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Ques. swap two variables?

1. Using a temporary variable

```
a = 11
b = 7

temp = a
a = b
b = temp

print(a) # 7
print(b) # 11
```

2. Without a temporary variable

```
a = 11
b = 7

a, b = b, a

print(a) # 7
print(b) # 11
```

3. Using arithmetic operators

```
a = 11
b = 7

a = a + b # a = 18, b = 7
b = a - b # a = 18, b = 11
a = a - b # a = 7, b = 11

print(a) # 7
print(b) # 11
```

4. Using multiplication and division operator

```
P = int( input("Please enter value for P: "))
Q = int( input("Please enter value for Q: "))

# To Swap the values of two variables using Addition and subtraction operator
P = P * Q
Q = P / Q
P = P / Q

print ("The Value of P after swapping: ", P)
print ("The Value of Q after swapping: ", Q)

# XOR swap
P = P ^ Q
Q = P ^ Q
P = P ^ Q

print ("The Value of P after swapping: ", P)
print ("The Value of Q after swapping: ", Q)
```

Ques. Program to check if a number is Even or odd?

```
# 1 Option
num = int(input("Enter a number: "))
if (num % 2) == 0:
    print("{0} is Even".format(num))
else:
    print("{0} is Odd".format(num))

# 2 option
def evenOrOdd(n):
    if n%2 == 0:
        print('even Number hai')
    else:
```

```
print('Odd Number hai')
evenOrOdd(6)
```

Ques. To Check if a String is a Palindrome

```
def isPalindrome(string):
    rev = string[::-1]
    # rev = ''.join(reversed(s))    # 2nd Option to reversed string
    if(rev == string):
        print("The string is a palindrome!");
    else:
        print("The string isn't a palindrome!");

s = "malayalam"
isPalindrome(s)
```

Output:- The string is a palindrome!

```
x = "malayalam"

w = ""
for i in x:
    w = i + w
if (x == w):
    print("Yes")
else:
    print("No")
```

Output:- Yes

Ques. To Check if a Number is a Palindrome

```
num = int(input("Enter a number:"))
temp = num
reverse = 0
while temp > 0:
    remainder = temp%10
    reverse = (reverse*10)+remainder
    temp = temp//10
if num == reverse:
    print('Palindrome')
else:
    print("Not Palindrome")
```

Ques. Check Prime Number Or Not?

```
num = int(input("Enter a number: "))
if num > 1:
    for i in range(2,num):
        if (num % i) == 0:
            print(num,"is not a prime number")
            break
    else:
        print(num,"is a prime number")
else:
    print(num,"is not a prime number")
```

Output:- 3
3 is a prime number

Ques. Prime Number Print between lower to upper

```
lower = int(input(" Please Enter the Minimum Value: "))
upper = int(input(" Please Enter the Maximum Value: "))

print("Prime numbers between", lower, "and", upper, "are:")

for num in range(lower, upper + 1):
    # all prime numbers are greater than 1
    if num > 1:
        for i in range(2, num):
            if (num % i) == 0:
                break
        else:
            print(num)
```

Output:-

11
13
17
19

Ques. Find the Factorial of a Number?

- factorial of 6 is $6 \times 5 \times 4 \times 3 \times 2 \times 1$ which is 720.

```
num = int(input("Enter a number: "))
factorial = 1
if num < 0:
    print(" Factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
```

```
for i in range(1,num + 1):
    factorial = factorial*i
print("The factorial of",num,"is",factorial)
```

Output:-

Enter a number: 6

The factorial of 6 is 720

Ques. Find Fibonacci series up to n

```
def fibonacci(n):
    first = 0
    second = 1
    if n < 0:
        print("Incorrect input")
    elif n == 0:
        return 0
    elif n == 1:
        return second
    else:
        print(first)
        print(second)
        for i in range(2, n):
            third = first + second
            first = second
            second = third
            print(third)
```

fibonacci(9)

Output:- 0 1 1 2 3 5 8 13 21

- Using While Loop

```
def fibonacci(n):
    first = 0
    second = 1
    count = 0
    if n < 0:
        print("Incorrect input")
    elif n == 0:
        return 0
    elif n == 1:
        return second
    else:
        while count < n:
            print(first)
            third = first + second
            # At last, we will update values
```

```

        first = second
        second = third
        count += 1
    fibonacci(9)

```

Ques. Reverse a Number

```

# using a while loop
Number = int(input("Please Enter any Number: "))
Reverse = 0
while(Number > 0):
    Reminder = Number %10
    Reverse = (Reverse *10) + Reminder
    Number = Number //10

print("Reverse of entered number is = %d" %Reverse)

```

Output:-
 Please Enter any Number: 68765
 Reverse of entered number is = 56786

```

# Using String slicing
num = 9412
print(str(num)[::-1])

```

Output:-
 num = 2149

```

# Using Recursion
num = int(input("Enter the number: "))
revr_num = 0 # initial value is 0. It will hold the reversed number
def recur_reverse(num):
    global revr_num # We can use it out of the function
    if (num > 0):
        Reminder = num % 10
        revr_num = (revr_num * 10) + Reminder
        recur_reverse(num // 10)
    return revr_num

```

```

revr_num = recur_reverse(num)
print("Reverse of entered number is = %d" % revr_num)

```

Output:-
 Enter the number: 1284
 Reverse of entered number is = 4821

Ques. Check if the number is an Armstrong number or not?

