

Intermediate Python Lab Day - 3

Recursive Function (Loop not allowed)

Question 1

Make a python program that allows users to enter 2 any numbers or integers and calculate the greatest common factor(GCD).

$$\begin{array}{l} 1220 \bmod 516 = 188 \\ 516 \bmod 188 = 140 \\ 188 \bmod 140 = 48 \\ 140 \bmod 48 = 44 \\ 48 \bmod 44 = 4 \\ 44 \bmod 4 = 0 \\ 4 = \text{GCD} \end{array}$$

Example

First Number : 77(user input)

Second Number : 154(user input)

Output : 77

Question 2

Make a python program to find the factorial of a number from users.

$$n! = \begin{cases} 1 & \text{for } n = 0 \text{ or } n = 1 \\ n \times (n - 1)! & \text{for } n \geq 2 \end{cases}$$

Example

Enter the number : 5(user input)

Output : 120

Question 3

Make a python program to find the fibonacci of a number from users.

$$f(n) = \begin{cases} 0 & n = 0 \\ 1 & n = 1 \\ f(n-1) + f(n-2) & n > 1 \end{cases}$$

Example

Enter the number : 10(user input)

Output : 55

Exception Handling

Question 4

Make a python program that allows users to enter 2 any numbers or integers and calculate the quotient where when the denominator is 0, alert the user.

Example

a: 15 (user input)

b: 5 (user input)

the answer of a divide by b is 3.0

a: 15 (user input)

b: 0 (user input)

can't divide with zero

Extra Question

Modifies Question 4 when the denominator is 0, raise error to user.

a: 15 (user input)

b: 0 (user input)

```
raise Exception("Sorry, can't divide with zero")  
Exception: Sorry, can't divide with zero
```

NOTE (it will show in error message)