ABHISHEK SHARMA
CS 2ND YEAR
SECTION : "I"
ROLL NO.: 01
ENROLLMENT NO.: 12019009001127

SUBJECT : DATA STRUCTURE AND ALGORITHM LAB

[WEEK : 4]

ASSIGNMENT : 4

HACKERRANK ID : 12019009001127_I

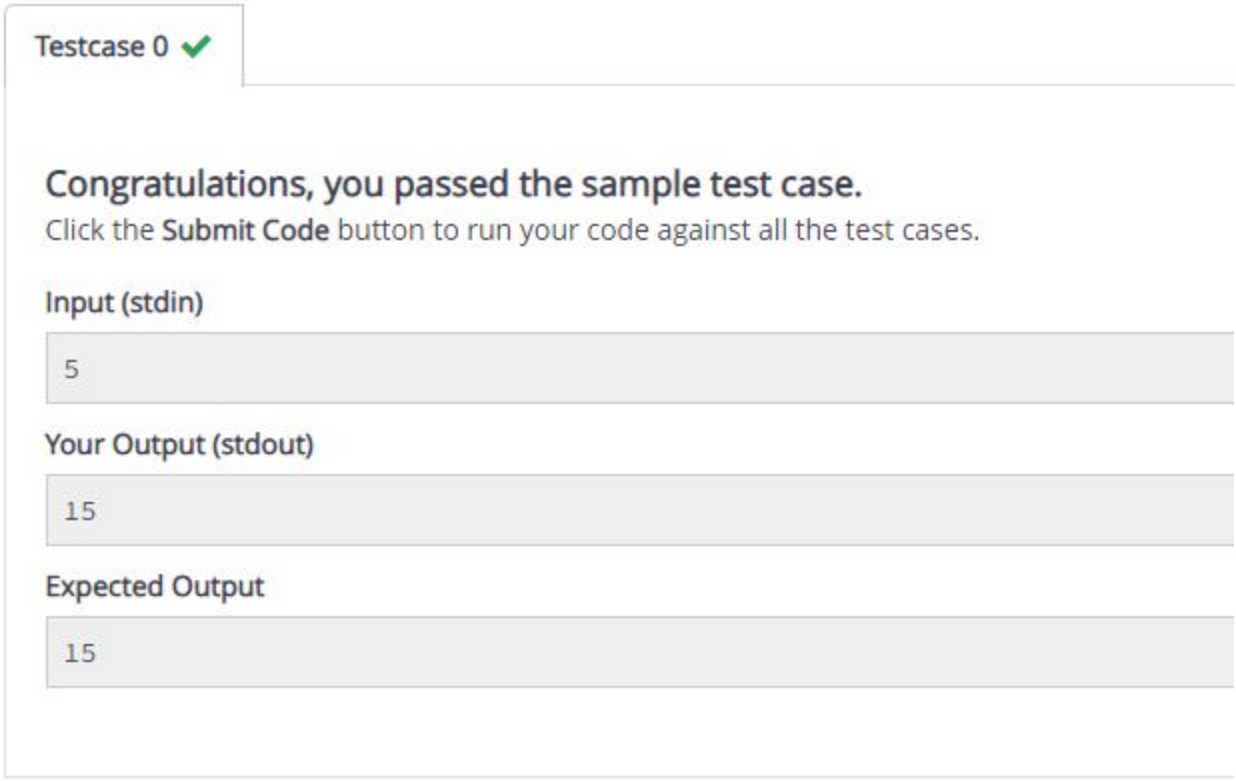
DATE : 27.07.2020

Q1. Take a number n as input and print the sum of all n natural numbers using for loop. (starting from 1)

Code :

```
n=int(input())
sum1 = 0
while(n > 0):
    sum1=sum1+n
    n=n-1
print(sum1)
```

Output :

