04 - Iteration Control Structures

Ex. No. : 4.1 **Date: 14/04/2024**

Register No.: 231401051 **Name:B.Keerthna**

Factors of a number

Determine the factors of a number (i.e., all positive integer values that evenly divide into a number).

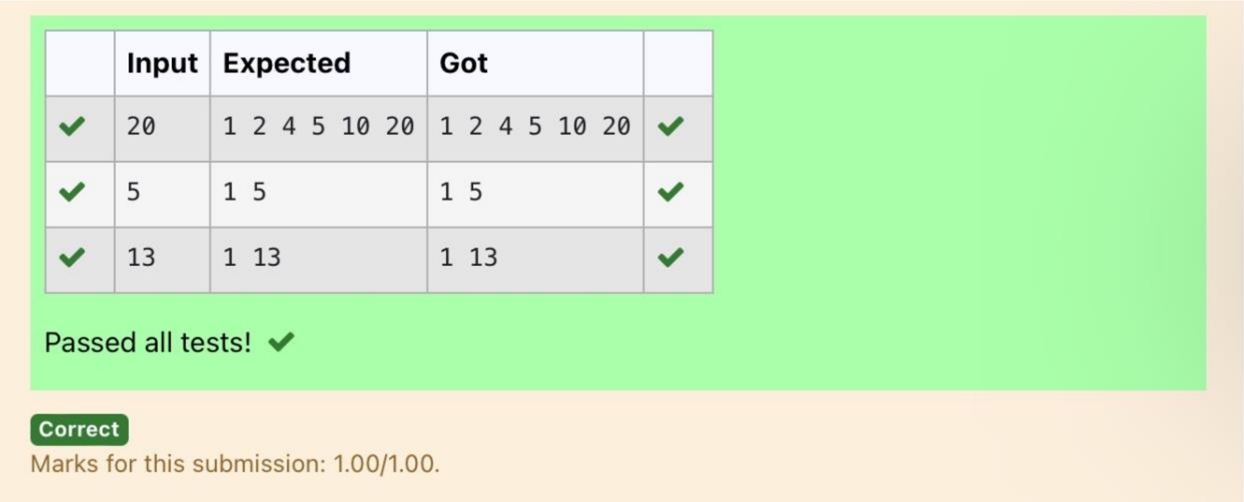
For example:

Input	Result	
20	1 2 4 5 10 20	

Program:

```
k=int(input()) l=[]
for i in range(1,k+1):
    if(k%i==0):
        l.append(i) for
j in l:
    print(j,end=' ')
```

Output:



	Input	Expected	Got	
✓	20	1 2 4 5 10 20	1 2 4 5 10 20	✓
✓	5	1 5	1 5	✓
✓	13	1 13	1 13	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex No:4.2 **Date:14/04/2024**

Register No:231401051 **Name: B.Keerthna**

Non Repeated Digit Count

Write a program to find the count of non-repeated digits in a given number N. The number will be passed to the program as an input of type int.
Assumption: The input number will be a positive integer number >= 1 and <= 25000.
Some examples are as below.
If the given number is 292, the program should return 1 because there is only 1 nonrepeated digit '9' in this number
If the given number is 1015, the program should return 2 because there are 2 nonrepeated digits in this number, '0', and '5'.
If the given number is 108, the program should return 3 because there are 3 nonrepeated digits in this number, '1', '0', and '8'.
If the given number is 22, the function should return 0 because there are NO nonrepeated digits in this number.

