1. **Input**

The program prompts for the input file name. Then, it reads the file name from the standard input. The first line of the input file contains **a single integer** stating the **number of matrices (N)** in the given file. The second line of the input file contains **two integers** stating the number of **rows and columns** of all the matrices in the file. Next, the rest of the file contains the actual matrices. Between two matrices there will be an **empty line**. A sample input file can be as follows:

2

3 3

2 3 4

1 5 9

2 7 9

3 8 2

4 1 3

7 2 9

Assume that the file will only contain integers. Also assume the given file will contain **N** matrices all the time. However,  **the sizes of all the matrices** in the input file should be checked. In other words, check if the given row and column numbers match with the given matrices.

After reading the file, store all the matrices in a vector. Since the definition of a matrix is done by **vector<vector<int>>**, the vector containing all the matrices can be defined as **vector<vector<vector<int>>>.**

1. **Output**

The output of the program will be printed out to the screen. If a valid combination is found the corresponding message will be as follows:

*Matrix A can be written as the sum of matrices B C D*

Where A, B, C, D are the indexes of matrices. If there are no valid combinations in the given file, the corresponding error message will be as follows:

*There are no valid combinations in the given input file.*

* 1. **Sample Outputs**

Below you can find sample outputs for the program:

**input.txt**

5

3 3

1 2 3

4 5 6

7 8 9

9 8 7

6 5 4

3 2 1

2 1 2

1 2 1

2 1 2

10 10 10

10 10 10

10 10 10

5 1 9

2 8 3

4 2 9

**Case 1:**

*Please enter the input file name:* ***in.txt***

*Invalid file name. Please enter again:* ***input.txt***

*Enter k:* ***2***

*Matrix 3 can be written as the sum of matrices 0 1*

*Press any key to continue . . .*

**Case 2:**

*Please enter the input file name:* **input.txt**

*Enter k:* **3**

*There are no valid combinations in the given input file*

*Press any key to continue . . .*

**input2.txt**

3

4 4

1 2 3 4

3 2 1 3

2 3 1 5

3 2 1 3

1 1 1 1

2 2 2 2 2

3 3 3 3

4 4 4 4

9 2 3 2

2 2 4 2

7 2 3 4

2 3 2 4

**Case 3:**

*Please enter the input file name:* **what.txt**

*Invalid file name. Please enter again:* **input2.txt**

*Invalid file.*

*Press any key to continue . . .*