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CS23336-Introduction to Python Programming

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State	Finished
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Time taken	42 mins 40 secs
Marks	10.00/10.00
Grade	**100.00** out of 100.00

Question 1

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Given an integer N, check whether N the given number can be made a perfect square after adding 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

Answer:(penalty regime: 0 %)

```
1 from math import sqrt
2 a=int(input())
```

```
b=a+1
num_sqrt=int(sqrt(b))
if(num_sqrt*num_sqrt==b):
    print("Yes")
else:
    print("No")
```

Feedback

Input	Expected	Got
24	Yes	Yes
26	No	No

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 2

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Let’s print a chessboard!

Write a program that takes input:

Integer N(represents the rows and columns of a chessboard) and also the starting character of the chessboard

Output Format

Print the chessboard as per the given examples

Sample Input / Output

Input:

2

W

Output:

WB

BW

Answer:(penalty regime: 0 %)

```
def p(n,sc):
    if sc=='W':
        oc='B'
    else:
        oc='W'
    for row in range(n):
        line=""
        for col in range(n):
            if(row + col)%2==0:
                line += sc
            else:
                line +=oc
        print(line)
n=int(input())
sc=input().strip()
p(n,sc)
```

Feedback

Input	Expected	Got
2 W	WB BW	WB BW
3 B	BWB WBW BWB	BWB WBW BWB

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 3

Correct
Mark 1.00 out of 1.00
Flag question

Question text

An e-commerce company plans to give their customers a special discount for Christmas. They are planning to offer a flat discount. The discount value is calculated as the sum of all the prime digits in the total bill amount.

Write an algorithm to find the discount value for the given total bill amount.

Input

The input consists of an integer order value, representing the total bill amount.

Output

Print an integer representing the discount value for the given total bill amount.

Example Input

578

Output

12

Explanation:

Since 5 and 7 are the prime digits,then sum of 5+7=12

Answer:(penalty regime: 0 %)

```
def c(o):
    p={'2','3','5','7'}
    d=0
    for char in str(o):
        if char in p:
            d +=int(char)
    print(d)
o=int(input().strip())
c(o)
```

Feedback

Input	Expected	Got
578	12	12
456	5	5
7032	12	12

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 4

Correct
Mark 1.00 out of 1.00
Flag question

Question text

You are choreographing a circus show with various animals. For one act, you are given two kangaroos on a number line ready to jump in the positive direction.
•The first kangaroo starts at position x1 and moves at a speed v1 meters per jump.
•The second kangaroo starts at position x2 and moves at a speed of v2 meters per jump and x2 > x1
•You have to figure out to get both kangaroos at the same position at the same time as part of the show before k jumps. If it is possible, return YES, otherwise return NO.

Input Format:
x1-position of kangaroo1
v1-Speed of kangaroo1
x2-position of kangaroo2
v2-Speed of kangaroo2
k-jumps

Output Format:
Both kangaroos are at the same position within k jumps, YES, otherwise NO.

For example:

Input Result

```
0
3
4     YES
2
6
```

Answer:(penalty regime: 0 %)

```
def k_m(x1,v1,x2,v2,k):
    if v1==v2:
        return x1==x2
    dx=x2-x1
    dv=v1-v2
    if dx%dv==0:
        km=dx//dv
        return 0 <=km <=k
    return False
x1=int(input())
v1=int(input())
x2=int(input())
v2=int(input())
k=int(input())
if k_m(x1,v1,x2,v2,k):
    print("YES")
else:
    print("NO")
```

Feedback

Input Expected Got

```
0
3
4     YES       YES
2
6


0
3
2     NO        NO
4
8
```

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 5

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Write python program to print the following pattern based on input size.

Input:

3

Output:

```
   1
  2 3
 4 5 6
```

For example:

Input	Result
4	1 2 3 4 5 6 7 8 9 10

Answer:(penalty regime: 0 %)

```
row=int(input())
num=1
for i in range(1,row+1):
    for space in range(1,(row-i)+1):
        print(end=" ")
    for j in range(1,i+1):
        print(num,end=" ")
        num+=1
    print( )
```

Feedback

Input	Expected	Got
3	1 2 3 4 5 6	1 2 3 4 5 6
4	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 6

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Write a program to find the count of the number of prime numbers in a specified range.

The starting and ending number of the range will be provided as input to the program.

