04-IterationControlStructures

Ex.No. : 4.1 Date: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

Factorsofanumber

Determinethefactorsofanumber(i.e.,allpositiveintegervaluesthatevenlydivide into a number).

Forexample:

Input	Result	
20	1245102020	

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: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

NonRepeatedDigitCount

Writeaprogramtofindthecountofnon-repeateddigitsinagivennumberN.The numberwillbepassedtotheprogramasaninputoftypeint.
Assumption: The input number will be a positive integer number >= 1 and <= 25000.Some examples are as below.
Ifthegivennumberis 292,theprogram should return1 becausethereis only1 non-repeated digit '9' in this number
Ifthegivennumberis1015,theprogramshouldreturn2becausethereare2non- repeated digits in this number, '0', and '5'.
Ifthegivennumberis108,theprogramshouldreturn3becausethereare3non- repeated digits in this number, '1', '0', and '8'.
Ifthegivennumberis22,thefunctionshouldreturn0becausethereareNOnon- repeated digits in this number.

Forexample:

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)
foriinrange(len(l)):
    ifl.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: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

PrimeChecking

Write a program that finds whether the given number N is Prime or not. If the number isprime,theprogramshouldreturn2elseitmustreturn1.

Assumption: 2 <= N <=5000, where N is the given number.

Example1: if the given number N is 7, the method must return 2

Example2:ifthegivennumberNis10,themethodmustreturn1

Forexample:

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.

Ex.No. : 4.4 Date: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

NextPerfectSquare

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

Input Format:

Integerinputfromstdin. Output

Format:

PerfectsquaregreaterthanN.

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: 21-03-2024**

RegisterNo.: 2116231501072 **Name: Kanishka P**

NthFibonacci

Writeaprogramto returnthe nthnumberin thefibonacci series.ThevalueofN will be passed to the program as input.

NOTE:Fibonacciserieslookslike–

0,1,1,2,3,5,8,13,21,34,55,...andsoon.

i.e.Fibonacciseriesstartswith0and1,andcontinuesgeneratingthenextnumber as the sum of the previous two numbers.

- firstFibonaccinumberis0,
- secondFibonaccinumberis1,
- thirdFibonaccinumberis1,
- fourth Fibonaccinumber is2,
- fifthFibonaccinumberis3,
- sixthFibonaccinumberis5,
- seventhFibonaccinumberis8,andsoon.

Forexample:

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: 21-03-2024**

RegisterNo.: 2116231501072 **Name: Kanishka P**

DisariumNumber

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.

InputFormat:

SingleIntegerInputfromstdin.

Output Format:

YesorNo.

ExampleInput:

175

Output:

Yes

Explanation

1^1+7^2+5^3=175

ExampleInput:

123

Output:

No

Forexample:

Input	Result
175	Yes
123	No

importmath

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: 21-03-2024**

RegisterNo.: 2116231501072 **Name: Kanishka P**

SumofSeries

Writea program tofindthesum of theseries 1 +11 +111 +1111 +... + nterms (n willbegivenasinputfromtheuserandsum willbetheoutput)

SampleTestCases

Test Case 1

Input

4

Output

1234

Explanation:

asinputis4,haveto take4terms. 1 +

11 + 111 + 1111

TestCase2

Input

6

Output

123456

Forexample:

Input	Result
3	123

Program:

```
n=int(input())

b=1

sum=0

foriinrange(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: 21-03-2024**

RegisterNo.: 2116231501072 **Name: Kanishka P**

UniqueDigitCount

WriteaprogramtofindthecountofuniquedigitsinagivennumberN.Thenumber willbepassedtotheprogram asaninput oftypeint.
Assumption: The input number will be a positive integer number >= 1 and <= 25000.For e.g.
Ifthegivennumberis292,theprogramshouldreturn2becausethereareonly2 unique digits '2' and '9' in this number
If the given number is 1015, the program should return 3 because there are 3 uniquedigits in this number, '1', '0', and '5'.
Forexample:

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: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

Productofsingledigit

Given a positive integer N, check whether it can be represented as a product of singledigit numbers.

InputFormat:

SingleIntegerinput.

OutputFormat:

OutputdisplaysYesifconditionsatisfieselseprintsNo. Example

Input:

14

Output:

Yes

ExampleInput:

13

Output:

No

Program:

```
a=int(input())
flag=0
for i in range(10):
    forjinrange(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: 21-03-2024

RegisterNo.: 2116231501072 Name: Kanishka P

PerfectSquareAfter addingOne

GivenanintegerN, checkwhetherNthe givennumbercanbemadeaperfectsquare after adding 1 to it.

Input

Format:Singleinteg

erinput. Output

Format:

YesorNo.

ExampleInput:

24

Output:

Yes

ExampleInput:

26

Output:

No

Forexample:

Input	Result
24	Yes

Program:

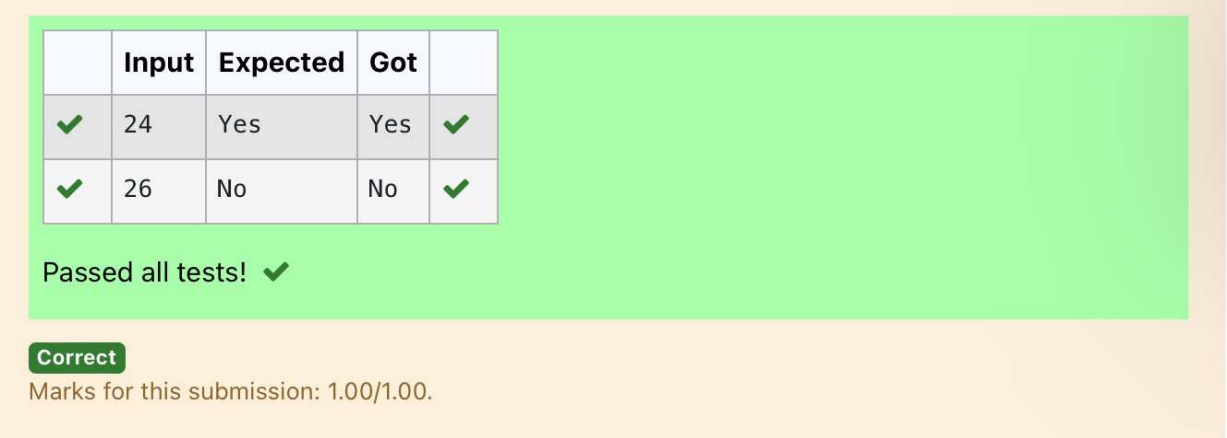
```
import math

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.