

COURSE OUTCOME 2

DATE:2-10-2024

1.Program to find the factorial of a number

PROGRAM

```
a=int(input("enter a number: "))  
fact=1  
for i in range(1,a+1):  
    fact=fact*i  
print(f"factorial of {a} is {fact}")
```

OUTPUT - 1

```
enter a number: 5  
factorial of 5 is 120
```

OUTPUT – 2

```
enter a number: 4  
factorial of 4 is 24
```

DATE:2-10-2024

2.Generate Fibonacci series of N terms

PROGRAM

```
n = int(input("Enter the number of terms for the Fibonacci series: "))
t1=0
t2=1
print(t1,t2,end=" ")
for i in range(2,n+1):

    t3=t1+t2
    print(t3,end=" ")
    t1=t2
    t2=t3
```

OUTPUT - 1

Enter the number of terms for the Fibonacci series: 5
0 1 1 2 3 5

OUTPUT – 2

Enter the number of terms for the Fibonacci series: 8
0 1 1 2 3 5 8 13 21

DATE:8-10-2024

3.Find the sum of all items in a list.

PROGRAM

```
list1=list(map(int,input("enter the list of numbers: ").split()))  
print(list1)  
s=sum(list1)  
print("sum of list= ",s)
```

OUTPUT – 1

```
enter the list of numbers: 1 2 3 4 5  
[1, 2, 3, 4, 5]  
sum of list= 15
```

OUTPUT – 2

```
enter the list of numbers: 10 20 30 40  
[10, 20, 30, 40]  
sum of list= 100
```

DATE:8-10-2024

4.Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.

PROGRAM

```
start = int(input("Enter the starting digits: "))
end = int(input("Enter the ending digits: "))
for i in range(int(start ** 0.5), int(end ** 0.5) + 1):
    square = i * i
    if start <= square <= end:
        if all(int(digit) % 2 == 0 for digit in str(square)):
            print(square)
```

OUTPUT

Enter the starting digits: 1000

Enter the ending digits: 9999

4624

6084

6400

8464

OUTPUT

Enter the starting digits: 3000

Enter the ending digits: 6000

4624

DATE:15-10-2024

5.Display the given pyramid with step number accepted from user. Eg: N=4

```
1
2 4
3 6 9
4 8 12 16
```

PROGRAM

```
N=int(input("enter the number of rows: "))
for i in range(1,N+1):
    for j in range(1,i+1):
        print(i*j,end=" ")
    print()
```

OUTPUT

```
enter the number of rows: 5
1
2 4
3 6 9
4 8 12 16
5 10 15 20 25
```

OUTPUT

enter the number of rows: 4

1

2 4

3 6 9

4 8 12 16

DATE:21-10-2024

6.Count the number of characters (character frequency) in a string.

PROGRAM

```
text =input("enter a string: ")
char_count={}
for char in text:
    if char in char_count:
        char_count[char] += 1
    else:
        char_count[char]=1
print("charecter frequency:",char_count)
```

OUTPUT

enter a string: pthon program

charecter frequency: {'p': 2, 't': 1, 'h': 1, 'o': 2, 'n': 1, ' ': 1, 'r': 2, 'g': 1, 'a':1, 'm': 1}

OUTPUT

enter a string: charecter

charecter frequency: {'c': 2, 'h': 1, 'a': 1, 'r': 2, 'e': 2, 't': 1}

DATE:23-10-2024

7.Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'

PROGRAM

```
input_string = input("Enter a string: ")
if input_string.endswith("ing"):
    result = input_string + "ly"
else:
    result = input_string + "ing"
print(result)
```

OUTPUT

```
Enter a string: python
Pythoning
```

OUTPUT

```
Enter a string: string
stringly
```


DATE:23-10-2024

8. Accept a list of words and return length of longest word.

PROGRAM

```
words = input("Enter a list of words (separated by spaces): ").split()
```

```
longest_word = max(words, key=len)
```

```
print("Length of the longest word:", len(longest_word))
```

OUTPUT

Enter a list of words (separated by spaces): python is high level language

Length of the longest word: 8

OUTPUT

Enter a list of words (separated by spaces): python is interpreted language

Length of the longest word: 11

DATE:24-10-2024

29. Construct following pattern using nested loop

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

PROGRAM

```
n = 5  
for i in range(1, n + 1):  
    print('* ' * i )  
for i in range(n - 1, 0, -1):  
    print('* ' * i)
```

OUTPUT

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

DATE:25-10-2024

10.Generate all factors of a number.

PROGRAM

```
number = int(input("Enter a number: "))
factors = []
for i in range(1, number + 1):
    if number % i == 0:
        factors.append(i)
print("Factors of", number, "are:", factors)
```

OUTPUT

Enter a number: 10

Factors of 10 are: [1, 2, 5, 10]

OUTPUT

Enter a number: 15

Factors of 15 are: [1, 3, 5, 15]

DATE:25-10-2024

11. Write lambda functions to find area of square, rectangle and triangle?

PROGRAM

```
area1=lambda a:a*a
area2=lambda l,b:l*b
area3=lambda b,h:0.5*b*h

s=int(input("Enter the side of square:"))
print("Area of the square is",area1(s))
l=int(input("Enter the length of rectangle:"))
b=int(input("Enter the breadth of rectangle:"))
print("Area of the rectangle is",area2(l,b))
b=int(input("Enter the breadth of triangle:"))
h=int(input("Enter the height of triangle:"))
print("Area of the triangle is",area3(b,h))
```

OUTPUT

```
Enter the side of square:5
Area of the square is 25
Enter the length of rectangle:5
Enter the breadth of rectangle:4
Area of the rectangle is 20
Enter the breadth of triangle:3
Enter the height of triangle:4
Area of the triangle is 6.0
```

OUTPUT

Enter the side of square:6

Area of the square is 36

Enter the length of rectangle:4

Enter the breadth of rectangle:2

Area of the rectangle is 8

Enter the breadth of triangle:5

Enter the height of triangle:6

Area of the triangle is 15.0