

Requiremnet-1

```
recursiveFactorial.py > ...
1  # Recursive function to calculate factorial
2  def factorial(n):
3      # Base case: factorial of 0 or 1 is 1
4      if n == 0 or n == 1:
5          return 1
6      else:
7          return n * factorial(n - 1) # Recursive call
8
9  num = 5 # You can change the number here
10 result = factorial(num)
11 print(f"The factorial of {num} is {result}")
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\fady\Desktop\New folder> & C:/Users/fady/AppData/Local/Microsoft/WindowsApps/python3.13.exe "c:/Users/fady/Desktop/New folder/recursiveFactorial.py"
The factorial of 5 is 120
PS C:\Users\fady\Desktop\New folder> |
```

Requirement-2

```
factorialWithOneParamter.py > ...
1  def factorial(n):
2      # Check if the number is valid
3      if not isinstance(n, int) or n < 0:
4          raise ValueError("Input must be a non-negative integer.")
5
6      if n == 0 or n == 1:
7          return 1
8      else:
9          return n * factorial(n - 1)
10
11 try:
12     num = int(input("Enter a non-negative integer: "))
13     print(f"The factorial of {num} is {factorial(num)}")
14 except ValueError as e:
15     print(e)
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\fady\Desktop\New folder> & C:/Users/fady/AppData/Local/Microsoft/WindowsApps/python3.13.exe "c:/Users/fady/Desktop/New folder/factorialWithOneParamter.py"
Enter a non-negative integer: 10
The factorial of 10 is 3628800
PS C:\Users\fady\Desktop\New folder> 
```

Requirment-3

```
factorialWithValidation.py > ...
1  def factorial(n):
2      # Check if the input is an integer and non-negative
3      if not isinstance(n, int) or n < 0:
4          raise ValueError("Input must be a non-negative integer.")
5
6      if n == 0 or n == 1:
7          return 1
8      else:
9          return n * factorial(n - 1)
10
11 # User input and error handling
12 try:
13     num = int(input("Enter a non-negative integer: "))
14     print(f"The factorial of {num} is {factorial(num)}")
15 except ValueError as e:
16     print(e)
17
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\fady\Desktop\New folder> & C:/Users/fady/AppData/Local/Microsoft/WindowsApps/python3.13.exe "c:/Users/fady/Desktop/New folder/factorialWithValidation.py"
Enter a non-negative integer: -10
Input must be a non-negative integer.
PS C:\Users\fady\Desktop\New folder> & C:/Users/fady/AppData/Local/Microsoft/WindowsApps/python3.13.exe "c:/Users/fady/Desktop/New folder/factorialWithValidation.py"
Enter a non-negative integer: 10
The factorial of 10 is 3628800
PS C:\Users\fady\Desktop\New folder> █
```