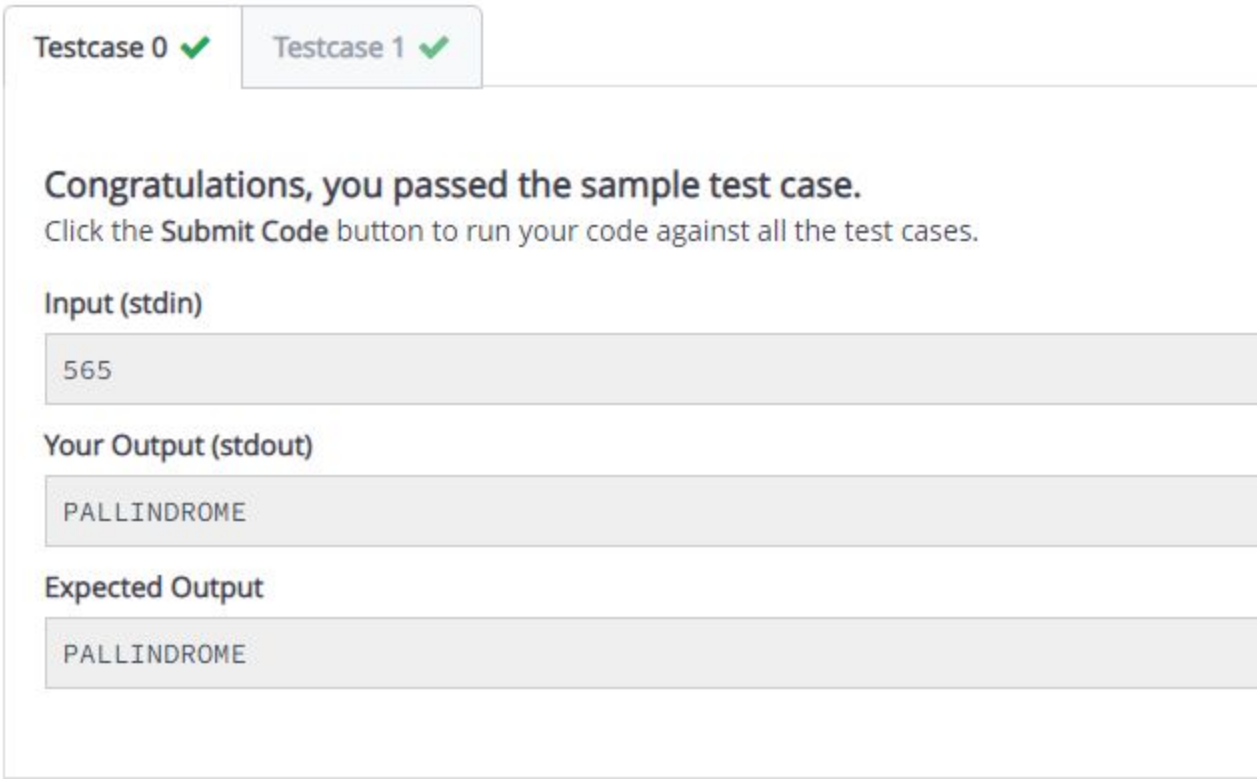


Q2. Take a number n as input and check whether it is palindrome or not

Code :

```
n=int(input())
temp=n
rev=0
while(n>0):
    dig=n%10
    rev=rev*10+dig
    n=n//10
if(temp==rev):
    print("PALLINDROME")
else:
    print("NOT PALLINDROME")
```

Output :