For example:

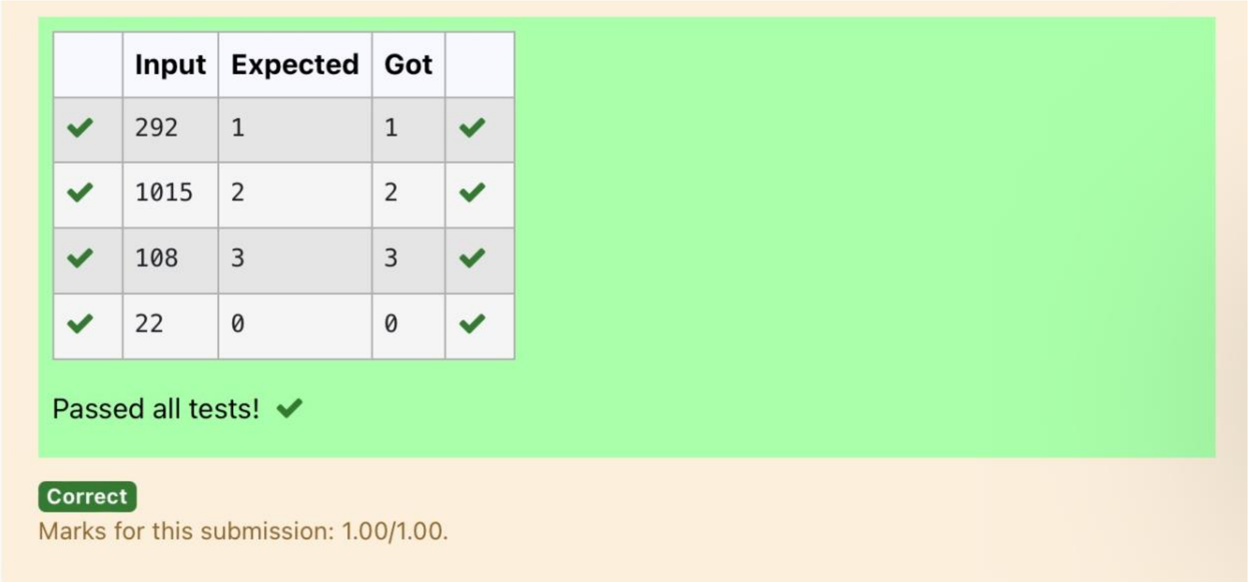
Input	**Result**
292	1
1015	2
108	3
22	0

Program:

```
n=int(input())
l=[] k=[]
while n>0:
a=n%10
n=n//10
```

```
   l.append(a) for i
in range(len(l)):     if
l.count(l[i])==1:
        k.append(l[i]) print(len(k))
```

Output:



	Input	Expected	Got	
✓	292	1	1	✓
✓	1015	2	2	✓
✓	108	3	3	✓
✓	22	0	0	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex No:4.3 **Date:14/04/2024**

Register No:231401051 **Name: B.Keerthna**

Prime Checking

Write a program that finds whether the given number N is Prime or not. If the number is prime, the program should return 2 else it must return 1.

Assumption: 2 <= N <=5000, where N is the given number.

Example1: if the given number N is 7, the method must return 2

Example2: if the given number N is 10, the method must return 1

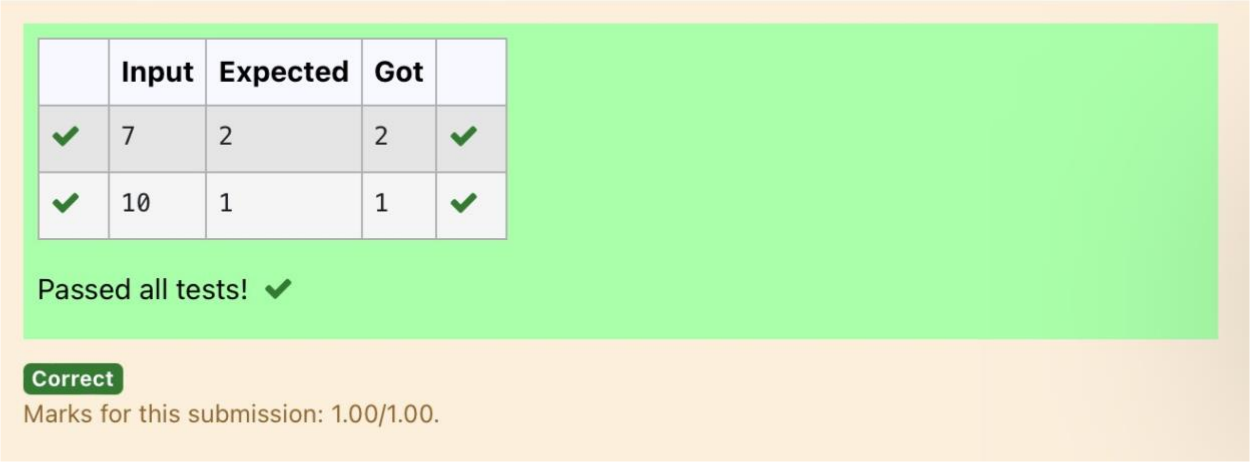
For example:

