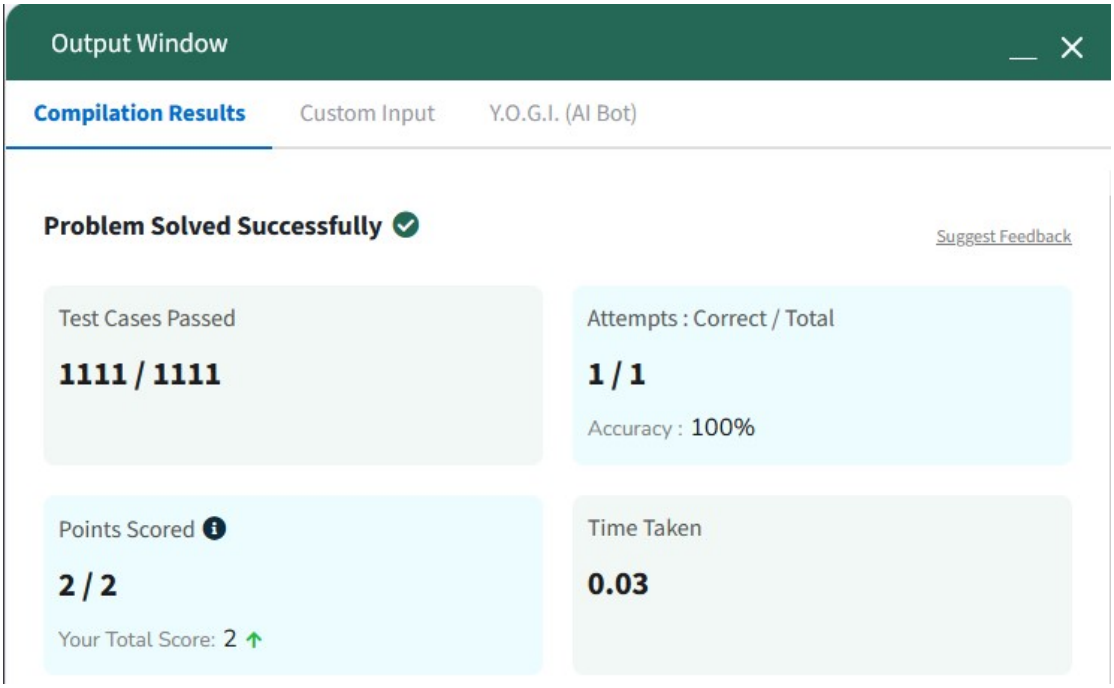
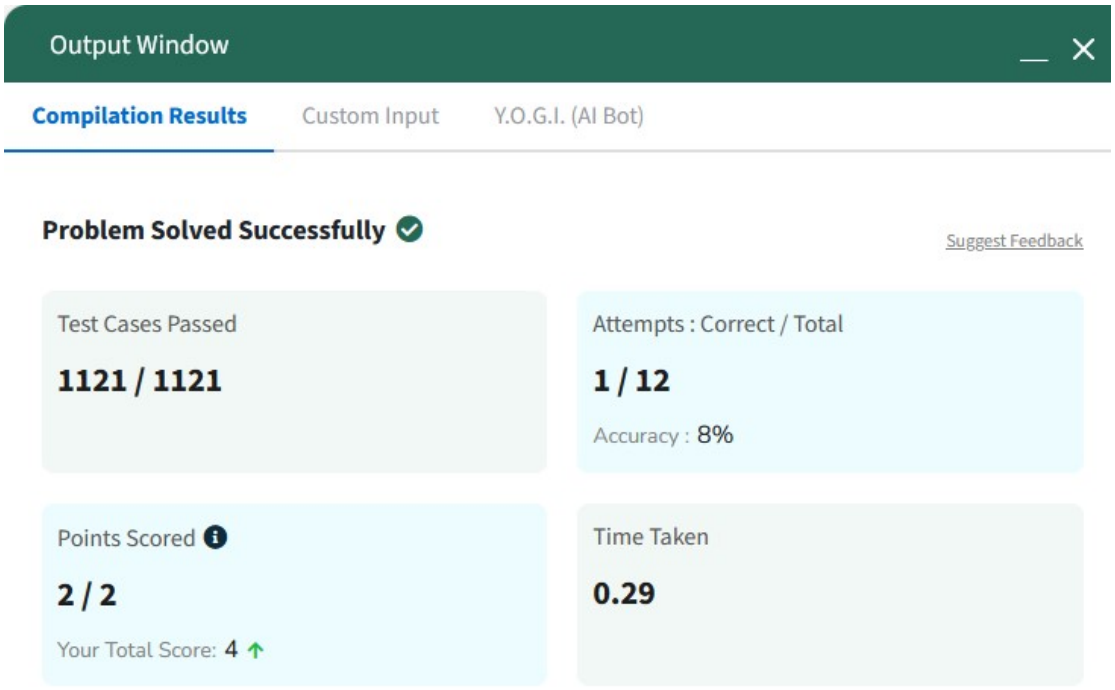
Assignment 1