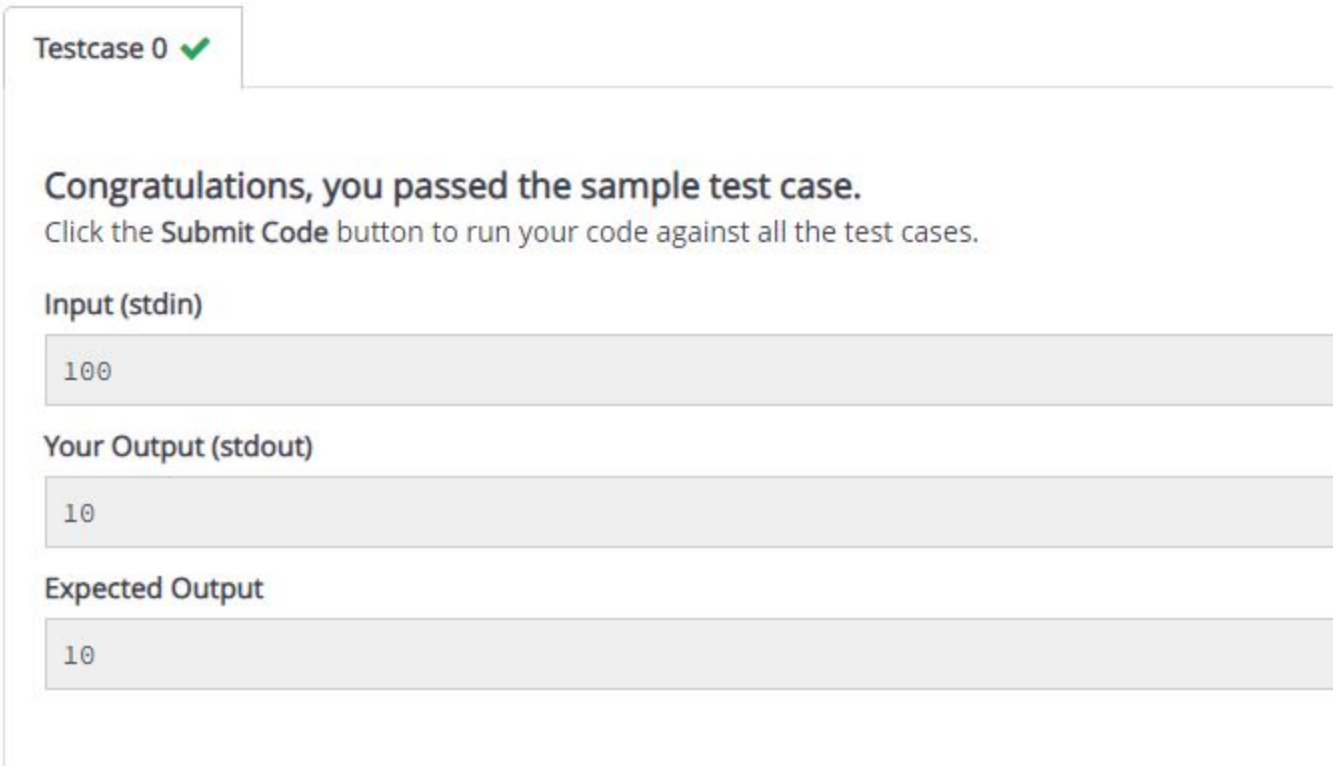


Q3. Take a number n as user input. Find its square root

Code :

```
import math
i = int(input())
b = int(math.sqrt(i))
print (b)
```

Output :