Input	Result
7	2
10	1

Program:

```
a=int(input()) for
i in range(2,a):
if(a%2==0):
flag=0
elif(a%i!=0):
    flag=1
else:
    flag=0
if(flag==1):
print("2")
elif(flag==0):
print("1")
```

Output:



	Input	Expected	Got	
✓	7	2	2	✓
✓	10	1	1	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex No:4.4 **Date:14/04/2024**

Register No:231401051 **Name:B.Keerthna**

Next Perfect Square

Given a number N, find the next perfect square greater than N.

Input Format:

Integer input from stdin.

Output Format:

Perfect square greater than N.

Example Input:

10

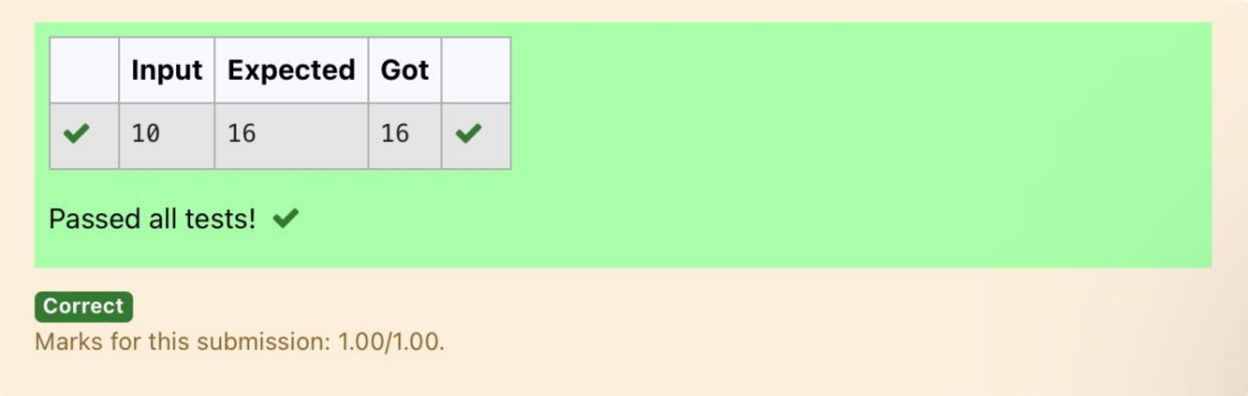
Output:

16

Program:

```
a=int(input()) c=[]
for i in range(0,a):
   b=i**2
if(b>a):
      c.append(b) print(c[0])
```

Output:



	Input	Expected	Got	
✓	10	16	16	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 4.5 **Date: 14/04/2024**

Register No.: 231401051 **Name:B.Keerthna**

Nth Fibonacci

Write a program to return the nth number in the fibonacci series. The value of N will be passed to the program as input.

NOTE: Fibonacci series looks like –

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, . . . and so on.

i.e. Fibonacci series starts with 0 and 1, and continues generating the next number as the sum of the previous two numbers.

- first Fibonacci number is 0,
- second Fibonacci number is 1,
- third Fibonacci number is 1,
- fourth Fibonacci number is 2,
- fifth Fibonacci number is 3,
- sixth Fibonacci number is 5,
- seventh Fibonacci number is 8, and so on.

