


CS23336-Introduction to Python Programming

Started on	Wednesday, 28 August 2024, 1:28 PM
State	Finished
Completed on	Wednesday, 28 August 2024, 2:23 PM
Time taken	55 mins 5 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](#)

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 %)

```
1 def c(n):
2     ns=str(n)
3     d={}
4     for digit in ns:
5         if digit in d:
6             d[digit]+=1
7         else:
8             d[digit]=1
9     nr=sum(1 for count in d.values() if count==1)
10    return nr
11    n=int(input())
12    if 1<=n<=25000:
13        r=c(n)
14        print(r)
```

	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.

Question **2**

Correct

Mark 1.00 out of 1.00

🚩 [Flag question](#)

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 x_1 and moves at a speed v_1 meters per jump.
- The second kangaroo starts at position x_2 and moves at a speed of v_2 meters per jump and $x_2 > x_1$
- 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:

x_1 -position of kangaroo1

v_1 -Speed of kangaroo1

x_2 -position of kangaroo2

v_2 -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 2 6	YES

Answer: (penalty regime: 0 %)

```

1 def k_m(x1,v1,x2,v2,k):
2     if v1==v2:
3         return x1==x2
4     dx=x2-x1
5     dv=v1-v2
6     if dx%dv==0:
7         km=dx//dv
8         return 0 <=km <=k
9     return False
10 x1=int(input())
11 v1=int(input())
12 x2=int(input())
13 v2=int(input())
14 k=int(input())
15 if k_m(v1,v1,v2,v2,k):

```

```

15  if K_M(X1,V1,X2,V2,K):
16      print("YES")
17  else:
18      print("NO")

```

	Input	Expected	Got	
✓	0 3 4 2 6	YES	YES	✓
✓	0 3 2 4 8	NO	NO	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **3**

Correct

Mark 1.00 out of 1.00

🚩 [Flag question](#)

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 %)

```
1 row=int(input())
2 num=1
3 for i in range(1,row+1):
4     for space in range(1,(row-i)+1):
5         print(end=" ")
6     for j in range(1,i+1):
7         print(num,end=" ")
8         num+=1
9     print( )
```

	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 **4**

Correct

Mark 1.00 out of 1.00

 [Flag question](#)

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 %)

```
1 n=int(input())
2 s=n*n
3 if str(s).endswith(str(n)):
4     print("Automorphic")
5 else:
6     print("Not Automorphic")
```

	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 **5**

Correct

Mark 1.00 out of 1.00

[Flag question](#)

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

Answer: (penalty regime: 0 %)

```

1 def p(n,sc):
2     if sc=='W':
3         oc='B'
4     else:
5         oc='W'
6     for row in range(n):
7         line=""
8         for col in range(n):
9             if (row + col)%2==0:
10                line += sc
11            else:
12                line +=oc
13        print(line)
14 n=int(input())
15 sc=input().strip()
16 p(n,sc)

```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **6**

Correct

Mark 1.00 out of 1.00

🚩 [Flag question](#)

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: $2 \leq \text{starting number of the range} \leq \text{ending number of the range} \leq 7919$

Example1: If the starting and ending number of 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 %)

```
1 import math
2 def ip(n):
3     if n<=1:
4         return False
5     if n<=3:
6         return True
7     if n%2==0 or n%3==0:
8         return False
9     i=5
10    while i*i<=n:
11        if n%i==0 or n%(i+2)==0:
12            return False
13        i+=6
14    return True
15 def c(s,e):
16     p=0
17     for n in range(s,e+1):
18         if ip(n):
19             p +=1
20     return p
21 s=int(input().strip())
22 e=int(input().strip())
23 print(c(s,e))
```

	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](#)

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 %)

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

```
8 o=int(input().strip())
9 c(o)
```

	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 **8**

Correct

Mark 1.00 out of 1.00

[Flag question](#)

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 $1 \leq n \leq 10,000$

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 %)

```
1 def c(n):
2     r=n
3     p=2
4     while p*p<=n:
5         if n%p==0:
6             while n%p==0:
7                 n//=p
8                 r-=r//p
9             p+=1
10        if n>1:
11            r-=r//n
12        return r
13 n=int(input())
14 r=c(n)
15 print(r)
```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

//

Question 9

Correct

Mark 1.00 out of 1.00

🚩 [Flag question](#)

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: $2 \leq \text{starting number of the range} \leq \text{ending number of the range} \leq 7919$

Example1: If the starting and ending number of 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

Input	Result
700 725	3

Answer: (penalty regime: 0 %)

```

1 low=int(input())
2 up=int(input())
3 count=0
4 for num in range(low,up+1):
5     if num>1:
6         for i in range(2,num):
7             if(num%i)==0:
8                 break
9         else:
10            count+=1
11 print(count)

```

	Input	Expected	Got	
✓	2 20	8	8	✓
✓	700 725	3	3	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question **10**

Correct

Mark 1.00 out of 1.00

🚩 [Flag question](#)

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())
3 b=a+1
4 num_sqrt = int(sqrt(b))
5 if(num_sqrt*num_sqrt == b):
6     print("Yes")
7 else:
8     print("No")
```

	Input	Expected	Got	
✓	24	Yes	Yes	✓
✓	26	No	No	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Finish review