

## Basics-cs(2)

### Calculate the multiplication and sum of two numbers

```
In [7]: num1=20
num2=30
product=num1*num2
if product <= 1000:
    print("Result of Product:",product)
else:
    result = number1 + number2
    print("Sum of the numbers:",result)

num1=40
num2=30
product=num1*num2
if product <= 1000:
    print("Result of Product:",product)
else:
    result = num1 + num2
    print("Sum of the numbers:",result)
```

Result of Product: 600

Sum of the numbers: 70

### Print the Sum of a Current Number and a Previous number

```
In [8]: print("Printing current and previous number sum in a range(10)")
previous_num = 0
for current_num in range(10):
    total = current_num + previous_num
    print("Current Number", current_num, "Previous Number ", previous_num, " Sum
    previous_num = current_num
```

Printing current and previous number sum in a range(10)

Current Number 0 Previous Number 0 Sum: 0

Current Number 1 Previous Number 0 Sum: 1

Current Number 2 Previous Number 1 Sum: 3

Current Number 3 Previous Number 2 Sum: 5

Current Number 4 Previous Number 3 Sum: 7

Current Number 5 Previous Number 4 Sum: 9

Current Number 6 Previous Number 5 Sum: 11

Current Number 7 Previous Number 6 Sum: 13

Current Number 8 Previous Number 7 Sum: 15

Current Number 9 Previous Number 8 Sum: 17

### Print characters present at an even index number

```
In [12]: a=input("Enter a String:")
print("The original string is ",a)
print("Printing only even index chars")
for i in x[0::2]:
    print(i)
```

```
Enter a String:Pavithra
The original string is  Pavithra
Printing only even index chars
P
v
t
r
```

### Remove first n characters from a string

```
In [14]: str1 = input("Enter a string: ")
n = int(input("Enter the number of characters to remove: "))
if n < len(str1):
    result = str1[n:]
    print("Result:", result)
else:
    print("Error: n must be less than the length of the string")
```

```
Enter a string: Pavi
Enter the number of characters to remove: 2
Result: vi
```

### Check if the first and last numbers of a list are the same

```
In [18]: num1 = [10, 20, 30, 40, 10]
num2 = [75, 65, 35, 75, 30]

if num1[0] == num1[-1]:
    print(num1, "is True")
else:
    print(num1, "is False")

if num2[0] == num2[-1]:
    print(num2, "is True")
else:
    print(num2, "is False")
```

```
[10, 20, 30, 40, 10] is True
[75, 65, 35, 75, 30] is False
```

### Display numbers divisible by 5

```
In [21]: list = [10, 20, 33, 46, 55]
print("Given list:", list)
print("Divisible by 5:")
for i in list:
    if i%5==0:
        print(i)
```

```
Given list: [10, 20, 33, 46, 55]
Divisible by 5:
10
20
55
```

### Find the number of occurrences of a substring in a string

```
In [22]: para="Emma is Python Developer. Emma also knows SQL. Emma is a Data Scientist."
print("Emma appeared",para.count("Emma"),"times")
```

```
Emma appeared 3 times
```

### Print the following pattern

```
In [30]: n=int(input("Enter a values:"))
for i in range(1,n+1):
    for j in range(1,i+1):
        print(i, end=" ")
    print()
```

```
Enter a values:5
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

### Check Palindrome Number

```
In [31]: n=int(input("Enter number:"))
if str(n)==str(n)[::-1]:
    print("The given number is palindrome")
else:
    print("The given number is not palindrome")
```

```
Enter number:181
The given number is palindrome
```

### Merge two lists using the following condition

```
In [32]: list1 = [10, 20, 25, 30, 35]
list2 = [40, 45, 60, 75, 90]

#odd from l1,eve from l2
new_list=[list for list in list1 if list%2!=0]+[list for list in list2 if list%2

print("new_list =",new_list)
```

```
new_list = [25, 35, 40, 60, 90]
```

### Get each digit from a number in the reverse order

```
In [33]: given_integer = 7536
reversed_integer = int(str(given_integer)[::-1])
print("Reversed integer:", reversed_integer)
```

```
Reversed integer: 6357
```

### Calculate income tax

```
In [41]: income = 45000
tax = 0
print("The income is", income)
if income > 20000:
    tax += (income - 20000) * 0.2
    income = 20000
if income > 10000:
    tax += (income - 10000) * 0.1
    income = 10000
print(f"The income tax payable is ${tax:.2f}")
```

```
The income is 45000
```

```
The income tax payable is $6000.00
```

### Print multiplication table from 1 to 10

```
In [43]: for i in range(1,11):
for j in range(1,11):
    print(i*j, end="\t")
print()
```

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

**Print a downward half-pyramid pattern of stars**

```
In [45]: for i in range(5,0,-1):  
        for j in range(i,0,-1):  
            print("*", end=" ")  
        print()
```

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

**Get an int value of base raises to the power of exponent**

```
In [47]: base=2  
exp= 5  
result = 1  
for i in range(exp):  
    result *= base  
print(result)  
  
def power(base, exponent):  
    result = 1  
    for i in range(exponent):  
        result *= base  
    return result  
print(power(5,4))
```

```
32  
625
```