For example:

Input:

7

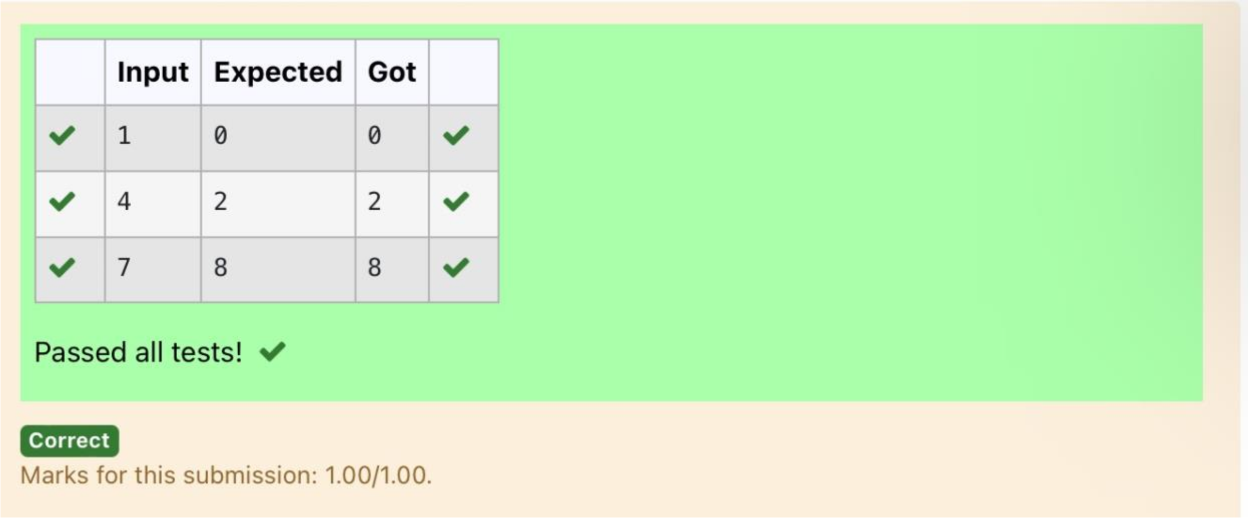
Output

8

Program:

```
a=[0,1] for i in
range(0,100):
    a.append(a[-1]+a[-2])
q=int(input()) print(a[q-
1])
```

Output:



	Input	Expected	Got	
✓	1	0	0	✓
✓	4	2	2	✓
✓	7	8	8	✓

Passed all tests! ✓

Marks for this submission: 1.00/1.00.

Ex. No. : 4.6 **Date: 14/04/2024**

Register No.: 231401051 **Name: B.Keerthna**

Disarium Number

A Number is said to be Disarium number when the sum of its digit raised to the power of their respective positions becomes equal to the number itself. Write a program to print number is Disarium or not.

Input Format:

Single Integer Input from stdin.

Output Format:

Yes or No.

Example Input:

175

Output:

Yes

Explanation 1^1 +

7^2 +5^3 = 175

Example Input:

123

Output:

No

For example:

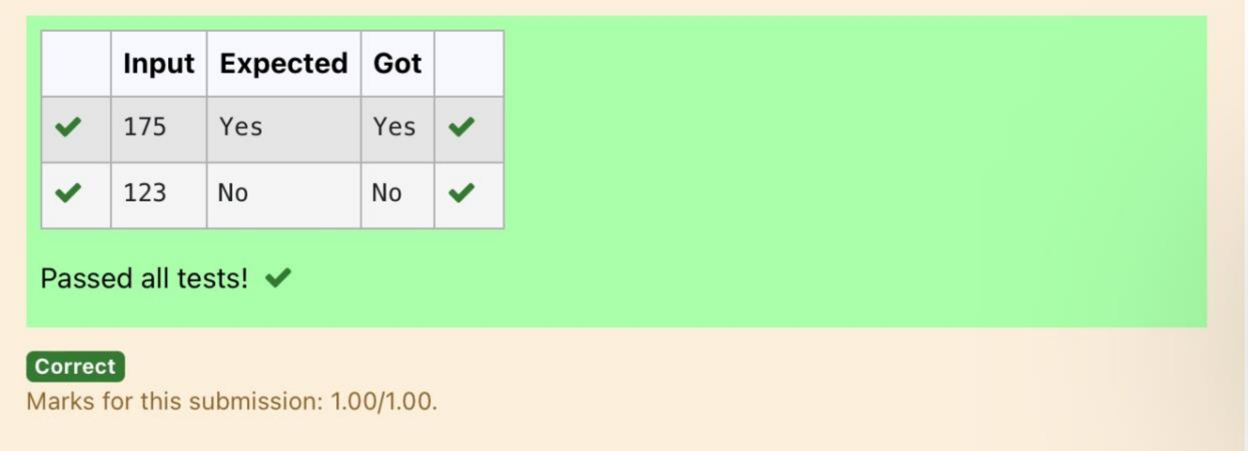
Inp	**Res ut**
ult	
175	Yes
123	No

```
import math
```

