Ex. No. : 4.1 Date: 13.04.24
Register No.: 231901039 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 Date: 13.04.24

Register No.: 231901039 Name: Ram Haygrev S

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 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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 Date: 13.04.24

Register No.: 231901039 Name: Ram Haygrev S

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 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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 Date: 13.04.24
Register No.: 231901039 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 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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:

```
a=int(input())
t=1
s=0
for i in range(a)
    s+=t
     t=t*10+1
print(s)
```

Ex. No. : 4.8 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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())
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 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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 Date: 13.04.24
Register No.: 231901039 Name: Ram Haygrev S

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")
```