dept + " department and my CGPA is " + CGPA)
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Hey, Shubham Here!
My SID is 21107042
I am from Mechanical Engineering department and my CGPA is 9.7
```

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'''#Q3# For a=56 and b=10 with the help of bitwise operators calculate
the following:
        a. a&b
        b. a|b
        c. a^b
        d. Left shift both a and b with 2 bits.
        e. Right shift a with 2 bits and b with 4 bits.'''

a = 56
b = 10
print(a&b)
print(a|b)
print(a^b)
print(a<<2)
print(b<<2)
print(a>>2)
print(b>>4)
```

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8
58
50
224
40
14
0
```

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#Q4# Write a python program to check if the word “name” is present in
the string entered by the user:
   # (Print : “Yes” or “No”)

string = str(input("Write any string/sentence here: "))
if "name" in string:
    print("Yes, 'name' is present in the string entered.")
else:
    print("No, 'name' is absent in the string entered.")
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Write any string/sentence here: My name is Anthony
Gonsalves........Gonsalves!!
Yes, 'name' is present in the string entered.
```

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'''#Q5# For any three lengths, there is a simple test to see if it is
possible to form a triangle.
        If any of the three lengths is greater than the sum of the
other two, then you cannot form a triangle.
        Otherwise, Enter three sides of a triangle, converts them to
integers, and to check whether the given input
        lengths can form a triangle or not (Print : “Yes” or “No”).
[Don’t use if else here].'''

p = int(input("Write the length of first side of triangle here: "))
q = int(input("Write the length of second side of triangle here: "))
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r = int(input("Write the length of third side of triangle here: "))
while p+q>r and p+r>q and q+r>p and p>0 and q>0 and r>0 :
    print("Yes, these sides can form a triangle.")
    break
while p+q<=r or p+r<=q or q+r<=p or p<=0 or q<=0 or r<=0:
    print("No, these sides can't form a triangle.")
    break
```

```
Write the length of first side of triangle here: 11
Write the length of second side of triangle here: 12
Write the length of third side of triangle here: 23
No, these sides can't form a triangle.
```

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#Q5#################### Alternate Solution(without if/else), just that
output is not in Yes/No ##########################

p = int(input("Write the length of first side of triangle here: "))
q = int(input("Write the length of second side of triangle here: "))
r = int(input("Write the length of third side of triangle here: "))
x = bool(p+q>r and p+r>q and q+r>p and p>0 and q>0 and r>0)
print("A triangle with above dimensions is possible:", x)
```

```
Write the length of first side of triangle here: 11
Write the length of second side of triangle here: 12
Write the length of third side of triangle here: 23
A triangle with above dimensions is possible: False
```

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#Q6# Given two numbers ‘a’ and b’. Write a program to count number of
bits needed to be flipped to convert ‘a’ to ‘b’.

num_1 = int(input("Write any integer here: "))
num_2 = int(input("Write any integer here: "))
xor = num_1^num_2
check_str = str(bin(xor))
print("The number of bits needed to be flipped to convert 'num_1' to
'num_2' are:", check_str.count('1'))
```

```
Write any integer here: 12
Write any integer here: 32
The number of bits needed to be flipped to convert 'num_1' to 'num_2'
are: 3
```