Problem F: Food Truck

Filename: *foodtruck*

Time limit: *2 seconds*

Brett, Kristen, and Will are on the hunt for the best food in Orlando. They've recently discovered a new area in the Milk District called A La Cart that features various food trucks specializing in different cuisines. Each food truck has its own menu and cooks the food fresh. Brett, Kristen, and Will are so excited to eat their food, so they need your help to determine when each of their orders will be ready.

The Problem

Given the number of grills a food truck has, their menu with the time it takes each item to cook, and a list of people and what they want to order, in the order that they place the orders, output the list of people with the time that their food will be ready sorted from earliest to latest (if there is a tie, sort names by alphabetical order). You can assume that each grill can cook one item at a time and as soon as the item is done cooking, another item can go on and that all orders are placed in sequence given at time 0.

The Input

The first line of input will contain a single positive integer, c ($c \leq 25$), representing the number of input cases to process. The input cases follow. The first line of each input case will have 3 space separated integers: g ($1 \leq g \leq 1000$), f ($1 \leq f \leq 1000$), and p ($1 \leq p \leq 1000$), representing the number of grills, the number of food items offered, and the number of people in line, respectively. The following f lines will contain the string n, representing the name of the food item, and an integer t ($1 \leq t \leq 1000$), representing how long food item n takes to cook (in seconds), separated by a space. The following p lines will contain the strings m and o, separated by a space, representing the name of the person in line and the food item they are going to order. All strings in the input will be alphabetic strings of in between 1 and 15 letters. The first letter of each string will be capitalized and the rest of the letters in each string will be lowercase. Each food item listed within a case will be unique and each food item ordered by a person in a case will match one of the previously listed food items with a cooking time in that case exactly.

The Output

For each case, output "Test Case #c:" on a line by itself, where c is the test case number starting at 1 followed by the list people. When listing the people, list one person per line. On each of these lines, put the person's name, followed by a space, followed by the time (in seconds) at which they receive their food, after the orders are placed. List the names in order that people received their food, listing those who received their food at the same time in alphabetic order by name.

Sample Input	Sample Output
3	Test Case #1:
2 3 3	Brett 5
Fries 5	Kristen 20
Hamburger 25	Will 25
Hotdog 15	Test Case #2:
Brett Fries	Brett 10
Will Hamburger	Kristen 30
Kristen Hotdog	Will 50
1 2 3	Test Case #3:
Meatballs 20	Phong 10
Sandwich 10	Seema 10
Brett Sandwich	Allison 20
Kristen Meatballs	
Will Meatballs	
2 1 3	
Gyro 10	
Seema Gyro	
Phong Gyro	
Allison Gyro	