

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

Register No.: 231401007 Name: Ananya Sriram

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

```
a=int(input())
for i in range(1,a+1):
if a%i==0:
print(i, end=")
```

	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	~

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

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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 \geq 1 and \leq 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:

def count(n):
digits=str(n)
unique=list()
for i in digits:
if i not in unique:
unique.append(i)
return len(unique)
n=int(input())
print(count(n))

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

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

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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: $2 \le N \le 5000$, where N is the given number.

Example 1: if the given number N is 7, the method must return 2 Example 2: if the given number N is 10, the method must return 1

For example:

Input	Result
7	2
10	1

```
N=int(input())
if N==1:
print("1")
elif N>1:
for i in range(2,n):
if(N%i)==0:
print("1")
break
else:
print("2")
```

	Input	Expected	Got	
~	7	2	2	~
~	10	1	1	~

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

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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:

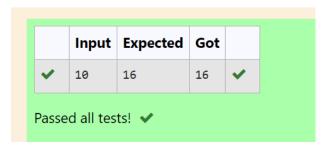
10

Output:

16

Program:

from math import sqrt
n=int(input())
while int(sqrt(n))!=sqrt(n):
n=n+1
print(n)



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

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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

```
n=int(input())
if n<2:
print(n-1)
else:
n=n-1
fs=[0,1]
for i in range(1,n):
fs.append(fs[i]+fs [i-1])
print(fs [n])</pre>
```

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

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

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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:

InputResult

175 Yes

123 No

Program:

n=int(input())
digits=str(n)
sum=0
power-1
for i in digits:
sum+=int(i)**power

power+=1 if sum==n: print("Yes") else: print("No")

	Input	Expected	Got	
~	175	Yes	Yes	~
~	123	No	No	~

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

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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:
def sum_of_series(n):
    sum = 0
    current_term = 0
    for i in range(1, n + 1):
        current_term = current_term * 10 + 1
        sum += current_term
    return sum

# Taking input from user
n = int(input("Enter the number of terms: "))
result = sum_of_series(n)
print(f"The sum of the series for {n} terms is: {result}")
```

	Input	Expected	Got	
~	4	1234	1234	~
~	6	123456	123456	~

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

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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:

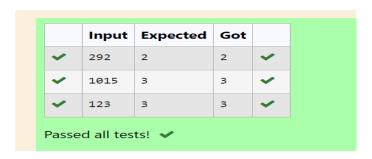
Input	Result
292	2
1015	3

Program:

N = int(input())

unique_digits = set(str(N))

print(len(unique_digits))



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

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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
```

```
a=int(input())
if a%2==0 or a%3==0 or a%5==0 or a%7==0 or a%9==0:
print("Yes")
else:
print("No")
```

	Input	Expected	Got	
~	14	Yes	Yes	~
~	13	No	No	~

Correct

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

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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

import math
a=int(input())
b=math.sqrt(a+1)
if b.is_integer():
print("Yes")
else:
print("No")