- $153 = 1^3 + 5^3 + 3^3 = 153$

- $1634 = 1111 + 6666 + 3333 + 4444 = 1634$

```

num = int(input("Enter a number: "))
len = len(str(num))
sum = 0
temp = num

while temp > 0:
    digit = temp % 10
    sum = sum + digit ** len
    temp = temp//10

if num == sum:
    print(num,"is an Armstrong number")
else:
    print(num,"is not an Armstrong number")

```

Output:-

Enter a number: 1634
1634 is an Armstrong number

Ques. program to convert a list to string

```

def listToString(s):
    blank = ""
    for element in s:
        blank = blank + ' ' + element
    print(blank)

s = ['Hello', 'mohit', 'saxena']
listToString(s)

```

Output:- Hellomohitsaxena

- Using list comprehension

```

s = ['I', 'want', 4, 'apples', 'and', 18, 'bananas']
listToStr = ' '.join([str(elem) for elem in s])
print(listToStr)

```

Output:- I want 4 apples and 18 bananas

- Using .join() method

```

def listToString(s):
    str1 = " "

```

```

    return (str1.join(s))

s = ['Hello', 'Mohit', 'Saxena']
print(listToString(s))

```

Output:- Hello Mohit Saxena

- Using map()

```

s = ['I', 'want', 4, 'apples', 'and', 18, 'bananas']
listToStr = ' '.join(map(str, s))
print(listToStr)

```

Program to generate a random number between 0 and 9?

```

import random
print(random.randint(0,9))

```

Output:- 0 se 9 tak ka koi bhi number aa sakta hai.

Calculate the number of words

- Using split method

```

test_string = "Mohit saxena"
res = len(test_string.split())
print ("The number of words in string are : " + str(res))

```

Output:- 2

-

```

na = input("Enter a string: ")
space = 0
for i in na:
    if i==" ":
        space = space+1
print(space)
print(space+1)

```

Output:-

Enter a string: mohit saxena

1
2

Print A to Z ?

- Using String module

```
import string

for i in string.ascii_lowercase:
    print(i, end=" ")

Output:- a b c d e f g h i j k l m n o p q r s t u v w x y z
-----
import string

for i in string.ascii_uppercase:
    print(i, end=" ")

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
```

- Using chr() Function

```
for i in range(97,123):
    print(chr(i), end=" ")

a b c d e f g h i j k l m n o p q r s t u v w x y z
-----
for i in range(65,91):
    print(chr(i), end=" ")

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
```

Ques. How to reverse a sentence in Python input by User?

```
inputsentence = input("Please input a sentence : ")
splitString = inputsentence.split()      # ['i', 'love', 'Mohit', 'Saxena']
reversedString = reversed(splitString)
print(" ".join(reversedString))
```

Output:- i love Mohit Saxena
Saxena Mohit love i

- 2 option

```
my_str = input("Please enter your own String : ")
str = ''
for i in my_str:
```

```
str = i + str
print("\nThe Original String is: ", my_str)
print("The Reversed String is: ", str)

Output:-
The Original String is:  i love Mohit Saxena
The Reversed String is:  anexaS tihoM evol i
```

Ques. Count the number of vowels in a string?

```
na = input("Enter a string: ")
count = 0
for i in na:
    if(i=='A' or i=='a' or i=='E' or i=='e' or i=='I' or i=='i' or i=='O' or
i=='O' or i=='U' or i=='u'):
        count = count+1
print("Number of vowels ", count)

Output:-
Enter a string: Mohit saxena
Number of vowels  4
```

Ques. Multiply two numbers without using arithmetic operator?

```
num1=int(input("Enter a number for num1: "))
num2=int(input("Enter a number for num2: "))
product=0
for i in range (1,num2+1): #Python for loop
    product=product+num1    #product+=num1
print("Multiplication of numbers: ",product)

Output:-
Enter a number for num1: 4
Enter a number for num2: 4
Multiplication of numbers:  16
```

String Pattern

```
# Program 1:-

def pypart(n):
    for i in range(0, n):
        for j in range(0, i+1):
            print("* ",end="")
        print()
n = 5
```

```
pypart(n)
```

Output:-

```
*
* *
* * *
* * * *
* * * * *
```

```
=====
```

```
str1 = input("enter the string: ")
len = len(str1)
for i in range(len):
    for j in range(i+1):
        print(str1[i], end="")
    print()
```

Output:-

```
enter the string: Mohit
M
oo
hhh
iiii
ttttt
```

```
=====
```

```
str1 = input("enter the string: ")
len = len(str1)
for i in range(len):
    for j in range(i+1):
        print(str1[j], end="")
    print()
```

Output:-

```
enter the string: mohit
m
mo
moh
mohi
mohit
```

Python program to convert a list to string

```
def listToString(s):
    blank = ""
    for element in s:
        blank = blank + ' ' + element
    print(blank)

s = ['Hello', 'mohit', 'saxena']
listToString(s)
```

Output:- Hellomohitsaxena

```
-----  
  
# Using list comprehension  
s = ['I', 'want', 4, 'apples', 'and', 18, 'bananas']  
listToStr = ' '.join([str(elem) for elem in s])  
print(listToStr)
```

Output:- I want 4 apples and 18 bananas

```
-----  
  
# Using .join() method  
def listToString(s):  
    str1 = " "  
    return (str1.join(s))  
  
s = ['Hello', 'Mohit', 'Saxena']  
print(listToString(s))
```

Output:- Hello Mohit Saxena

```
-----  
  
# Using map()  
s = ['I', 'want', 4, 'apples', 'and', 18, 'bananas']  
listToStr = ' '.join(map(str, s))  
print(listToStr)
```

<https://prepinsta.com/python-program/find-a-number-is-palindrome-or-not/>