04 - Iteration Control Structures

Ex. No. : 4.1 **Date: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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: 17.042024**

Register No.: 231501045 **Name:**Ezhil Adhithya P

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 non- repeated digit '9' in this number
If the given number is 1015, the program should return 2 because there are 2 non- repeated digits in this number, '0', and '5'.
If the given number is 108, the program should return 3 because there are 3 non- repeated digits in this number, '1', '0', and '8'.
If the given number is 22, the function should return 0 because there are NO non- repeated 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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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

Outpu

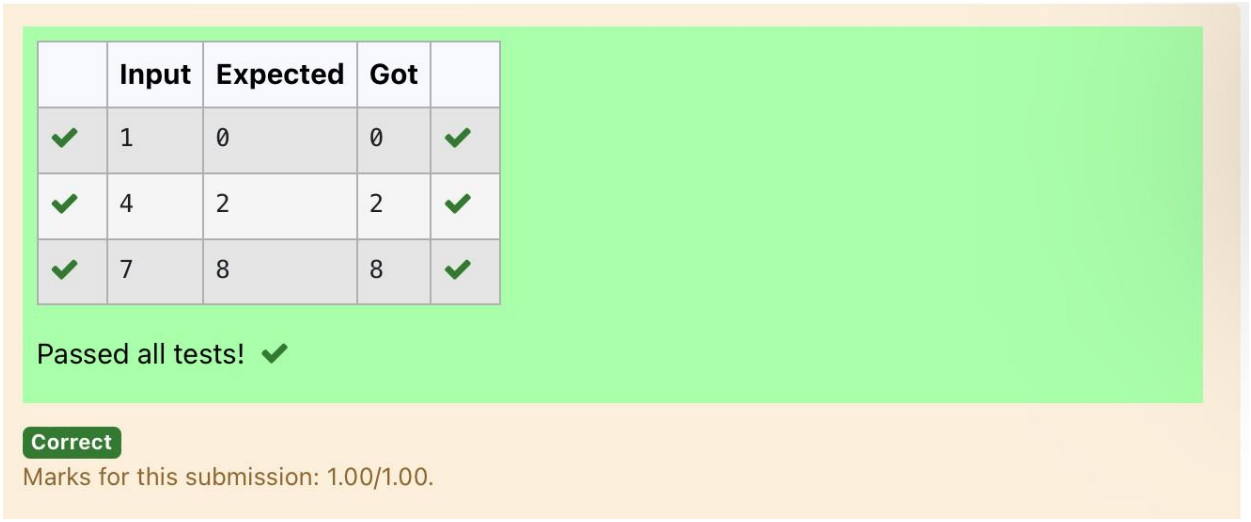
t 8

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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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:

Input	Result

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.po
    w(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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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

Inpu

t 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: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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))
```

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

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Output:

Ex. No. : 4.9 **Date: 17.042024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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:17.04.2024**

Register No.: 231501045 **Name:** Ezhil Adhithya P

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:

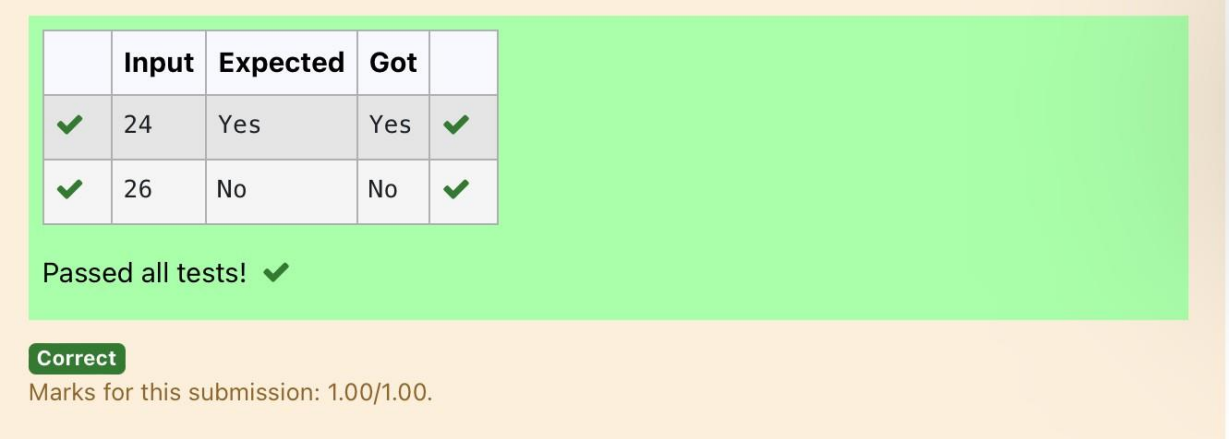
Input	Result
24	Yes

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.