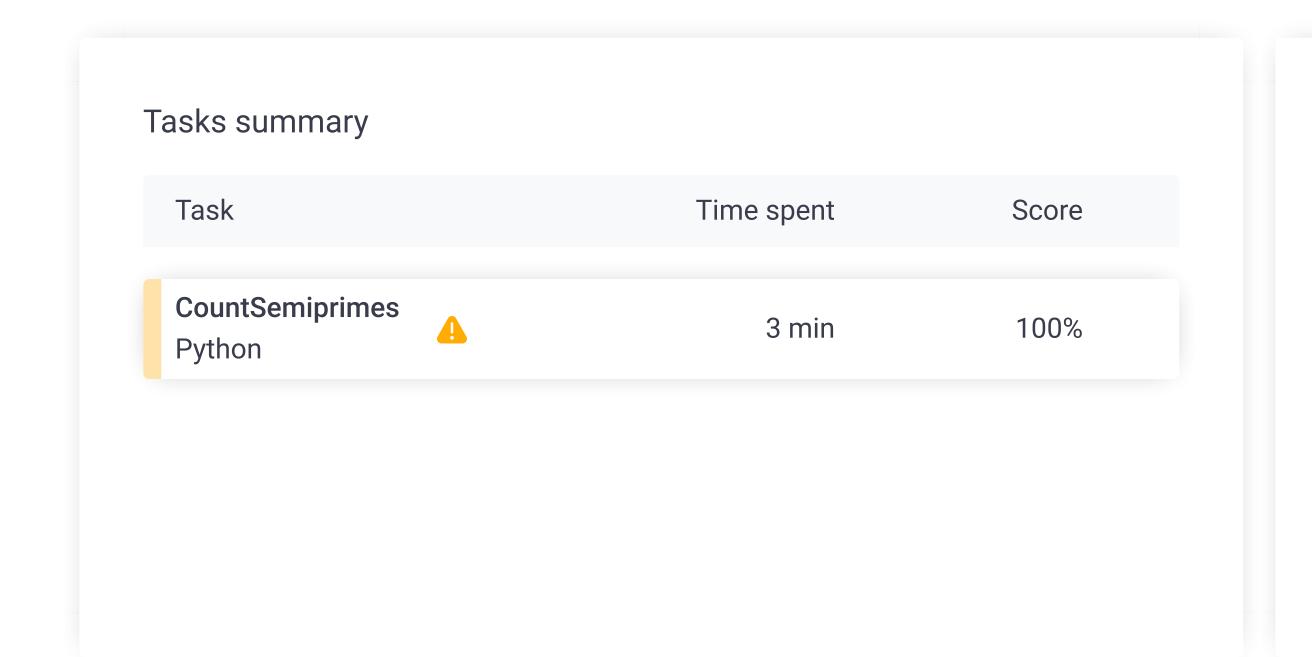
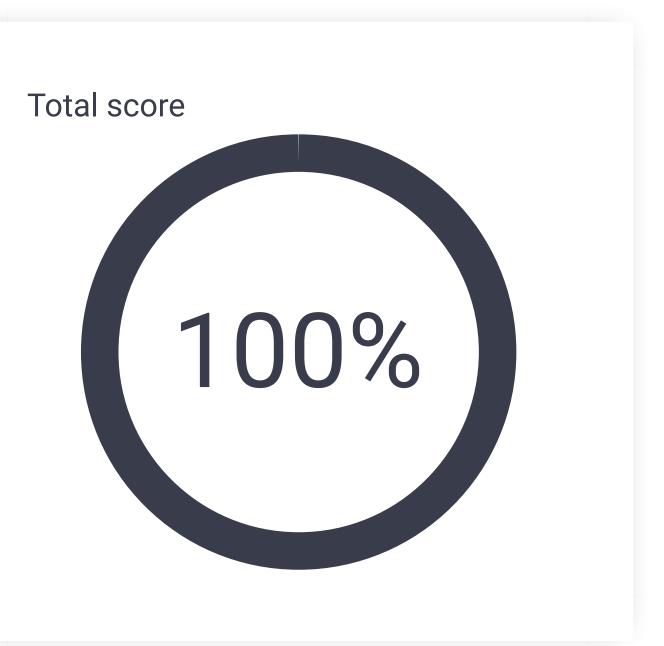
Candidate Report: trainingRNXXND-NRG

Test Name:

Summary Timeline





Tasks Details



Task description

A prime is a positive integer X that has exactly two distinct divisors: 1 and X. The first few prime integers are 2, 3, 5, 7, 11 and 13.

A semiprime is a natural number that is the product of two (not necessarily distinct) prime numbers. The first few semiprimes are 4, 6, 9, 10, 14, 15, 21, 22, 25, 26.

You are given two non-empty arrays P and Q, each consisting of M integers. These arrays represent queries about the number of semiprimes within specified ranges.

(P[K], Q[K]), where $1 \le P[K] \le Q[K] \le N$.

Query K requires you to find the number of semiprimes within the range

For example, consider an integer N = 26 and arrays P, Q such that:

P[0] = 1Q[0] = 26Q[1] = 10P[1] = 4P[2] = 16Q[2] = 20

The number of semiprimes within each of these ranges is as follows:

- (1, 26) is 10,
- (4, 10) is 4, • (16, 20) is 0.

Write a function:

def solution(N, P, Q)

that, given an integer N and two non-empty arrays P and Q consisting of M integers, returns an array consisting of M elements specifying the consecutive answers to all the queries.

For example, given an integer N = 26 and arrays P, Q such that:

P[0] = 1Q[0] = 26Q[1] = 10P[1] = 4P[2] = 16Q[2] = 20

the function should return the values [10, 4, 0], as explained above.

