04-Iteration Control Structures

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

Register No: 231401035 Name: HEMALATHA.K

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: 231401035 **Name: HEMALATHA.K**

NonRepeated 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: 231401035 **Name: HEMALATHA.K**

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: 231401035 **Name: HEMALATHA.K**

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

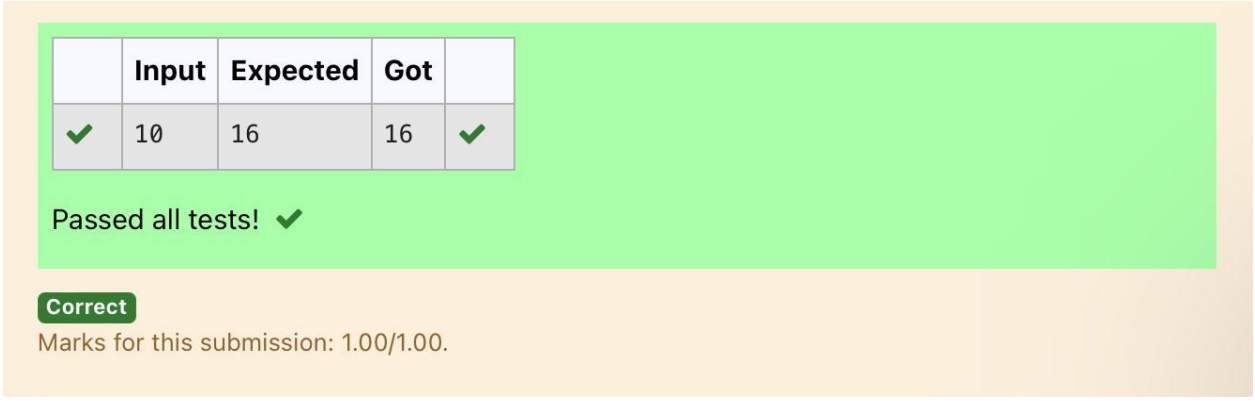
Output:

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: 231401035 **Name: HEMALATHA.K**

Nth Fibonacci

Write aprogramto return the nth number in the fibonacci series. The value of N will be passed to theprogramas 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! ✔

Correct

Marks for this submission: 1.00/1.00.

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

Register No: 231401035 **Name: HEMALATHA.K**

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 aprogramto 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 utult**
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: 231401035 **Name: HEMALATHA.K**

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

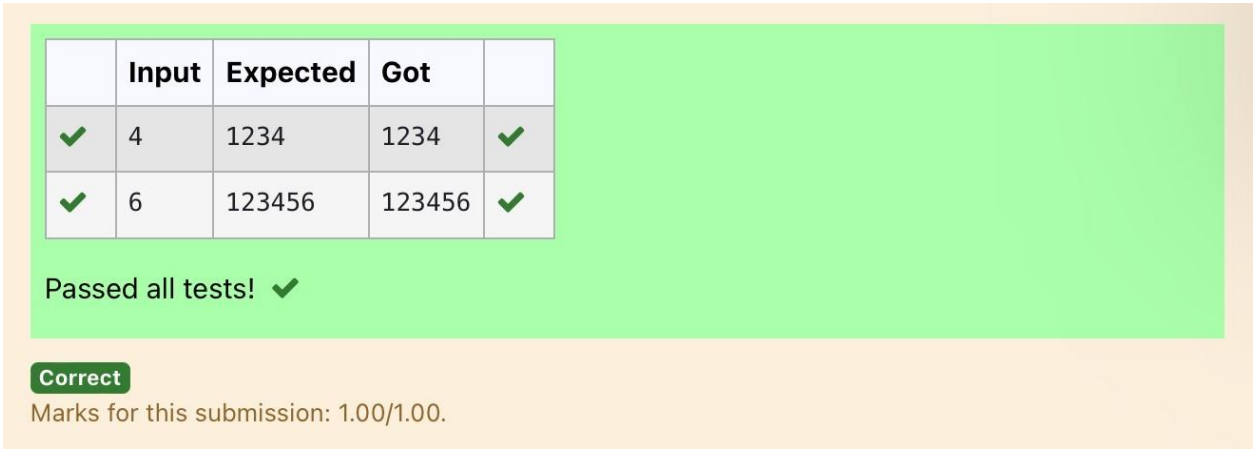
For example:

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! ✔

Correct

Marks for this submission: 1.00/1.00.

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

Register No: 231401035 **Name: HEMALATHA.K**

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: 231401035 **Name: HEMALATHA.K**

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: 231401035 **Name: HEMALATHA.K**

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.