

fibonacci series

```
In [9]: num = int(input("enter any number :"))
n1 ,n2 = 0,1
sum = 0
if num <= 0:
    print("Please enter number greater than 0")
else:
    for i in range(0,num):
        print(sum ,end = " ")
        n1 = n2
        n2 = sum
        sum =n1 + n2
```

```
enter any number :5
0 1 1 2 3
```

print the multiplication of a number n

```
In [10]: i=1
while i <= 10:
    print(3*i)
    i +=1
```

```
3
6
9
12
15
18
21
24
27
30
```

```
In [11]: # print the elements of the following list using a loop
# [1,4,9,16,25,36,49,64,81,100]
```

```
nums = [1,4,9,16,25,36,49,64,81,100]
idx = 0
while idx < len(nums):
    print(nums[idx]) #nums[0],nums[1],nums[2]...
    idx += 1
```

```
1
4
9
16
25
36
49
64
81
100
```

```
In [ ]: #table of any number using range
```

```
In [12]: n = int(input("enter a number : "))
for i in range(1,11):
    print(n * i)
```

```
enter a number : 5
5
10
15
20
25
30
35
40
45
50
```

```
In [ ]: #ODD_EVEN
```

```
In [68]: num = int(input("enter any number :"))
if num % 2 == 0:
    print("even ")
else:
    print("odd ")
```

```
enter any number :4
even
```

```
In [ ]: #PRIME_NUMBER
```

```
In [37]: def is_prime(num):
    if num <= 1:
        return False
    for i in range(2, num):
        if num % i == 0:
            return False
    return True

num = int(input("Enter a number: "))
if is_prime(num):
    print(num, "is a prime number.")
else:
    print(num, "is not a prime number.")
```

Enter a number: 565455
565455 is not a prime number.

```
In [ ]: num = int(input("enter any number: "))
count = 0
for i in range(1,num+1):
    if num % i == 0:
        count +=1
if count == 2:
    print(num,"is a prime number ")
```

In []:

palindrome

```
In [42]: word = input("enter any word :")
if word ==word[::-1]:
    print("word is palindrome")
else:
    print("word is not palindrome")
```

enter any word :mandeep
word is not palindrome

```
In [44]: def is_palindrome(word):
    return word == word[::-1]
word = input("Enter a word: ")
if is_palindrome(word):
    print(word, "is a palindrome.")
else:
    print(word, "is not a palindrome.")
```

Enter a word: mom
mom is a palindrome.

```
In [2]: def is_palindrome(word):
        return word == word[::-1]
        user_input = input("Enter a word: ")
        if is_palindrome(user_input):
            print(f"{user_input} is a palindrome!")
        else:
            print(f"{user_input} is not a palindrome.")
```

Enter a word: mom
mom is a palindrome!

```
In [3]: s = input("enter a value : ")
        reverse = s[::-1]
        if (s == reverse):
            print("yess it is palindrome")
        else:
            print("its not palindrome")
```

enter a value : mom
yess it is palindrome

```
In [ ]:
```

```
In [ ]: #reverse letter of a name
```

```
In [46]: def reverse_name(name):
        reversed_name = ""
        for char in name:
            reversed_name = char + reversed_name
        return reversed_name
        name = input("Enter a name: ")
        reversed_name = reverse_name(name)
        print("Reversed name:", reversed_name)
```

Enter a name: mandeep
Reversed name: peednam

```
In [ ]: #reverse letter name as a list
```

```
In [52]: def reverse_name(name):
        reversed_name = []
        for i in range(len(name) - 1, -1, -1):
            reversed_name.append(name[i])
        return ",".join(reversed_name)

        name = input("Enter a name: ")
        reversed_name_str = reverse_name(name)
        print("Reversed name:", reversed_name_str)
```

Enter a name: vipul
Reversed name: l,u,p,i,v

```
In [ ]: #reverse letter name as a list
```

```
In [59]: word =input("enter any word :")
word = word[::-1]
for letter in word:
    print(letter)
```

```
enter any word :VIPUL
L
U
P
I
V
```

```
In [ ]: #reverse letter name as a list
```

```
In [63]: word =input("enter any word :")
word = word[::-1]
output = ",".join(word)
print(output)
```

```
enter any word :VIPUL
L,U,P,I,V
```

```
In [ ]: #reverse letter name as a list
```

```
In [66]: word =input("enter any word :")
word = word[::-1]
for i in range(len(word)):
    if i != len(word):
        if i !=len(word) - 1 :
            print(word[i],end=" ,")
        else:
            print(word[i])
```

```
enter any word :Mandeep
p ,e ,e ,d ,n ,a ,M
```

```
In [ ]: # number divisible by 3
```

```
In [72]: def num_is_divisible_by_3(num):
    if num % 3 ==0:
        print(f"{num} is divisible by 3")
    else:
        print(f"{num} is not divisible by 3")
user_input = int(input("enter any number "))
num_is_divisible_by_3(user_input)
```

```
enter any number 4
4 is not divisible by 3
```