Write an **efficient** algorithm for the following assumptions:

- N is an integer within the range [1..50,000]; • M is an integer within the range [1..30,000];
- each element of arrays P, Q is an integer within the range
- [1..N];
- $P[i] \leq Q[i]$.

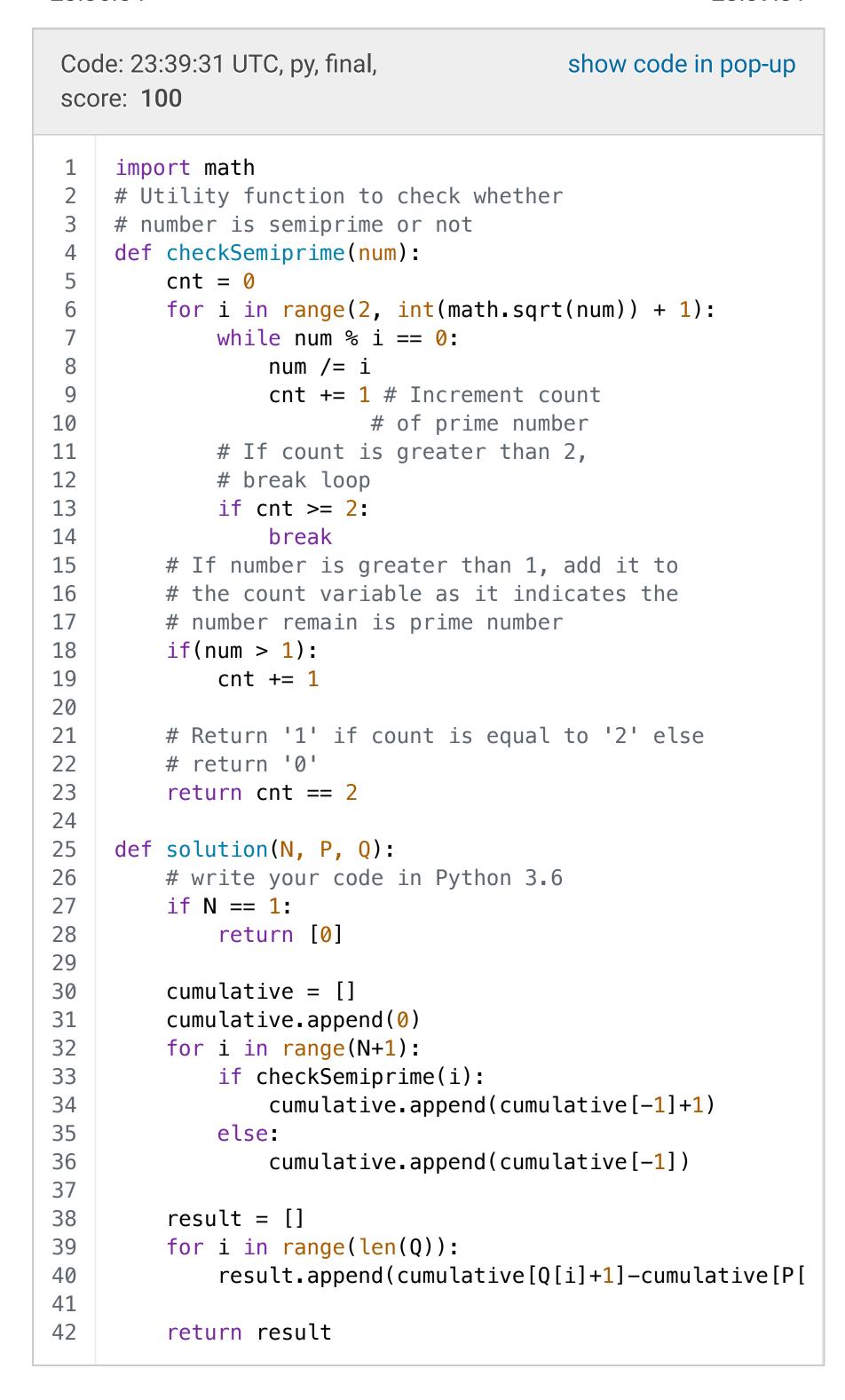
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Solution

Task timeline

Programming language used:	Python	
Total time used:	3 minutes	?
Effective time used:	3 minutes	?
Notes:	not defined yet	

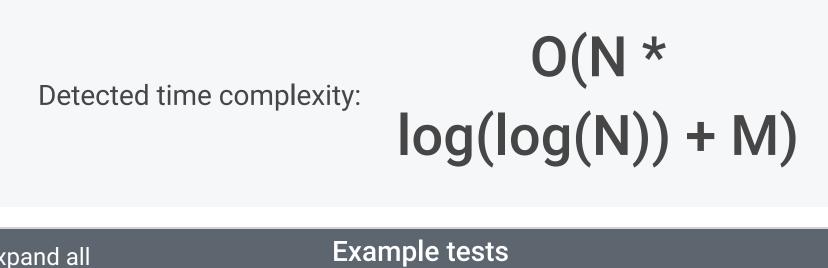




Analysis summary

The solution obtained perfect score.

Analysis 2



expand all Example tests				
•	example example test	~	OK	
expand all Correctness tests				
•	extreme_one small N = 1	~	OK	
	extreme_four small N = 4	~	OK	
	small_functional small functional	'	OK	
	small_random small random, length = ~40	'	OK	
expar	nd all Performance tes	sts		
	medium_random small random, length = ~300	~	OK	
•	large_small_slices large with very small slices, length = ~30,000	'	OK	
>	large_random1 large random, length = ~30,000	V	OK	
>	large_random2 large random, length = ~30,000	~	OK	
>	extreme_large all max ranges	'	OK	