Program:

```
n=int(input()) a=len(str(n))

sum=0 x=n while(x!=0):

r=x%10

sum=int(sum+math.pow(r,a))

   a-=1

x=x//10

if(sum==n):

print("Yes")

else:

   print("No")
```

Output:



	Input	Expected	Got	
✓	175	Yes	Yes	✓
✓	123	No	No	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 4.7 **Date: 14/04/2024**

Register No.: 231401051 **Name: B.Keerthna**

Sum of Series

Write a program to find the sum of the series 1 +11 + 111 + 1111 + . . . + n terms (n will be given as input from the user and sum will be the output)

Sample Test Cases

Test Case 1

Input

4

Output

1234

Explanation:

as input is 4, have to take 4 terms.

1 + 11 + 111 + 1111

Test Case 2

Input

6

Output

123456

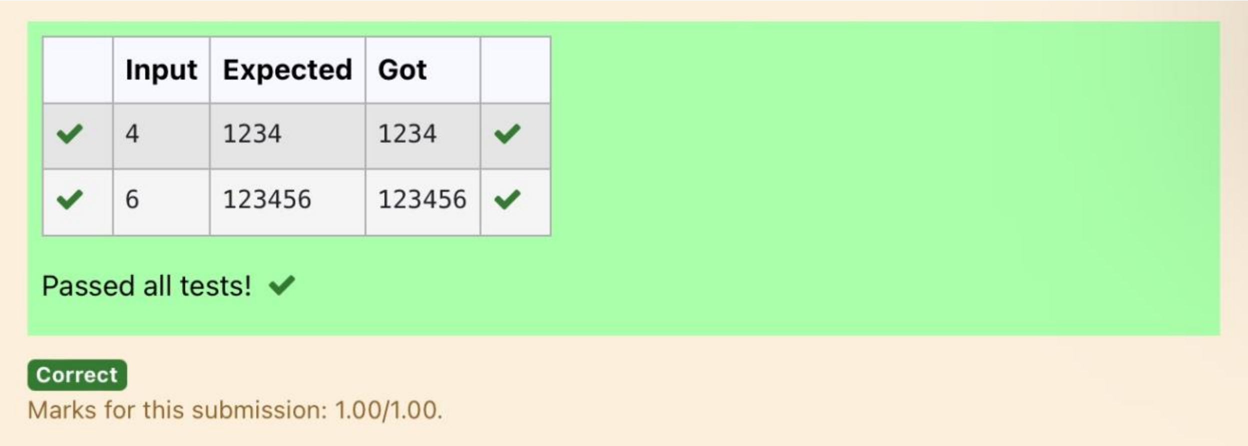
For example:

Input	Result
3	123

Program:

```
n=int(input())

b=1 sum=0

for i in range(1,n+1):
   sum+=b

b=(b*10)+1

print(sum)
```

Output:



	Input	Expected	Got	
✓	4	1234	1234	✓
✓	6	123456	123456	✓

Passed all tests! ✓

Marks for this submission: 1.00/1.00.

