

## 235229122-lab2-pavithiran-v

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Task to be done

1. Print the sum of current and previous number

```
[15]: #getting input from the user
num = int(input("Enter the number :"))
prenum = num - 1
print(num + prenum)
```

Enter the number :34

67

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2. Write a program to accept characters till the user enters null and count number of times an alphabet (b, where b can be any alphabet) is entered

```
[17]: lit = list()

while True:
    value = input("Enter the character :")
    if value == "":
        break
    else:
        lit.append(value)

list2 = list(set(lit))
print(list2)
for i in list2:
    print("count of {} is {}".format(i, lit.count(i)))
```

Enter the character :d

Enter the character :c

Enter the character :g

Enter the character :c

Enter the character :d

Enter the character :h

Enter the character :h

Enter the character :e

```
Enter the character :  
['c', 'h', 'd', 'g', 'e']  
count of c is 2  
count of h is 2  
count of d is 2  
count of g is 1  
count of e is 1
```

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3. Use a loop to display elements from given list present at odd index positions

```
[18]: list3 = list()  
while True:  
    values = input("Enter the character :")  
    if values == 'done':  
        break  
    list3.append(values)  
  
for i in range(0, len(list3), 2):  
    print(list3[i])
```

```
Enter the character :d  
Enter the character :c  
Enter the character :g  
Enter the character :g  
Enter the character :e  
Enter the character :g  
Enter the character :c  
Enter the character :  
Enter the character :done  
d  
g  
e  
c
```

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4. Write a program to calculate square and cube of all numbers from 1 to a given number

```
[24]: a = int(input("Enter the value :"))  
for i in range(1, a+1):  
    print("The square of {} is {}".format(i, i**2))  
    print("The cube of {} is {}".format(i, i**3))  
    print()
```

```
Enter the value :9  
The square of 1 is 1  
The cube of 1 is 1
```

The square of 2 is 4  
The cube of 2 is 8

The square of 3 is 9  
The cube of 3 is 27

The square of 4 is 16  
The cube of 4 is 64

The square of 5 is 25  
The cube of 5 is 125

The square of 6 is 36  
The cube of 6 is 216

The square of 7 is 49  
The cube of 7 is 343

The square of 8 is 64  
The cube of 8 is 512

The square of 9 is 81  
The cube of 9 is 729

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5. Write a program to display numbers divisible by both 3 and 9 from a list.

```
[31]: list4 = list()
while True:
    values = int(input("Enter the character :"))
    if values < 0:
        break
    list4.append(values)

for i in list4:
    if i % 3 == 0 and i % 9 == 0:
        print("{} is divisible 3 and 9".format(i))
```

```
Enter the character :3
Enter the character :-1
```

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6. Implement a program that validates a password based on certain conditions. Prompt the user to enter a password and check if it meets the following requirements: at least 8 characters long, contains at least one uppercase letter, one lowercase letter, one digit, and one special character.

```
[11]: password = input("Enter the password: ")
flag = 0
while True:
    if (len(password)<8):
        flag = -1
        break
    elif not re.search("[a-z]", password):
        flag = -1
        break
    elif not re.search("[A-Z]", password):
        flag = -1
        break
    elif not re.search("[0-9]", password):
        flag = -1
        break
    elif not re.search("[_$@]", password):
        flag = -1
        break
    elif re.search("\s", password):
        flag = -1
        break
    else:
        flag = 0
        print("your entered: " ,password, " Valid password")
        break
if flag == -1:
    print("your entered: ", password, " Not valid password")
```

Enter the password: Kumar@123

your entered: Kumar@123 Valid password

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7. Write a program that calculates the factorial of a given number. Prompt the user to enter a number and display its factorial.

```
[10]: num = int(input("Enter a number :"))
sum = 1
for i in range(1, num+1):
    sum *= i
print(sum)
```

Enter a number : 3

6

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8. Create a program that checks whether a given number is prime or not. Prompt the user to enter a number and display a message indicating whether the number is prime or not.

```
[37]: num = int(input("Enter a number :"))
flag = 0
if num > 1:
    for i in range(2, int(num/2) + 1):
        if num % i == 0:
            print("The given number is not a prime number")
            flag = -1
            break
else:
    print("The given number is a prime ")
if flag == 0:
    print("the given number is prime number")
```

Enter a number : 10

The given number is not a prime number

---

9. Write a program that generates and prints the Fibonacci series up to a given number. The Fibonacci series is a sequence of numbers where each number is the sum of the two preceding ones (starting from 0 and 1).

```
[7]: num = int(input("Enter the number :"))
val = [0, 1]
while val[-1] + val[-2] <= num:
    value = val[-1] + val[-2]
    val.append(value)
print("The fibonacci series up to", num, ": ", end = " ")
for i in val:
    print(i, end=" ")
```

Enter the number : 9

The fibonacci series up to 9 : 0 1 1 2 3 5 8

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10. Implement a program that converts temperatures from Celsius to Fahrenheit and vice versa. Prompt the user to enter a temperature and a unit (Celsius or Fahrenheit) and display the converted temperature.

```
[12]: def fah_to_cel(far):
    cel = (far - 32)*5/9
    return cel
def cel_to_fah(cel):
    fah = (cel * 9/5) + 32
    return fah
temp = float(input("Enter the temperatures :"))
unit = input("Entered value is: type fahrenheit(f)/Celsius(c)")
if unit == 'f':
```

```
    print("{} degree fahrenheit to {}".format(temp, fah_to_cel(temp)))
elif unit == 'c':
    print("{} degree celsius to {}".format(temp, cel_to_fah(temp)))
else:
    print("Invalid unit Entered!")
```

Enter the temperatures : 6

Entered value is: type fahrenheit(f)/Celsius(c) c

6.0 degree celsius to 42.8

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