# Programming Fundamentals Final Exam Retake 10.04.2020

## Problem 3. Need for Speed III

*You have just bought the latest and greatest computer game – Need for Seed III. We know that you can`t wait to start playing. Pick your favorite cars and drive them all you want!*

On the first line of the standard input you will receive an integer **n** – the **number of cars** that you can obtain. On the next **n** lines the **cars themselves** will follow with their **mileage** and **fuel** **available**, separated by "|" in the following format:

{car}|{mileage}|{fuel}

Then, you will be receiving different **commands**, each on a new line, separated by " : ", until the "Stop" command is given:

* Drive : {car} : {distance} : {fuel}
  + You need to **drive the given distance** and you will **need the given** fuel to do that. If the car **doesn`t have enough fuel** print:  
    "**Not enough fuel to make that ride**"
  + If the car has the required fuel available in the tank, **increase its mileage** with **the given distance**, **decrease its fuel with the given fuel** and **print**:   
    "{car} driven for {distance} kilometers. {fuel} liters of fuel consumed."
  + You like driving new cars only, so if the mileage of a car reaches **100 000** km, remove it from the collection(s). Print:  
    "**Time to sell the {car}!**"
* Refuel : {car} : {fuel}
  + Refill the tank of your car.
  + Each tank can hold a **maximum of 75 liters of fuel**, so if the given amount of fuel is more than you can fit in the tank, take only what is required to fill it up.
  + Print a message in the following format:  
    "{car} refueled with {fuel} liters"
* Revert : {car} : {kilometers}
  + Decrease the **mileage** of the given **car with the given kilometers** and print the kilometers you have decreased it with in the following format:  
    "{car} mileage decreased by {amount reverted} kilometers"
  + If the mileage becomes **less** **than** **10 000km** **after** it is decreased, **just set it to 10 000km** and   
    **DO NOT print anything.**

Upon receiving the "Stop" command you need to print all cars in your possession, sorted by their **mileage in decscending order**, then by their **name in ascending order**, in the following format:  
"**{car} -> Mileage: {mileage} kms, Fuel in the tank: {fuel} lt.**"

### Input/Constraints

* The **mileage** and **fuel** of the cars will be valid, 32-bit integers and will never be negative.
* The **fuel** and **distance** amounts **in the commands will never be negative**.
* The **car** **names** in the **commands** will always be **valid cars in your possession**.

### Output

* All the output messages with the appropriate formats are described in the problem description.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  Audi A6|38000|62  Mercedes CLS|11000|35  Volkswagen Passat CC|45678|5  Drive : Audi A6 : 543 : 47  Drive : Mercedes CLS : 94 : 11  Drive : Volkswagen Passat CC : 69 : 8  Refuel : Audi A6 : 50  Revert : Mercedes CLS : 500  Revert : Audi A6 : 30000  Stop | Audi A6 driven for 543 kilometers. 47 liters of fuel consumed.  Mercedes CLS driven for 94 kilometers. 11 liters of fuel consumed.  Not enough fuel to make that ride  Audi A6 refueled with 50 liters  Mercedes CLS mileage decreased by 500 kilometers  Volkswagen Passat CC -> Mileage: 45678 kms, Fuel in the tank: 5 lt.  Mercedes CLS -> Mileage: 10594 kms, Fuel in the tank: 24 lt.  Audi A6 -> Mileage: 10000 kms, Fuel in the tank: 65 lt. |
| **Comments** | |
| After we receive the cars with their mileage and fuel, we start driving them. When we get to "**Drive : Volkswagen Passat CC : 69 : 8**" command, our program calculates that there is not enough fuel and we print the appropriate message. Then we refuel the Audi A6 with 50 l of fuel and Revert the Mercedes with 500 kilometers.  When we receive the "Revert : Audi A6 : 30000", we set its mileage to **10000** km, because if the current mileage of the Audi is **38543** kms and if we subtract **30000** from it, we receive **8543** kms, which is less than 10000 kms.  After all the commands, we print our current collection of cars with their current mileage and current fuel. | |
| **Input** | **Output** |
| 4  Lamborghini Veneno|11111|74  Bugatti Veyron|12345|67  Koenigsegg CCXR|67890|12  Aston Martin Valkryie|99900|50  Drive : Koenigsegg CCXR : 382 : 82  Drive : Aston Martin Valkryie : 99 : 23  Drive : Aston Martin Valkryie : 2 : 1  Refuel : Lamborghini Veneno : 40  Revert : Bugatti Veyron : 2000  Stop | Not enough fuel to make that ride  Aston Martin Valkryie driven for 99 kilometers. 23 liters of fuel consumed.  Aston Martin Valkryie driven for 2 kilometers. 1 liters of fuel consumed.  Time to sell the Aston Martin Valkryie!  Lamborghini Veneno refueled with 1 liters  Bugatti Veyron mileage decreased by 2000 kilometers  Koenigsegg CCXR -> Mileage: 67890 kms, Fuel in the tank: 12 lt.  Lamborghini Veneno -> Mileage: 11111 kms, Fuel in the tank: 75 lt.  Bugatti Veyron -> Mileage: 10345 kms, Fuel in the tank: 67 lt. |