Ex. No. : 4.8 **Date: 14/04/2024**

Register No.: 231401051 **Name: B.Keerthna**

Unique Digit Count

Write a program to find the count of unique digits in a given number N. The number will be passed to the program as an input of type int.
Assumption: The input number will be a positive integer number >= 1 and <= 25000.
For e.g.
If the given number is 292, the program should return 2 because there are only 2 unique digits '2' and '9' in this number
If the given number is 1015, the program should return 3 because there are 3 unique digits in this number, '1', '0', and '5'.

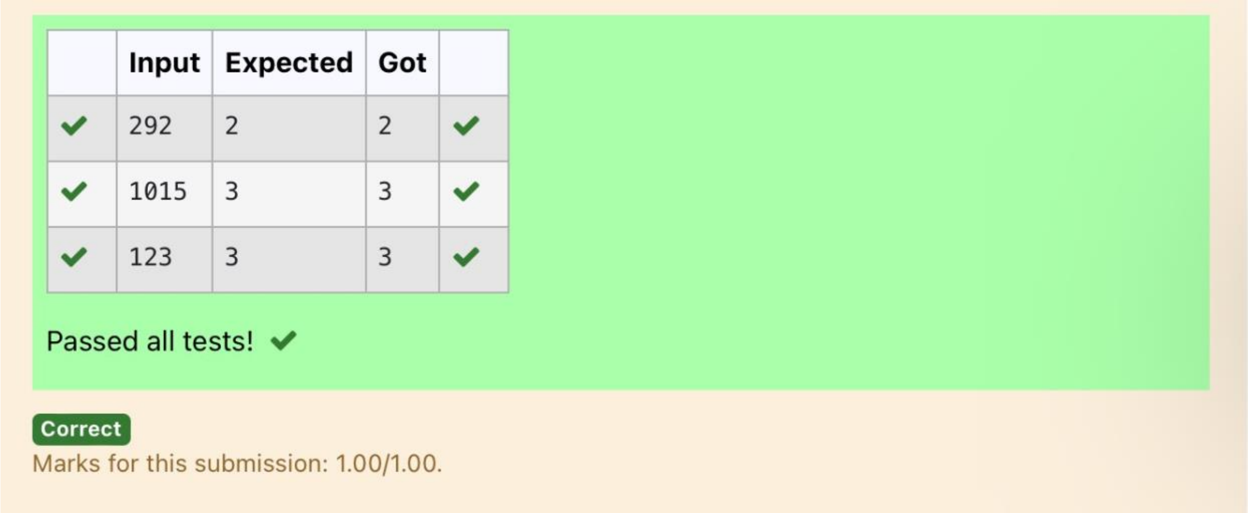
For example:

Input	Result
292	2
1015	3

Program:

```
a=int(input())

b=[] while

a>0:

c=a%10

a=a//10

   b.append(c)

b=list(set(b))

print(len(b))
```

Output:



	Input	Expected	Got	
✓	292	2	2	✓
✓	1015	3	3	✓
✓	123	3	3	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 4.9 **Date: 14/04/2024**

Register No.: 231401051 **Name: B.Keerthna**

Product of single digit

Given a positive integer N, check whether it can be represented as a product of single digit numbers.

Input Format:

Single Integer input.

Output Format:

Output displays Yes if condition satisfies else prints No.

Example Input:

14

Output:

Yes

Example Input:

