

04 - Iteration Control Structures

Ex. No. : 4.1

Date: 17/4/24

Register No.: 231801140

Name: ROSHINI R

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: 17/4/24

Register No.: 231801140

Name: ROSHINI R

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: 17/4/24

Register No.: 231801140

Name: ROSHINI R

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: $2 \leq N \leq 5000$, 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%i==0):
        flag=1
    elif(a%i!=0):
        flag=0
    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: 24/4/24

Register No.: 231801140

Name: ROSHINI R

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: 24/4/24

Register No.: 231801140

Name: ROSHINI R

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! ✓

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 4.6

Date: 24/4/24

Register No.: 231801140

Name: ROSHINI R

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.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: 24/4/24

Register No.: 231801140

Name: ROSHINI R

Sum of Series

Write a program to find the sum of the series $1 + 11 + 111 + 1111 + \dots + n$ 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: 24/4/24

Register No.: 231801140

Name: ROSHINI R

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: 24/4/24

Register No.: 231801140

Name: ROSHINI R

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: 1/5/24

Register No.: 231801140

Name: ROSHINI R

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.