|  |  |
| --- | --- |
| **JavaScript Input** | **Output** |
| [  '3',  'Audi A6|38000|62',  'Mercedes CLS|11000|35',  'Volkswagen Passat CC|45678|5',  'Drive : Audi A6 : 543 : 47',  'Drive : Mercedes CLS : 94 : 11',  'Drive : Volkswagen Passat CC : 69 : 8',  'Refuel : Audi A6 : 50',  'Revert : Mercedes CLS : 500',  'Revert : Audi A6 : 30000',  'Stop'  ] | Audi A6 driven for 543 kilometers. 47 liters of fuel consumed.  Mercedes CLS driven for 94 kilometers. 11 liters of fuel consumed.  Not enough fuel to make that ride  Audi A6 refueled with 50 liters  Mercedes CLS mileage decreased by 500 kilometers  Volkswagen Passat CC -> Mileage: 45678 kms, Fuel in the tank: 5 lt.  Mercedes CLS -> Mileage: 10594 kms, Fuel in the tank: 24 lt.  Audi A6 -> Mileage: 10000 kms, Fuel in the tank: 65 lt. |
| **Comments** | |
| After we receive the cars with their mileage and fuel, we start driving them. When we get to "**Drive : Volkswagen Passat CC : 69 : 8**" command, our program calculates that there is not enough fuel and we print the appropriate message. Then we refuel the Audi A6 with 50 l of fuel and Revert the Mercedes with 500 kilometers.  When we receive the "Revert : Audi A6 : 30000", we set its mileage to **10000** km, because if the current mileage of the Audi is **38543** kms and if we subtract **30000** from it, we receive **8543** kms, which is less than 10000 kms.  After all the commands, we print our current collection of cars with their current mileage and current fuel. | |
| **JavaScript Input** | **Output** |
| [  '4',  'Lamborghini Veneno|11111|74',  'Bugatti Veyron|12345|67',  'Koenigsegg CCXR|67890|12',  'Aston Martin Valkryie|99900|50',  'Drive : Koenigsegg CCXR : 382 : 82',  'Drive : Aston Martin Valkryie : 99 : 23',  'Drive : Aston Martin Valkryie : 2 : 1',  'Refuel : Lamborghini Veneno : 40',  'Revert : Bugatti Veyron : 2000',  'Stop'  ] | Not enough fuel to make that ride  Aston Martin Valkryie driven for 99 kilometers. 23 liters of fuel consumed.  Aston Martin Valkryie driven for 2 kilometers. 1 liters of fuel consumed.  Time to sell the Aston Martin Valkryie!  Lamborghini Veneno refueled with 1 liters  Bugatti Veyron mileage decreased by 2000 kilometers  Koenigsegg CCXR -> Mileage: 67890 kms, Fuel in the tank: 12 lt.  Lamborghini Veneno -> Mileage: 11111 kms, Fuel in the tank: 75 lt.  Bugatti Veyron -> Mileage: 10345 kms, Fuel in the tank: 67 lt. |