13

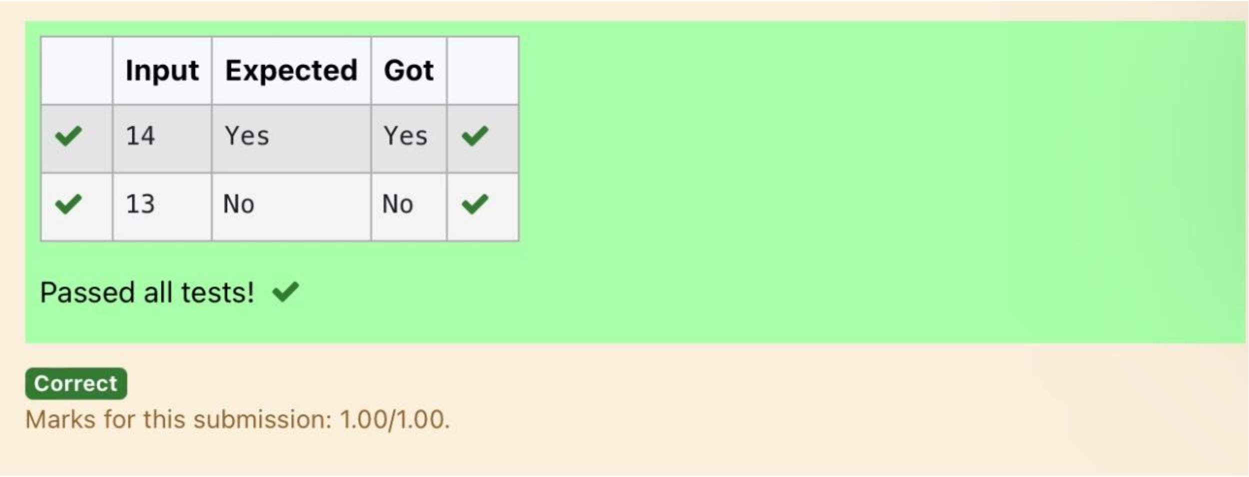
Output:

No

Program:

```
a=int(input())
flag=0 for i in
range(10):     for j in
range(10):
if(i*j==a):
flag=1           break
if(flag==1):
print("Yes") else:
   print("No")
```

Output:



	Input	Expected	Got	
✓	14	Yes	Yes	✓
✓	13	No	No	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 4.10 **Date: 14/04/2024**

Register No.: 231401051 **Name: B.Keerthna**

Perfect Square After adding One

Given an integer N, check whether N the given number can be made a perfect square after adding 1 to it.

Input Format:

Single integer input.

Output Format:

Yes or No.

Example Input:

24

Output:

Yes

Example Input:

26

Output:

No

For example:

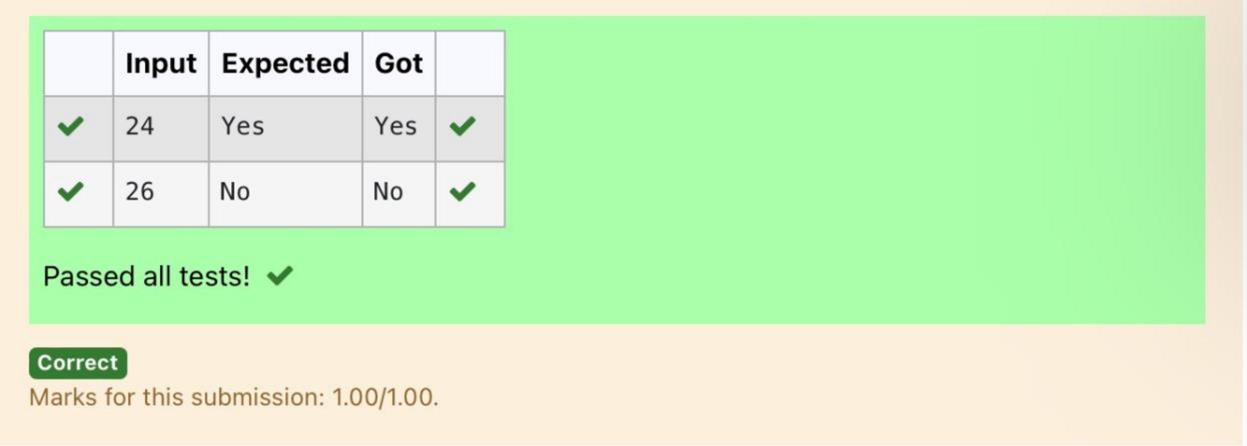
Input	**Result**
24	Yes

Program:

```
import math

n=int(input()) a=n+1
```

```
sr=int(math.sqrt(a))

if(sr*sr==a):

  print("Yes") else:

   print("No")
```

Output:



	Input	Expected	Got	
✓	24	Yes	Yes	✓
✓	26	No	No	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.