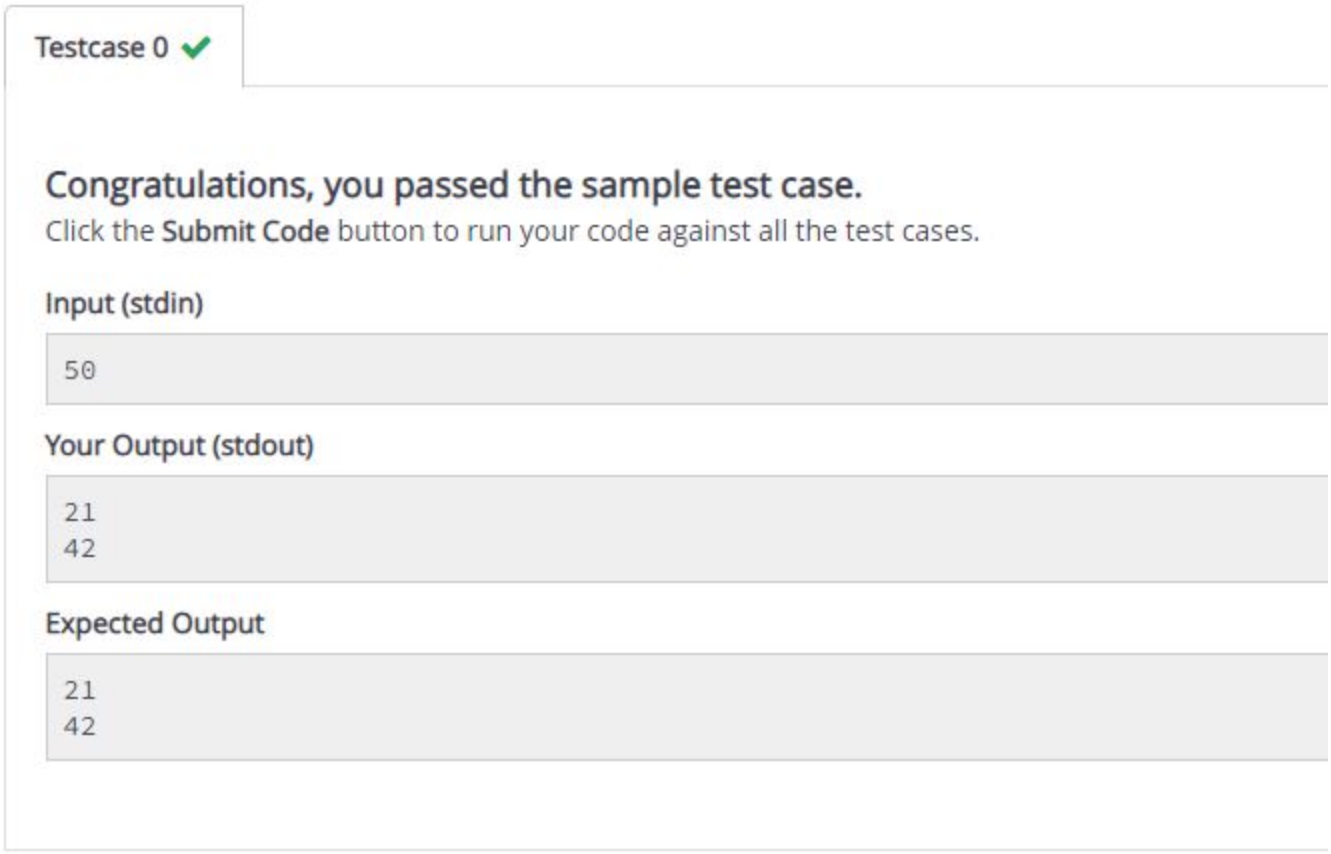


Q4. Print the numbers that are divisible by both 3 and 7 in the range 1 to n. take n as user input.

Code :

```
i = int(input())
for a in range (1,i+1):
    if ((a%3 == 0) and (a%7 == 0)):
        print (a)
```

Output :

