You are given a list of top N stocks and the %change in their value after an hour for each hour starting at 9,10,11,12,13,14.

The stock which has highest %change is called best performer. The stock which has lowest %change is called worst performer.

1. Built a MinPQ and MaxPQ to find out top 5 best performers and bottom 5 least performers for each hour starting at 9 to 14. (Note: You need to build 6 MinPQs and 6 MaxPQs && if two stocks have same performance then preference should be given based on name. higher string at string comparison will give high priority)
2. Built a binary search symbol table with key as stock name, and value as frequency of that stock as best performer at each hour.

Example: Suppose TCS appears 3 times in top 5 best performers out of 6 hours, the frequency of TCS will be 3.

1. Built a binary search symbol table with key as stock name, and value as frequency of that stock as worst performer at each hour.
2. Find frequency of a given stock as best performer. If stock hasn’t performed even once as one of the top 5, its frequency will be 0.
3. Find frequency of a given stock as worst performer. If stock hasn’t performed even once as one of the least 5, its frequency will be 0.
4. Find out stocks which appeared both in best and worst performers at least once.

**Input format:**

First line of the input contains an Integer (N) represents no. of stocks present in every hour

From second line to 6\*N lines contains stocks data for all the 6 hours

Next line of the input contains an Integer (M) represents no. of queries will be given

Next M lines represent queries data

**Stock data:**

Stock data will has two attributes(Name and Performance) separated with comma

**Query data:**

Queries data of two types

get

intersection

EX:

get,maxST,Sanofi India

get,minST,3M India

intersection

**methodName,symbolTable,stockName**

where get method should print frequency that stock occurs in given Symbol table

If stock doesn’t present in Symbol table then it should print 0

For intersection you need to print the common stock names present in both the Symbol tables

**Output format:**

For every hour print the maximum 5 stocks (stock Name and performance separated by space)

Print an empty line

For every hour print the minimum 5 stocks (stock Name and performance separated by space)

Print an empty line

For queries print the output as explained above in query data.