Assumption: 2 <=starting number of the range<= ending number of the range<=7919

Example1: If the starting and ending number or the range is given as 2 and 20, the program must return 8, because there are 8 prime numbers in the specified range from 2 to 20. namely (2. 3. 5, 7, 11, 13, 17, 19)

Example2: If the starting and ending number of the range is given as 700 and 725, the program must return 3, because there are 3 prime numbers in the specified range from 700 to 725, namely (701, 709, 719)

For example:

Input	Result
2 20	8
700 725	3

Answer:(penalty regime: 0 %)

```
import math
def ip(n):
    if n<=1:
        return False
    if n<=3:
        return True
    if n%2==0 or n%3==0:
```

```
        return False
    i=5
    while i*i<=n:
        if n%i==0 or n%(i+2)==0:
            return False
        i+=6
    return True
def c(s,e):
    p=0
    for n in range(s,e+1):
        if ip(n):
            p +=1
    return p
s=int(input().strip())
e=int(input().strip())
print(c(s,e))
```

Feedback

Input	Expected	Got
2 20	8	8
700 725	3	3

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 7

Correct
Mark 1.00 out of 1.00
Flag question

Question text

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

Answer:(penalty regime: 0 %)

```
def c(n):
    ns=str(n)
    d={}
    for digit in ns:
        if digit in d:
            d[digit]+=1
        else:
            d[digit]=1
    nr=sum(1 for count in d.values() if count==1)
    return nr
n=int(input())
if 1<=n<=25000:
    r=c(n)
    print(r)
```

Feedback

Input	Expected	Got
292	1	1
1015	2	2
108	3	3

Input	Expected	Got
22	0	0

Passed all tests!
Correct
Marks for this submission: 1.00/1.00.

Question 8

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Write a program to find the count of the number of prime numbers in a specified range.

The starting and ending number of the range will be provided as input to the program.

Assumption: 2 <=starting number of the range<= ending number of the range<=7919

Example1: If the starting and ending number or the range is given as 2 and 20, the program must return 8, because there are 8 prime numbers in the specified range from 2 to 20. namely (2. 3. 5, 7, 11, 13, 17, 19)

Example2: If the starting and ending number of the range is given as 700 and 725, the program must return 3, because there are 3 prime numbers in the specified range from 700 to 725, namely (701, 709, 719)

For example:

Input	Result
2 20	8
700 725	3

Answer:(penalty regime: 0 %)

```
import math
def ip(n):
    if n<=1:
        return False
    if n<=3:
        return True
    if n%2==0 or n%3==0:
        return False
    i=5
    while i*i<=n:
        if n%i==0 or n%(i+2)==0:
            return False
        i+=6
    return True
def c(s,e):
```

```
def c(s,e):
    p=0
    for n in range(s,e+1):
        if ip(n):
            p+=1
    return p
s=int(input().strip())
e=int(input().strip())
print(c(s,e))
```

Feedback

Input	Expected	Got
2 20	8	8
700 725	3	3

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 9

Correct
Mark 1.00 out of 1.00
Flag question

Question text

An automorphic number is a number whose square ends with the number itself.

For example, 5 is an automorphic number because 5*5 =25. The last digit is 5 which same as

the given number.

If it is an automorphic number display “Automorphic” else display “Not Automorphic”.

Input Format:

Take a Integer from Keyboard

Output Format:

Print Automorphic if given number is Automorphic number, otherwise Not Automorphic

Example input:

5

Output:

Automorphic

Example input:

25

Output:

Automorphic

Example input:

7

Output:

Not Automorphic

Answer:(penalty regime: 0 %)

```
n=int(input())
s=n*n
if str(s).endswith(str(n)):
    print("Automorphic")
else:
    print("Not Automorphic")
```

Feedback

Input	Expected	Got
5	Automorphic	Automorphic
625	Automorphic	Automorphic
7	Not Automorphic	Not Automorphic

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 10

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Write a program that given an integer ‘n’, prints the number of integers that are less than or equal to ‘n’ and co-prime to ‘n’

Two integers a and b are said to be relatively prime or co-prime if the only positive integer that evenly divides both of them is 1. That is, the only common positive factor of the two numbers is 1. This is equivalent to their greatest common divisor being 1.

Input Format:

One line containing the value of 'n', where 1<=n<=10,000

Output Format:

One line containing the number of integers that are co-prime to n and less than or equal to 'n'

Sample Test Cases

Test Case 1

Input

10

Output

4

Test Case 2

Input

23

Output

22

Test Case 3

Input

11

Output

10

Answer:(penalty regime: 0 %)

```
def c(n):
    r=n
    p=2
    while p*p<=n:
        if n%p==0:
            while n%p==0:
                n//=p
            r-=r//p
        p+=1
    if n>1:
        r-=r//n
    return r
n=int(input())
r=c(n)
```

```
print(r)
```

Feedback

Input	Expected	Got
10	4	4
23	22	22
11	10	10

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Finish review