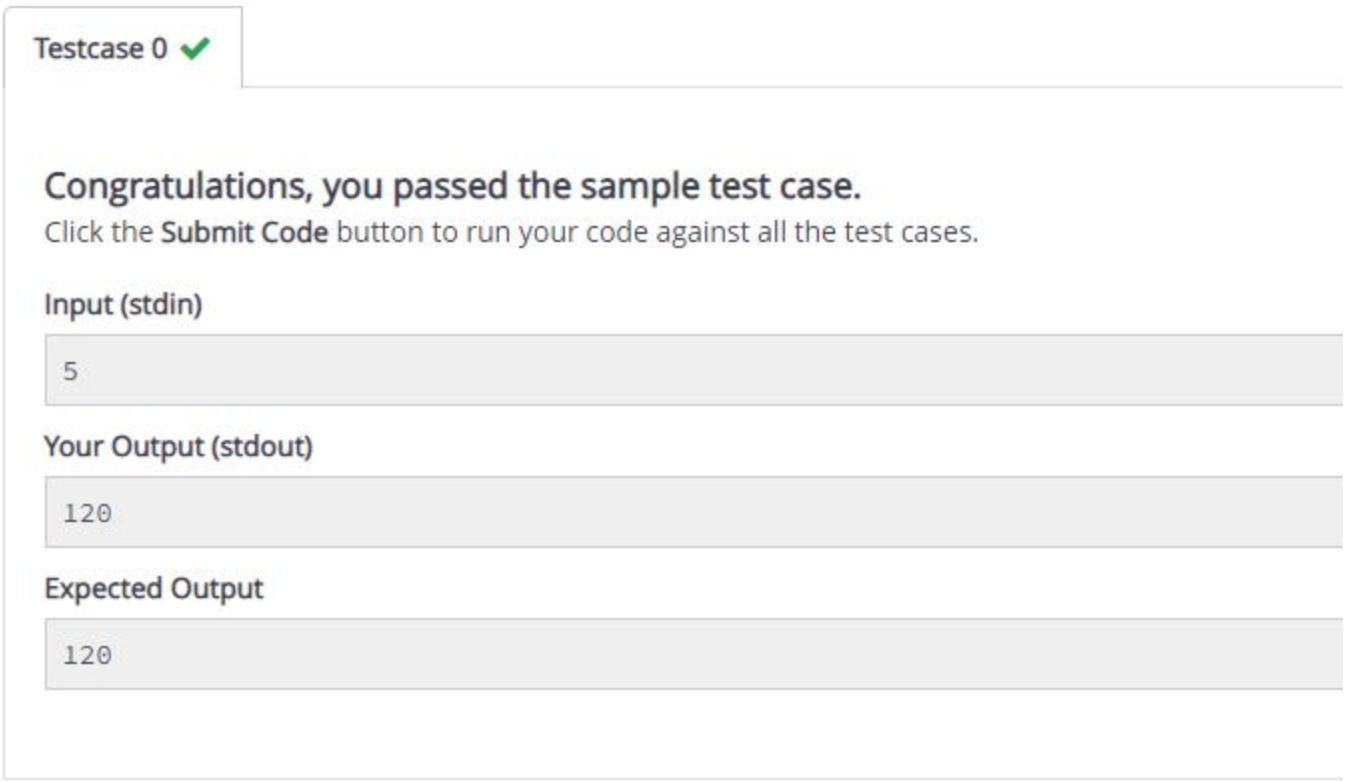


Q5. Print the factorial of n. Take n as user input.

Code :

```
import math
i = int(input())
print (int(math.factorial(i)))
```

Output :



Q6. Take n as user input. Check whether n is Armstrong or not. (Armstrong number is a number that is equal to the sum of cubes of its digits. For example: 153 = 1^3 + 5^3 + 3^3)

Code :

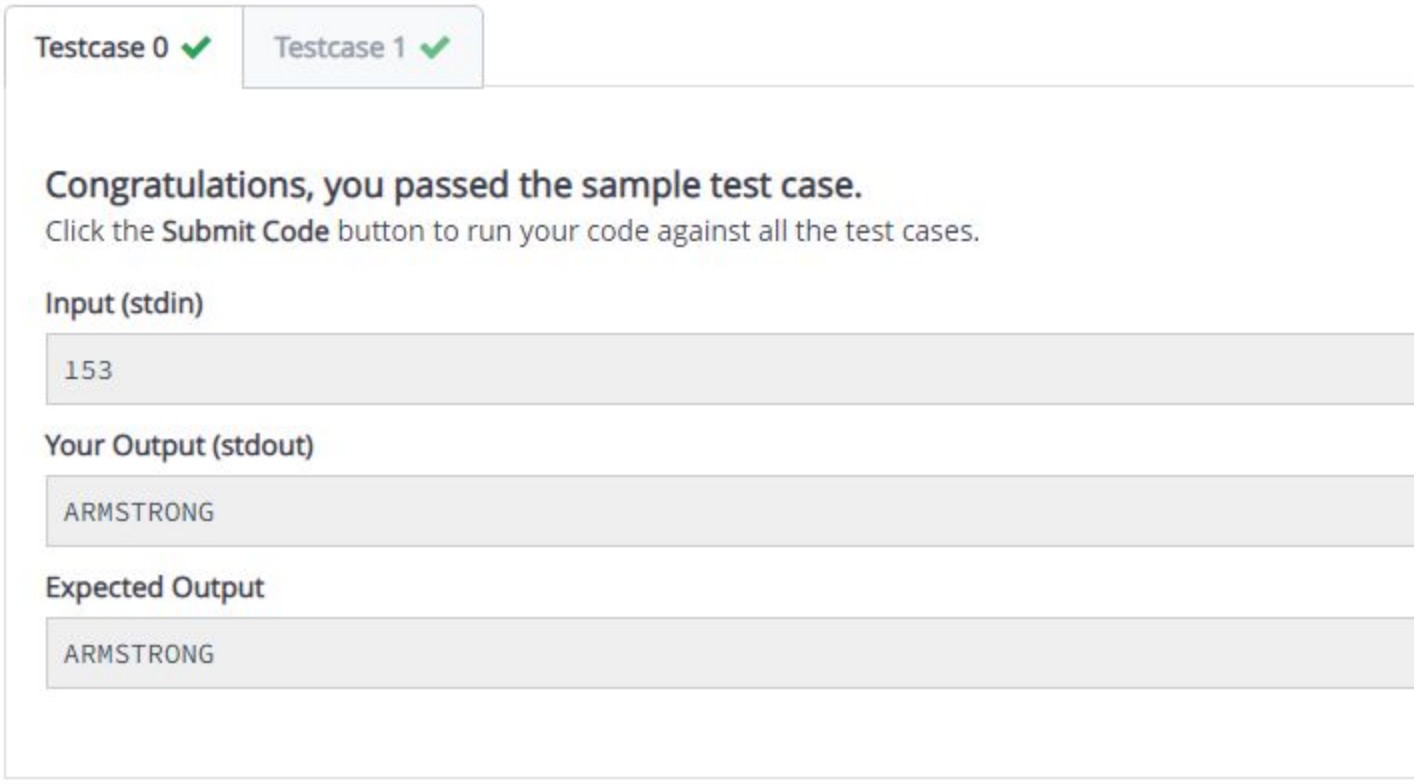
```
num = int(input())


sum = 0

temp = num
while temp > 0:
    digit = temp % 10
    sum += digit ** 3
    temp //= 10

if num == sum:
    print("ARMSTRONG")
else:
    print("NOT ARMSTRONG")
```

