04 - Iteration Control Structures

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

Register No.: 231401026 **Name: S DIVYA**

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.

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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	Resul t
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:231401026   **Name: S DIVYA**

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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.

Next Perfect Square

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

Input Format:

Integer input from stdin.

Output Format:
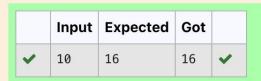
Perfect square greater than N.

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.

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! ✔

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

Register No:231401026   Name: S DIVYA

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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 ut	Res 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:

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

Register No:231401026   **Name: S DIVYA**

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:231401039   **Name: A. Isai Priya**

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:

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

Register No:231401026   **Name: S DIVYA**

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.

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	Resul t
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.