

Python Assignment List Week 5

1. Write a Python program to sum all the items in a list.
2. Write a Python program to remove duplicates from a list.
3. Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples
Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]
4. Write a Python function that takes two lists and returns True if they have at least one common member.
5. Write a Python program to flatten a shallow list.
6. Write a Python program using Sieve of Eratosthenes method for computing primes up to a specified number.
Note: In mathematics, the sieve of Eratosthenes, (Ancient Greek: κόσκινον Ἐρατοσθένους, kóskinon Eratosthénous) one of a number of prime number sieves, is a simple, ancient algorithm for finding all prime numbers up to any given limit.
7. Write a Python program to convert a list of multiple integers into a single integer.
Sample list: [11, 33, 50]
Expected Output: 113350
8. Write a program which accepts a sequence of words separated by whitespace as input to print the words composed of digits only.
Example:
If the following words is given as input to the program:
2 cats and 3 dogs.
Then, the output of the program should be:
['2', '3']
In case of input data being supplied to the question, it should be assumed to be a console input.
9. Take n numbers as input and calculate the co-relation between two pair of numbers and store the correlation value into a list.
10. Take a 2D list having n elements calculate the sum of both the diagonals and check which one is greater.
11. N Indian Air Force fighter planes are located in different bases across the country. Each airbase is described by some integer coordinate (x,y). The Air Force plans to do surgical strikes on a maximum of M different targets in enemy territory (which are also described by Cartesian coordinates) and then come back to the common main airbase at coordinate (baseX,baseY) .

Each army base and the targets are recognized by a secret integer ID. The time taken for an aircraft to go from a base to a target is the prime factor of the Manhattan Distance between the base and the target that is just greater than the ID of the source base (In case the ID is greater than or equal to the largest prime factor, then consider the ID itself). Similarly, the time taken for an aircraft to go from a target to the main base is the prime factor of the Manhattan Distance between the target and the main base that is just greater than the ID of the target (In case the ID is greater than or equal to the largest prime factor, then consider the ID itself).

Each Aircraft needs to leave the base, reach target and come back to the main base in a maximum time of T. One aircraft can go to only one target before going to the main base.

Find the maximum number of targets that can be reached in the enemy territory.

Input

The first line contains three space separated integers N, M and T respectively.

The next N lines contain 3 integers denoting x coordinate, y coordinate and the ID of the air bases.

The next M lines contain 3 integers denoting x coordinate, y coordinate and the ID of the targets.

The last line contains two integers denoting the baseX and baseY coordinate.

Output

Output a single integer which is the maximum number of targets that can be reached.

Constraints

$$1 \leq N, M \leq 400$$

$$0 \leq x, y, \text{baseX}, \text{baseY} \leq 5 \cdot 10^6$$

$$0 \leq \text{ID} \leq 5000$$

$0 \leq T \leq 10^7$

Sample Input

2 2 35

1 2 15

2 10 20

2 1 8

5 6 12

5 5

Sample Output

2