Output :



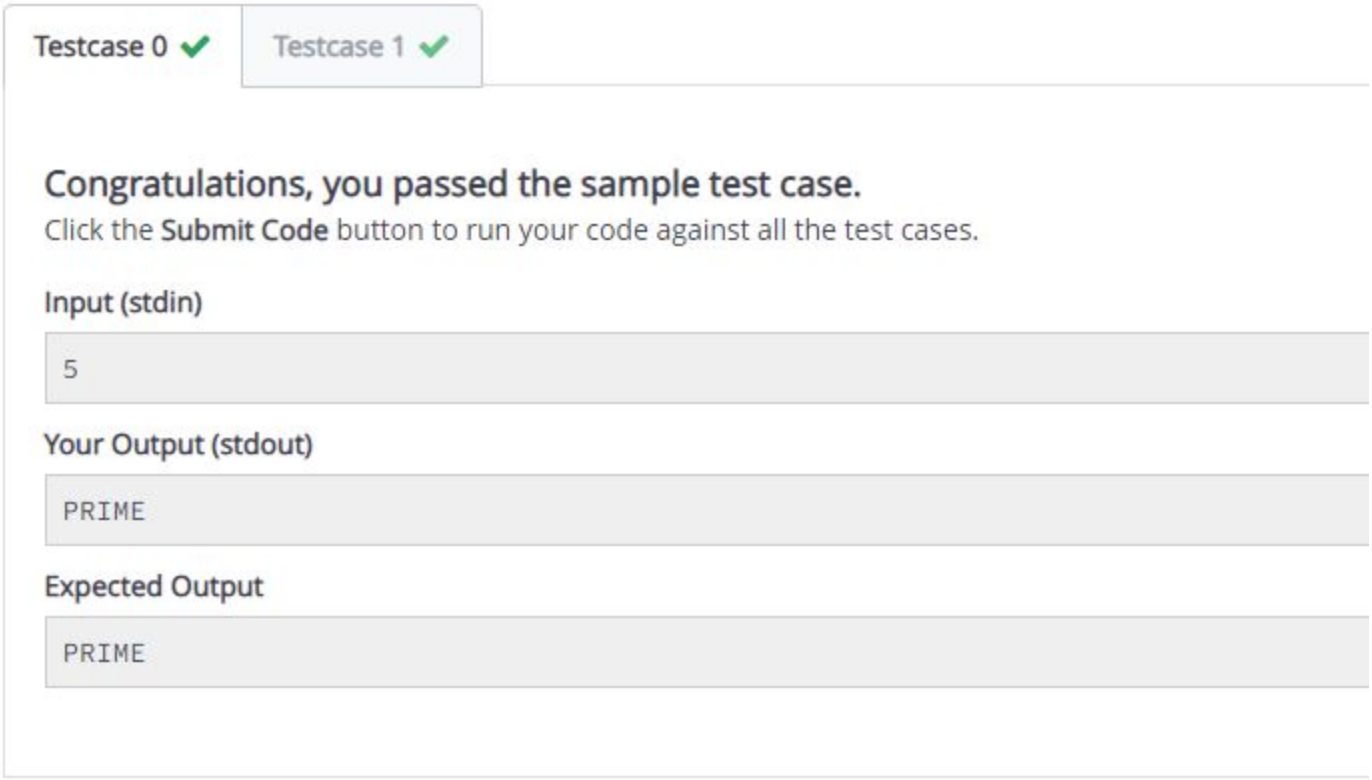
Q8. Take n as user input. Check whether n is prime or not.
Code :

```
number = int(input())

if number > 1:
    for i in range(2, number):
        if (number % i) == 0:
            print("NOT PRIME")
            break
    else:
        print("PRIME")

else:
    print("NOT PRIME")
```

Output :



Q9. Take a number n as user input and print all its factors

Code :

