



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

SCHOOL OF COMPUTING SCIENCE



DEPARTMENT OF NETWORKING AND COMMUNICATION

LLJ -2 - REFUTE QUESTIONS PYTHON

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Refute Questions

1st Question

Problem Statement :

Write a program to find the factorial of the given number.

Factorial of a number is given by the product of the integers from 1 to (n-1)

Factorial(n) = $n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$.

Solution code :

```
n = int(input("Enter a number: "))
factorial = 1
for i in range(1,n+1) :
    factorial = factorial*i
print(factorial)
```

Execution :

```
main.py
1 n = int(input("Enter a number: "))
2 factorial = 1
3 for i in range(1,n+1) :
4     factorial = factorial*i
5 print(factorial)

input
Enter a number: 6
720

...Program finished with exit code 0
Press ENTER to exit console.
```

Correct test case : Input = 6, Output = 720



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```
main.py
1 n = int(input("Enter a number: "))
2 factorial = 1
3 for i in range(1,n+1) :
4     factorial = factorial*i
5 print(factorial)

input
Enter a number: -1
1

...Program finished with exit code 0
Press ENTER to exit console.
```

Refute test case : Input = -1, Output = 1 (unexpected)

Explanation of Failure :

The code doesn't check for the numbers less than 0, which results in the incorrect output for negative numbers.

2nd Question

Problem statement :

Write a program to check whether the given sides can form a triangle.

This is done by checking if the sum of two sides of a triangle is greater than the third side. If a, b, c are the sides of a triangle, and if the conditions $a+b>c$, $b+c>a$ and $a+c>b$ are fulfilled, then a, b, c forms a triangle.

Solution code :

```
a = int(input("Enter the side"))
b = int(input("Enter the side"))
c = int(input("Enter the side"))
if a+b>c :
    print(a, b, c, "forms a triangle")
elif b+c>a :
    print(a, b, c, "forms a triangle")
```



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```
elif a+c>b :  
    print(a, b, c, "forms a triangle")  
else :  
    print(a, b, c, "does not form a triangle")
```

Execution :

```
main.py  
1 a = int(input("Enter the side :"))  
2 b = int(input("Enter the side :"))  
3 c = int(input("Enter the side :"))  
4 if a+b>c :  
5     print(a, b, c, "forms a triangle")  
6 elif b+c>a :  
7     print(a, b, c, "forms a triangle")  
8 elif a+c>b :  
9     print(a, b, c, "forms a triangle")  
10 else :  
11     print(a, b, c, "does not form a triangle")  
  
input  
Enter the side :3  
Enter the side :4  
Enter the side :5  
3 4 5 forms a triangle  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

Correct test case: Input = 3, 4, 5 ,Output = Forms a triangle

```
main.py  
1 a = int(input("Enter the side :"))  
2 b = int(input("Enter the side :"))  
3 c = int(input("Enter the side :"))  
4 if a+b>c :  
5     print(a, b, c, "forms a triangle")  
6 elif b+c>a :  
7     print(a, b, c, "forms a triangle")  
8 elif a+c>b :  
9     print(a, b, c, "forms a triangle")  
10 else :  
11     print(a, b, c, "does not form a triangle")  
  
input  
Enter the side :1  
Enter the side :2  
Enter the side :3  
1 2 3 forms a triangle  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

Refute test case: Input = 1, 2, 3 , Output = Forms a triangle (Unexpected)



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Explanation of Failure :

The code gives incorrect results because it checks whether two sides are greater than the third, in only one of the combinations of a, b and c, rather than checking in all the three combinations.