In [77]: *#number is divisible by 5*

```
def num_is_divisible_by_5(num):
    if num % 5 == 0:
        print(f"{num} is divisible by 5")
    else:
        print(f"{num} is not divisible by 5")
user_input = int(input("enter any number "))
num_is_divisible_by_5(user_input)
```

enter any number 42
42 is not divisible by 5

write the program if the sum of three number is 100 and one number is above 36 then find to get the another two number in python

In [1]:

```
sum_of_numbers = 100
num1 = int(input("Enter a number greater than 36: "))

# Check if the entered number is greater than 36
if num1 <= 36:
    print("The number should be greater than 36.")
else:
    # Calculate the sum of the remaining two numbers
    remaining_sum = sum_of_numbers - num1

    # For simplicity, Let's assume the two remaining numbers can be equal or
    # Divide the remaining sum by 2 to find two approximate equal numbers
    num2 = remaining_sum // 2
    num3 = remaining_sum - num2

    # Output the results
    print(f"The three numbers are: {num1}, {num2}, and {num3}")
    print(f"Their sum is: {num1 + num2 + num3}")
```

Enter a number greater than 36: 37
The three numbers are: 37, 31, and 32
Their sum is: 100

Pyramid pattern

In []: rows = int(input("Enter the number of rows: "))

```
# Pyramid pattern
for i in range(rows):
    print(' ' * (rows - i - 1), end='')
    print('*' * (2 * i + 1))
```

Right-Angle Triangle

```
In [ ]: rows = int(input("Enter the number of rows: "))

# Right-angle triangle pattern
for i in range(1, rows + 1):
    print('*' * i)
```

print a table of a user input number in the form of LIST using forloop

```
In [4]: number = int(input("enter a number :"))
table = []

for i in range(1, 11):
    table.append(number * i)

print(table)
```

```
enter a number :2
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
```

factorial of a number

```
In [6]: def factorial(n):
        if n == 0:
            return 1
        else:
            return n * factorial(n-1)
result = factorial(4)
print(result)
```

```
24
```

```
In [7]: # Input from the user
num = int(input("Enter a non-negative integer: "))

# Initialize the factorial result
factorial = 1

# Compute factorial using a loop
for i in range(1, num + 1):
    factorial *= i

# Print the result
print(f"The factorial of {num} is {factorial}.")
```

```
Enter a non-negative integer: 5
The factorial of 5 is 120.
```

```
In [ ]: # create a dataframe from the data given below dictionary

'Name': ['Alice', 'Bob', 'Charlie', 'David'],
'Age': [25, 30, 35, 40],
'City': ['New York', 'Los Angeles', 'Chicago', 'Houston']
```

```
In [8]: import pandas as pd
data={
    'Name': ['Alice', 'Bob', 'Charlie', 'David'],
    'Age': [25, 30, 35, 40],
    'City': ['New York', 'Los Angeles', 'Chicago', 'Houston']
}
df=pd.DataFrame(data)
print(df)
```

	Name	Age	City
0	Alice	25	New York
1	Bob	30	Los Angeles
2	Charlie	35	Chicago
3	David	40	Houston

program to convert USD to INR

```
In [14]: def converter(usd_val):
    inr_val =usd_val * 83
    print(usd_val, "USD =",inr_val,"INR")
converter(100)
```

100 USD = 8300 INR

```
In [ ]: #sum of natural number
```

```
In [15]: sum = 0
for n in range(1,9):
    sum += n
    print("Sum of natural number <= ", n , "is" ,sum)
```

```
Sum of natural number <= 1 is 1
Sum of natural number <= 2 is 3
Sum of natural number <= 3 is 6
Sum of natural number <= 4 is 10
Sum of natural number <= 5 is 15
Sum of natural number <= 6 is 21
Sum of natural number <= 7 is 28
Sum of natural number <= 8 is 36
```

```
In [16]: num1=20
num2=30
sum=num1+num2
print("the sum of given two number is",sum)
```

the sum of given two number is 50

find even num from 1 to 11

```
In [17]: original_list = list(range(1,11))
even_num = [num for num in original_list if num % 2 == 0]
print("EVEN NUMBERS :", even_num)
```

EVEN NUMBERS : [2, 4, 6, 8, 10]

find odd num from 1 to 11

```
In [18]: original_list = list(range(1,11))
odd_num = [num for num in original_list if num % 2 != 0]
print("ODD NUMBERS :", odd_num)
```

ODD NUMBERS : [1, 3, 5, 7, 9]

create numpy array

```
In [19]: import numpy as np

my_list = [1, 2, 3, 4, 5]
my_array = np.array(my_list)

print("NumPy array:", my_array)
```

NumPy array: [1 2 3 4 5]

lambda function

```
In [20]: add = lambda x, y: x + y
print(add(5, 3))
```

8

create a dataframe

```
In [21]: import pandas as pd

data = {
    'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
    'Age': [25, 30, 35, 40],
    'City': ['New York', 'Los Angeles', 'Chicago', 'Houston']
}

df = pd.DataFrame(data)
print(df)
```

