SP21-BCS-007

September 11, 2023

1 LAB 1: Basic Python

1.1 Task 01:

Print 24 using print() function

[ ]:
```
print(24)
```

```
24
```

1.2 Task 02:

Print 4.5 using print() function

[ ]:
```
print(4.5)
```

```
4.5
```

1.3 Task 03:

Print 1234 using print() function

[ ]:
```
print(1234)
```

```
1234
```

1.4 Task 04:

Take a number in input and print the number.

[ ]:
```
num = input("Enter a number: ")
print(num)
```

```
2
```

1.5 Task 05:

Print a string using print() function

[ ]:
```
"Asad Ali"
```

[ ]:
```
'Asad Ali'
```

1.6 Task 06:

Write a comment in Python

[ ]:
```
"""This is a comment
block
."""
```

[ ]:
```
'This is a comment \nblock\n.'
```

1.7 Task 07:

Add two numbers and print the result.

[ ]:
```
print(25 + 26)
```

```
51
```

1.8 Task 08:

Multiply two numbers and print the result.

[ ]:
```
print(2 * 3.6)
```

```
7.2
```

1.9 Task 09:

Subtract two numbers and print the result.

[ ]:
```
print(8 - 9)
```

```
-1
```

1.10 Task 10:

Divide two numbers and print the result.

[ ]:
```
print(8 / 4)
```

```
2.0
```

1.11 Task 11:

Divide two decimal numbers and print the result.

[ ]:
```
print(23.4 / 3.1)
```

```
7.548387096774193
```

1.12 Task 12:

Divide two decimal numbers and print the result as int using //.

[ ]:
```
print(23.4 // 3.1)
```

```
7.0
```

1.13 Task 13:

Divide two decimal numbers and print the result as int using int() function.

[ ]:
```
print(int(23.4 / 3.1))
```

```
7
```

1.14 Task 14:

Take modulus of two numbers and print the result.

[ ]:
```
print(28 % 5)
```

```
3
```

1.15 Task 15:

Take power of two numbers and print the result.

[ ]:
```
print(4**3)
print(4**10)
print(4**29)
print(4**150)
print(4**1000)
```

```
64
1048576
288230376151711744
203703597633448608626844568840937816105146839366593625063614044935438129976333670618339737
6
114813069527425452423283320117768198402231770208869520047764273682576626139237031385665948
631650626991844596463898746277344711896086305533142593135616665318539129989145312280000688
779148240044871428926990063486244781615463646388363947317026040466353970904996558162398808
944629605623311649536164221970332681344168908984458505602379484807914058900934776500429002
716706625830522008132236281291761267883317206598995396418127021779858404042159853183251540
889433902091920554957783589672039160081957216630582755380425583726015528348786419432054508
915275783882625175435528800822842770817965453762184851149029376
```

1.16 Task 16:

Check operator precidence in Python.

[ ]:
```
print(2 + 3 * 6)
print((2 + 3) * 6)
print(48565878 * 578453)
print(2 + 2)
print((5 - 1) * ((7 + 1) / (3 - 1)))
print(42 + 5 + 2)
# print(5 +)
```

```
20
30
28093077826734
4
16.0
49
```

1.17 Task 17:

String Formatting in Python.

[ ]:
```
x = "Nancy"
print(x)

s = "My lucky number is %d, what is yours?" % 7
print(s)

s = "My lucky number is" + str(7) + ", what is yours?"
print(s)
```

```
Nancy
My lucky number is 7, what is yours?
My lucky number is7, what is yours?
```

1.18 Task 18:

Taking input in Python.

[ ]:
```
name = input("What is your name? ")
print(name)

job = input("What is your job? ")
print(job)

num = input("Enter a number: ")
print("You said: " + str(num))
```

```
6
8
You said: 9
```

1.19 Task 19:

Check the given number is even or odd.

[ ]:
```
# Check Even or odd
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("The number is even")
else:
    print("The number is odd")
```

```
The number is even
```

1.20 Task 20:

Print sum of first 10 integers using while loop.

[ ]:
```
i = 0
sum = 0
while i <= 10:
    sum = sum + i
    i = i + 1

print(sum)
```

```
55
```

1.21 Task 21:

Print sum of given number and exit when user enter 0 uisng for loop.

[ ]:
```
num = input("Enter five numbers: ").split(" ")

sum = 0
for i in num:
    sum = sum + int(i)

print(sum)
```

```
5
```

1.22 Task 22:

Print sum of given number and exit when user enter 0 uisng while loop.

[ ]:
```
num = int(input("Enter a number: "))

sum = 0

while num != 0:
    num = int(input("Enter a number: "))
```

```
    sum = sum + num

print(sum)
```

```
18
```

1.23 Task 23:

Check the given number is prime or not.

[ ]:
```
# check prime number
num = int(input("Enter a number: "))
i = 2

while i < num:
    if num % i == 0:
        print("The number is not prime")
        break
    i = i + 1

if i == num:
    print("The number is prime")
```

```
The number is prime
```

1.24 Activity 1: Grading System

Write a Python code to accept marks of a student from 1-100 and display the grade according to the following formula;

- Grade F if marks are less than 50
- Grade E if marks are between 50 to 60
- Grade D if marksare between 61 to 70
- Grade C if marks are between 71 to 80
- Grade B if marks are between 81 to 90
- Grade A if marks are between 91 to 100

[ ]:
```
def grades(marks):
    if marks > 100 and marks < 0:
        return "Invalid marks"

    if marks > 90:
        return "A"
    elif marks > 80:
        return "B"
    elif marks > 70:
        return "C"
    elif marks > 60:
        return "D"
```

```
    elif marks >= 50:
        return "E"
    else:
        return "F"


marks = int(input("Enter your marks: "))
print(grades(marks))
```

F

1.25 Acitivity 2: Factorial Calculator

Write a program that takes a number from user and calculate factorial of that number.

[ ]:
```
def factorial(num):
    if num == 0:
        return 1
    else:
        return num * factorial(num - 1)


num = int(input("Enter a number: "))
print(factorial(num))
```

1