

Ex. No. : 4.1
Register No.: 231901039

Date: 13.04.24
Name: Ram Haygrev S

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

Result

1

4

7

0

2

8

Program:

```
a=int(input())
```

```
b=0
```

```
c=1
```

```
if(a==1):
```

```
    print("0")
```

```
elif(a==2):
```

```
    print("1")
```

```
else:
```

```
    for i in range (3,a+1):
```

```
        d=b+c
```

```
b=c
c=d
print(d)
```

Ex. No. : 4.2
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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:

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

Ex. No. : 4.3
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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

Program:

```
a=int(input())
```

```
c=0
```

```
for i in range(1,10): for j in range(1,10):
```

```
if i*j==a:
```

```
c=1
```

```
if(c==1):
```

```
print("Yes")
```

```
▼else:
```

```
print("No")
```

Ex. No. : 4.4

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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:

```
a=input()
```

```
b=len(set(a))
```

```
print(b)
```

Ex. No. : 4.5

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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 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.

Input

Result

292

1

1015

2

108

3

22

0

Program:
a={}
for i in input:
 if i in a:a[i]+=1
 else:a[i]=1
print(sum([1 for i in a if a[i]==1]))

Ex. No. : 4.6
Register No.: 231901039

Date: 13.04.24
Name: Ram Haygrev S

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:
import math

```

a=int(input())
b = a + 1
while b > 0 :
    m=math.sqrt(b)
    if(m==int(m)):
        print(b)
        break
    else:
        b = b + 1

```

Ex. No. : 4.7
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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:

```

a=int(input())
t=1
s=0
for i in range(a)
    s+=t

```

```
t=t*10+1  
print(s)
```

Ex. No. : 4.8
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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: $2 \leq N \leq 5000$, 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())  
c=0  
for i in range(2,a):  
    if(a%i==0):  
        c=1  
if(c==1):  
    print("1")  
elif(c==0): print("2")
```

Ex. No. : 4.9
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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:

Input

Result

175

Yes

123

No

Program:

```
a=input()
```

```
n=len(a)
```

```
r=0
```

```
for i,d in enumerate(a):
```

```
    r+=int(d)**(i+1)
```

```
    if r==int(a):
```

```
        print("Yes")
```

```
    else:
```

```
        print("No")
```

Ex. No. : 4.10

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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

Program:

```
import math
```

```
a=int(input())
```

```
b=a+1
```

```
c=math.sqrt(b)
```

```
if(c==int(c)):
```

```
    print("Yes")
```

```
else:
```

```
    print("No")
```