	Name	Age	City
0	Alice	25	New York
1	Bob	30	Los Angeles
2	Charlie	35	Chicago
3	Dave	40	Houston

grading_SCORE

```
In [22]: student_scores = {
    "Harry": 81,
    "Ron": 78,
    "Hermione": 99,
    "Draco": 74,
    "Neville": 62,
}

# 🚨 Don't change the code above 🙅

#TODO-1: Create an empty dictionary called student_grades.
student_grades={}

#TODO-2: Write your code below to add the grades to student_grades. 🙅
for student in student_scores:
    score = student_scores[student]
    if score > 90:
        student_grades[student] = "Outstanding"
    elif score > 80:
        student_grades[student] = "Exceeds Expectations"
    elif score > 70:
        student_grades[student] = "Acceptable"
    else:
        student_grades[student] = "Fail"

# 🚨 Don't change the code below 🙅
print(student_grades)
```

{'Harry': 'Exceeds Expectations', 'Ron': 'Acceptable', 'Hermione': 'Outstanding', 'Draco': 'Acceptable', 'Neville': 'Fail'}

highest_score

```
In [23]: student_scores=[78,65,89,86,55,91,64,89]
highest_score=0
for score in student_scores:
    if score>highest_score:
        highest_score=score
print(f"The highest score in the class is:{highest_score}")
```

The highest score in the class is:91

LEAP_YEAR

```
In [25]: year=int(input("which year do you want to check?"))
if year % 4 == 0:
    if year % 100 == 0:
        if year % 400 == 0:
            print("Leap year.")
        else:
            print("Not leap year.")
    else:
        print("Leap year.")
else:
    print("Not leap year")
```

which year do you want to check?2000
Leap year.

("mini calculator")

```
In [29]: num1 =int(input("enter any number: "))
num2 =int(input("enter any number: "))
print("press 1 for addition \n press 2 for subtraction \n press 3 for mult
choice = int(input("enter your choice from 1 to 4 :"))
if choice == 1:
    print(num1 + num2)
elif choice == 2:
    print(num1 - num2)
elif choice == 3:
    print(num1 * num2)
elif choice == 4:
    print(num1 / num2)
else:
    print("Invalid input")
```

enter any number: 4
enter any number: 5
press 1 for addition
press 2 for subtraction
press 3 for multiplication
press 4 for division
enter your choice from 1 to 4 :2
-1

BMI CALCULATOR

In [34]:

```
height = input("enter your height in m: ")
weight = input("enter your weight in kg: ")
bmi= int(weight) / float(height) ** 2
bmi_as_int =int(bmi)
print(bmi_as_int)
```

```
enter your height in m: 1.68
enter your weight in kg: 50
17
```

find odd even numbers

In [35]:

```
eve=[]
odd=[]
for i in list(range(51)):
    if i % 2 ==0:
        eve.append(i)

    else:
        odd.append(i)
print("eve",eve)
print("odd",odd)
```

```
eve [0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50]
odd [1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49]
```

factorial of first 10 numbers

In [36]:

```
fact = 1
for x in range(1,11):
    fact=fact*x
    print(x,fact)
```

```
1 1
2 2
3 6
4 24
5 120
6 720
7 5040
8 40320
9 362880
10 3628800
```

find odd_number from numbers from 1 to 10

```
In [37]: # Original list containing numbers from 1 to 10
original_list = list(range(1, 11))

# Extracting only odd numbers using list comprehension
odd_numbers = [num for num in original_list if num % 2 != 0]

print("Odd numbers:", odd_numbers)
```

Odd numbers: [1, 3, 5, 7, 9]

find even_number from numbers from 1 to 10

```
In [38]: # Original list containing numbers from 1 to 10
original_list = list(range(1, 11))

# Extracting only even numbers using list comprehension
even_numbers = [num for num in original_list if num % 2 == 0]

print("Even numbers:", even_numbers)
```

Even numbers: [2, 4, 6, 8, 10]

In []:

```
In [39]: #create a dictionary

key = ['Apple', 'Banana', 'Cherry']
value =[20,25,30]
fruit_dict =dict(zip(key ,value))
fruit_dict
```

Out[39]: {'Apple': 20, 'Banana': 25, 'Cherry': 30}

write a Python program that checks if a given number is divisible by both 2 and 4, but not by 6.

```
In [44]: def is_divisible_by_2_and_4_not_6(n):
          return (n % 2 == 0) and (n % 4 == 0) and (n % 6 != 0)

# Input from the user
number = int(input("Enter a number: "))

# Check and print result
if is_divisible_by_2_and_4_not_6(number):
    print(f"The number {number} is divisible by both 2 and 4, but not by 6.")
else:
    print(f"The number {number} does not meet the criteria.")
```

Enter a number: 16

The number 16 is divisible by both 2 and 4, but not by 6.

In []: