

# Sahil Saini Salaria

Reg 180905048

Roll No 11 C

1. Write a program to find the area of rectangle. Take input from user.

Eg. `x= int(input('Enter number:'))`

```
In [1]: length = int(input("Enter number:"))
        breadth = int(input("Enter number:"))

        print("length is : " , length )
        print("breadth is : " , breadth)
        print("Area of rectangle is : " , length * breadth)

length is : 5
breadth is : 7
Area of rectangle is : 35
```

2. Write a program to swap the values of two variables.

```
In [2]: def swap():
        a = 5
        b = 7
        print("a = " , a , "b= " , b)

        temp = a
        a = b
        b = temp

        print("a = " , a , "b= " , b)

swap()

a = 5 b= 7
a = 7 b= 5
```

3. Write a program to find whether a number is even or odd.

```
In [3]: def odd_or_even(num):
        return (num % 2) == 0

print(odd_or_even(7))

False
```

**4. Write a program to check the largest among the given three numbers.**

```
In [4]: def largest_among_three(a,b,c):  
  
        if a > b and a > c:  
            return a  
        elif b > a and b > c:  
            return b  
        else:  
            return c  
  
a = 5  
b = 6  
c = 7  
print(largest_among_three(a,b,c))
```

7

**5. Write a program to demonstrate while loop with else.**

```
In [5]: for i in range(1,5):  
        print("Loop iteration : " , i)  
    else:  
        print("inside else")
```

```
Loop iteration : 1  
Loop iteration : 2  
Loop iteration : 3  
Loop iteration : 4  
inside else
```

**6. Write a program to print the prime numbers for a user provided range.**

```
In [1]: lower = int(input())
        upper = int(input())

        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)
```

```
10
100
Prime numbers between 10 and 100 are:
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
```

**7. Write a program to demonstrate List functions and operations.**

```

In [7]: my_list = [1,2,3,4]
        print(my_list)

        my_list.append(5)
        print(my_list)

        my_list.pop()
        print(my_list)

        my_list.insert(2,100)
        print(my_list)

        my_list2 = my_list.copy()
        print(my_list2)

        my_list.reverse()
        print(my_list)

        my_list.sort()
        print(my_list)

        my_list.count(2)
        print(my_list)

        print("index of 2 in the list is :", my_list.index(2))

        my_list.clear()
        print(my_list)

[1, 2, 3, 4]
[1, 2, 3, 4, 5]
[1, 2, 3, 4]
[1, 2, 100, 3, 4]
[1, 2, 100, 3, 4]
[4, 3, 100, 2, 1]
[1, 2, 3, 4, 100]
[1, 2, 3, 4, 100]
index of 2 in the list is : 1
[]

```

**8. Consider the tuple(1,3,5,7,9,2,4,6,8,10). Write a program to print half its values in one line and the other half in the next line.**

```

In [8]: my_tuple = (1,3,5,7,9,2,4,6,8,10)
        list1 = []
        list2 = []

        for i in my_tuple:
            if i % 2 == 0:
                list1.append(i)
            else:
                list2.append(i)

        print(list1)
        print(list2)

[2, 4, 6, 8, 10]
[1, 3, 5, 7, 9]

```

**9. Consider the tuple (12, 7, 38, 56, 78 ). Write a program to print another tuple whose values are even number in the given tuple.**

```
In [3]: input = (12, 7, 38, 56, 78 )

even_list = []

for i in input:
    if i % 2 == 0:
        even_list.append(i)

even_tuple = tuple(even_list)
print(even_tuple)

(12, 38, 56, 78)
```

**10. Write a Python program to print negative Numbers in a List using for loop. Eg. [11, -21, 0, 45, 66, -93].**

```
In [5]: input_list = [11, -21, 0, 45, 66, -93]

for i in input_list:
    if i < 0:
        print(i)

-21
-93
```

**11. Write a program to print negative Numbers in a List using while loop.**

```
In [7]: input_list = [11, -21, 0, 45, 66, -93]
i = 0

while i < 6:
    if input_list[i] < 0:
        print(input_list[i])
    i = i + 1

-21
-93
```

**12. Write a Python program to count positive and negative numbers in a List.**

```
In [13]: input_list = [11, -21, 0, 45, 66, -93]
```

```
positives = 0
negatives = 0

for i in input_list:
    if i < 0:
        negatives = negatives + 1
    elif i > 0:
        positives = positives + 1

print("positives: " , positives)
print("negatives: " , negatives)
```

```
positives: 3
negatives: 2
```

### 13. Write a Python program to remove all even elements from a list

```
In [15]: num_list = [11, 21, 10, 45, 66, 93]
```

```
print(num_list)

for i in num_list:
    if i % 2 == 0:
        num_list.remove(i)

print(num_list)
```

```
[11, 21, 10, 45, 66, 93]
[11, 21, 45, 93]
```

### 14. Define a dictionary containing Students data {Name, Height, Qualification}.

- Convert the dictionary into DataFrame
- Declare a list that is to be converted into a new column (Address)
- Using 'Address' as the column name and equate it to the list and display the result.

```
In [29]: my_dict = { "Name" : [ "Kaustav" , "Sahil" ],  
"Height" : [ "170 cm" , "165 cm" ] ,  
"Qualification" : ["B. Tech CSE" , "B. Tech CSE"] }
```

```
print(my_dict)  
print()
```

```
import pandas as pd
```

```
df_my_dict = pd.DataFrame.from_dict(my_dict)  
print(df_my_dict)  
print()
```

```
address_list = ["Gurgaon" , "Jammu"]  
df_my_dict["Address"] = address_list  
print(df_my_dict)
```

```
{'Name': ['Kaustav', 'Sahil'], 'Height': ['170 cm', '165 cm'], 'Qualification': ['B. Tech CSE', 'B. Tech CSE']}
```

	Name	Height	Qualification
0	Kaustav	170 cm	B. Tech CSE
1	Sahil	165 cm	B. Tech CSE

	Name	Height	Qualification	Address
0	Kaustav	170 cm	B. Tech CSE	Gurgaon
1	Sahil	165 cm	B. Tech CSE	Jammu

## 15. Define a dictionary containing Students data {Name, Height, Qualification}.

- Convert the dictionary into DataFrame
- Use DataFrame.insert() to add a column and display the result.

```
In [34]: my_dict = { "Name" : [ "Kaustav" , "Sahil" ],  
"Height" : [ "170 cm" , "165 cm" ] ,  
"Qualification" : ["B. Tech CSE" , "B. Tech CSE"] }
```

```
print(my_dict)  
print()
```

```
import pandas as pd
```

```
df_my_dict = pd.DataFrame.from_dict(my_dict)  
print(df_my_dict)  
print()
```

```
address_list = ["Gurgaon" , "Jammu"]  
df_my_dict.insert(column="Address" , value=address_list , loc=3 )  
print(df_my_dict)
```

```
{'Name': ['Kaustav', 'Sahil'], 'Height': ['170 cm', '165 cm'], 'Qualification': ['B. Tech CSE', 'B. Tech CSE']}
```

```
      Name  Height Qualification  
0  Kaustav  170 cm    B. Tech CSE  
1    Sahil  165 cm    B. Tech CSE
```

```
      Name  Height Qualification  Address  
0  Kaustav  170 cm    B. Tech CSE  Gurgaon  
1    Sahil  165 cm    B. Tech CSE    Jammu
```

**End**

```
In [ ]:
```