# Problem 4. Train System

The **Bulgarian Dreadful Zug** Company (**BDZ**) just upgraded their ticket systems from something running on DOS 5 to a state-of-the-art system running a fancy web app. Of course, nobody bothered to migrate all the discount cards over to the new system, so all the passengers trying to buy a ticket with a discount nearly miss their train, since the cashier, grandma Penka, needs to enter it into the new system. Luckily, she heard about this great thing, called Python from her neighbor, grandma Gina, and how she can use it to automate this task.

In this problem, you assume the role of grandma Penka. You have a 15-minute lunch break, so you decide to use that time to write up a Python script to migrate all the data.

## Input / Constraints

* On the **first line**, you will receive the number of **existing cards** **N** – **integer** in **range [0-5]**
* On the next **N** lines, you will receive the **existing tickets** in the format “firstName lastName ticketNum”.
  + Existing tickets will **always** have a **valid card number**
* Then, until you receive the command “time to leave!”, keep reading lines in the format:
  + “createTicket firstName lastName destination cardNumber”

The **input data will always be in the format specified**. **There is no need to check it explicitly**.

When you receive all the **existing cards**, insert them into the system. Cards are tied to the person’s **full name** (**first name + space (“ “) + last name**). **A person** can have **multiple cards**.

After that, your lunch break is over and you need to start **issuing tickets** to people again. A standard “**issue ticket**” command looks like this:

* “createTicket firstName lastName destination cardNumber”

You need to check if this person **already** has a **card** with that number under that name. If they do, issue their ticket with the card number. If not, you need to check if the **card number** is valid. A **valid card number**’s **digit sum** is **divisible by 7** (example: **297296** 🡺 (**2+9+7+2+9+6**) **% 7 == 0** 🡺 **valid**). If the **card number** is **invalid**, print “card {cardNumber} is not valid!” and issue the ticket **without a discount**.

If the card number is **valid**, but it **already belongs** **to another passenger**, print “card 297296 already exists for another passenger!” and issue the ticket **without a discount**.

If the card **doesn’t already belong** to **another passenger** and is **not already** in the **existing cards**, you need to **issue** that passenger a card. **Insert** it into the **cards** and print (“issuing card {cardNumber}”). After that, issue them a ticket **with a discount**.

The **price** of the **ticket** is the **sum of the ASCII codes** of the **destination name**, **divided** by **100**

* Example: **vidin** 🡺 **v+i+d+i+n** 🡺 **538 / 100** 🡺 **5.38**

Every ticket bought with a **valid card** that **belongs to the passenger** is **50% cheaper**.

## Output

When you receive “time to leave!”, print all passengers in the following format:

|  |
| --- |
| **fullName:**  **--{destination}: {ticketPrice:.2f}**  **--{destination}: {ticketPrice:.2f} (using card {cardNumber})**  **...**  **total: {ticketPrice:.2f}BGN** |

Sort the **passengers** by the **sum of their ticket prices** (**descending**). Sort **each passenger’s** **tickets** by the **ticket’s price** (**descending**). If a ticket was **bought** **without a discount**, **don’t print** “using card…” after it.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  pesho ivanov 297296  ivan tsekov 652530  gosho goshov 547989  ivan tsekov 468845  createTicket pesho ivanov vidin 297296  createTicket ivan petrov ruska\_bela 590432  createTicket ivan petrov sofia 590430  createTicket pesho ivanov boychinovtsi 590554  createTicket bay ivan montana 912839  time to leave! | card 590432 is not valid!  issuing card 590430  issuing card 590554  card 912839 is not valid!  ivan petrov:  --ruska\_bela: 10.49lv  --sofia: 2.65lv (using card 590430)  total: 13.14lv  pesho ivanov:  --boychinovtsi: 6.57lv (using card 590554)  --vidin: 2.69lv (using card 297296)  total: 9.26lv  bay ivan:  --montana: 7.50lv  total: 7.50lv |
| **Input** | **Output** |
| 1  georgi georgiev 586790  createTicket pesho petrov vidin 297296  createTicket pesho petrov montana 630534  createTicket pesho petrov plovdiv 630534  createTicket bay ivan vidin 297296  createTicket bay ivan sofia 111111  createTicket bay ivan montana 111111  createTicket bay ivan mezdra 111111  time to leave! | issuing card 297296  issuing card 630534  card 297296 already exists for another passenger!  card 111111 is not valid!  card 111111 is not valid!  card 111111 is not valid!  bay ivan:  --montana: 7.50lv  --mezdra: 6.43lv  --vidin: 5.38lv  --sofia: 5.30lv  total: 24.61lv  pesho petrov:  --plovdiv: 3.86lv (using card 630534)  --montana: 3.75lv (using card 630534)  --vidin: 2.69lv (using card 297296)  total: 10.30lv |
| **Input** | **Output** |
| 3  ivan ivanov 094859  ceko cekov 328994  krali marko 774154  createTicket ivan ivanov montana 094859  createTicket ivan ivanov vidin 094859  createTicket ivan ivanov plovdiv 094859  createTicket krali marko vidin 774154  createTicket krali marko sofia 774154  createTicket bay ivan mezdra 000006  createTicket ceko cekov montana 328994  time to leave! | card 000006 is not valid!  ivan ivanov:  --plovdiv: 3.86lv (using card 094859)  --montana: 3.75lv (using card 094859)  --vidin: 2.69lv (using card 094859)  total: 10.30lv  bay ivan:  --mezdra: 6.43lv  total: 6.43lv  krali marko:  --vidin: 2.69lv (using card 774154)  --sofia: 2.65lv (using card 774154)  total: 5.34lv  ceko cekov:  --montana: 3.75lv (using card 328994)  total: 3.75lv |