Armstrong Number problem - GeekforGeeks



Anagram problem - GeekforGeeks



1. Using for loop, write and run a Python program for this algorithm.

Here is an algorithm to print out n! from 0! to 10!

```
for number in range(0,11):
    factorial=1

    for i in range(1,number+1):
        factorial*=i

    print(f"factorial of {number} is {factorial}")
```

✓ 0.0s

```
factorial of 0 is 1
factorial of 1 is 1
factorial of 2 is 2
factorial of 3 is 6
factorial of 4 is 24
factorial of 5 is 120
factorial of 6 is 720
factorial of 7 is 5040
factorial of 8 is 40320
factorial of 9 is 362880
factorial of 10 is 3628800
```

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2. Find prime numbers between a given range - start(take start no) , end (take end number)

```
start=int(input())
end=int(input())

for i in range(start, end+1):
    for j in range(2,i//2):
        if (i%j==0):
            break
    else:
        print(i, end=", ")
10
```

✓ 2.6s

```
11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109,
```

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3. Write a python program to swap a 3 digit number

input 321

output 123

```python
# n=int(input("Enter Number to reverse: "))
n=321
original_n=n
reverse=0
while n>0:
    i=n%10 #digit
    reverse=reverse*10+i
    n=n//10

print("reversed number: ",reverse)
print("original number: ",original_n)
```

✓ 0.0s

```
reversed number:  123
original number:  321
```

---

4. Count Digits, Even/Odd, Sum

e.g. 23456

output digits : 5

sum : 20

Even digits : 3

odd digits :2

```python
# num=input()
num='23456'
output_digits=0
sum=0
even=0
odd=0
for i in num:
    j=int(i)
    output_digits+=1
    sum+=j
    if  j%2==0:
        even+=1
    else:
        odd+=1

print(f'output digits: {output_digits}')
print(f'sum: {sum}')
print(f'even: {even}')
print(f'odd: {odd}')
```

✓ 0.0s

```
output digits: 5
sum: 20
even: 3
odd: 2
```

5. Write a program to check if given triangle is valid if 3 sides of the triangle are provided.

Also print the type of triangle

```
# s1,s2,s3=int(input()), int(input()), int(input())

s1,s2,s3= 12,13,14

sum=s1+s2+s3
maxV=max(s1,s2,s3)

if (sum-maxV)<maxV:
    print("Invalid sides for a valid triangle.")
else:
    if s1==s2==s3:
        print('Equilateral triangle.')
    elif s1==s2 or s2==s3 or s1==s3:
        print('Isoceles triangle.')
    else:
        print('Scalene triangle')

```

✓ 0.0s

```
Scalene triangle
```

```
# s1,s2,s3=int(input()), int(input()), int(input())

s1,s2,s3= 12,12,12

sum=s1+s2+s3
maxV=max(s1,s2,s3)

if (sum-maxV)<maxV:
    print("Invalid sides for a valid triangle.")
else:
    if s1==s2==s3:
        print('Equilateral triangle.')
    elif s1==s2 or s2==s3 or s1==s3:
        print('Isoceles triangle.')
    else:
        print('Scalene triangle')

```

✓ 0.0s

```
Equilateral triangle.
```

6. Find LCM and GCD for given numbers [take 2 numbers] using loops only

```python
# num1, num2= int(input()), int(input())
num1, num2= 12, 13
maxV=max(num1,num2)
minV=min(num1,num2)
lcm=0
gcd=0
for i in range(1,minV+1):
    if num1%i==0 and num2%i==0:
        gcd=i
lcm=num1*num2/gcd
print(gcd)
print(lcm)
```

✓ 0.0s

```
1
156.0
```