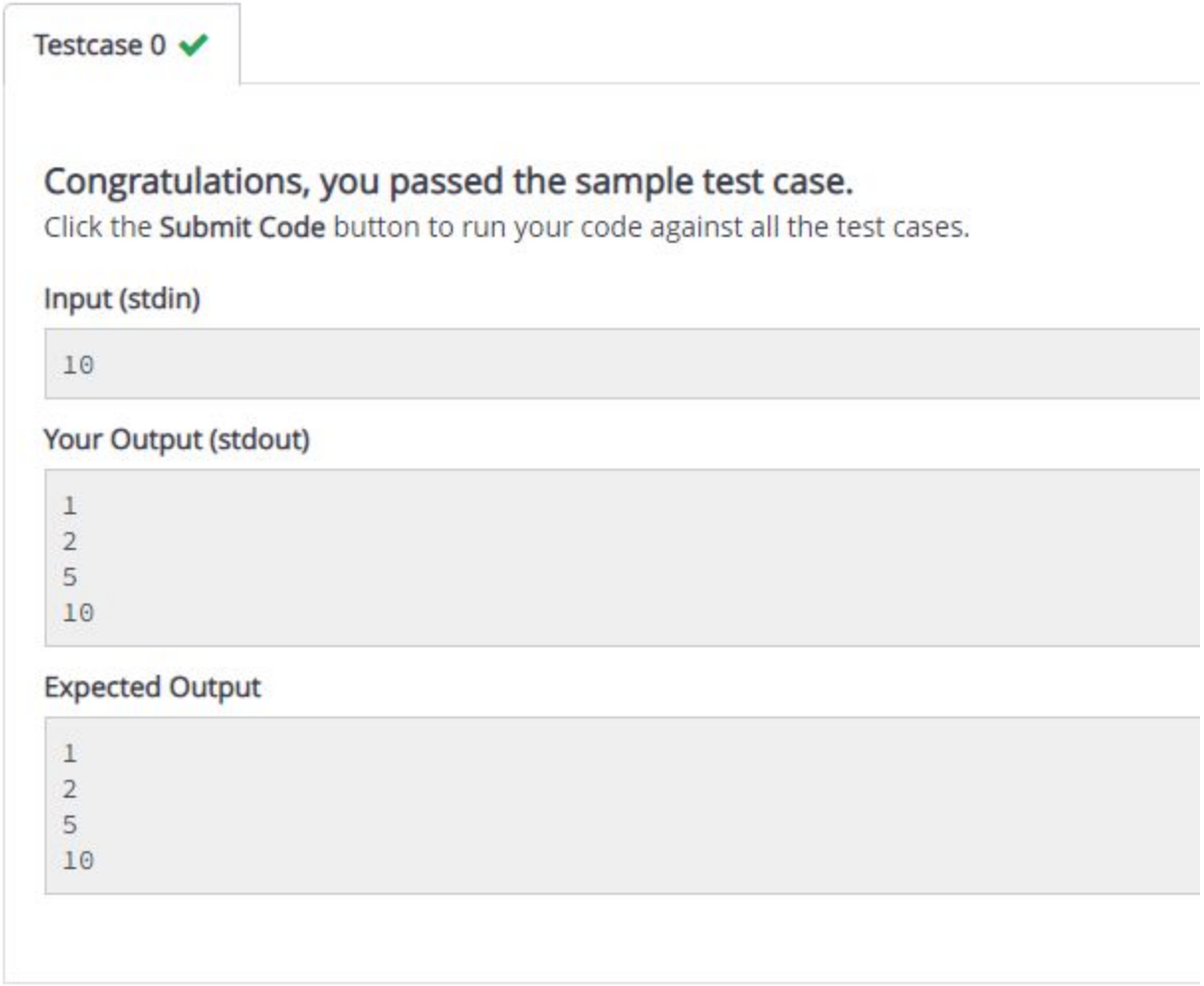
```
def print_factors(x):

    for i in range(1, x + 1):
        if x % i == 0:
            print(i)

num = int(input())

print_factors(num)
```

Output :



Q10. Print the pattern. For n number of rows.
1
2 3
4 5 6
7 8 9 10
Taken n as user input. In the above example number of rows = n

Code :

```
n = int(input())
a = 1
for i in range (1,n+1):
    for j in range (1,i+1):
        print (a,end = " ")
        a = a + 1
    print (" ")
```

Output :