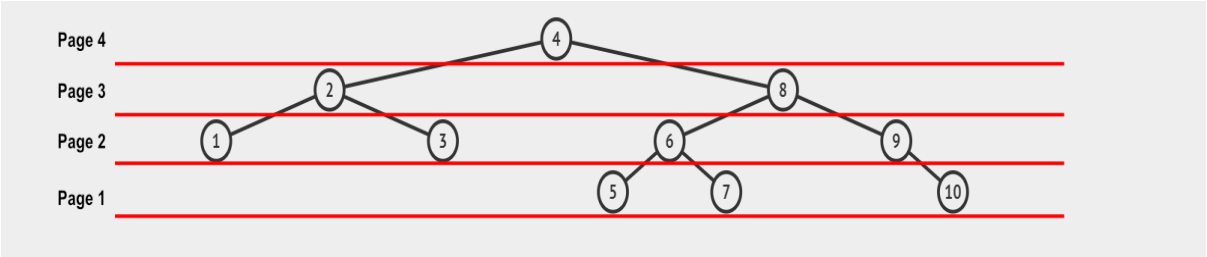
Alfamalet

Time Limit: 1 s
Memory Limit: 256 MB

Description

Lately, the industry has begun to change from offline business to online business. This makes many companies lose the competition because their business systems do not keep up with the times. Therefore, many companies have started to change their business systems by adding the option of selling their products online, including minimarkets. One of them is Alfamalet. Alfamalet is a minimarket company that continues to grow, opening outlets in various regions in Indonesia. This company will reportedly recruit you to become an E-commerce website developer that will make it easier for customers to buy goods online. However, due to cost and time constraints, you are only required to develop simple command-based applications using the AVL Tree as a data structure to store product data. Later, each product will be given an **ID** to make it easier for you to find it because the ID will be used to enter data into the AVL Tree. In addition to **ID**, each product will be given information related to the **NAME** & **PRICE** of the product. For each product, it will be placed on a specific page according to the level of the product in the AVL Tree. So you have to enter all products into AVL the first time. After that, your program will be given a command to search for product details based on **ID**. If not, the program will issue **"404 NOT FOUND"**. But if there is, the program will issue information regarding which page your product is on, then print details regarding your product. For example, if you enter products with ID: 1, 2, 3, 4, 5, 6, 7, 8, 9, & 10. The tree will look like the image below.



Input

- The first line is `ID PRICE NAME` that will be separated by Spaces (‘ ‘) and represents the detail of the product that will be inserted to the AVL. the next line will be the same and so on until the command becomes `0 0 0`
- The next lines are **ID** which represents the ID of product searched. This will be repeated until the **ID** is `0` to stop the program and start printing the output.

Output

- For each **ID** searched, if the product doesn't exist, print `404 NOT FOUND`. But if exist, print:
    - First line, print `Item Found at page` **`PRODUCT_PAGE`**. **PRODUCT_PAGE** represents the page that the product is located at.
    - Next line, print the item Detail `Item detail: id=`**`ID`**`, name=`**`NAME`**`, price=`**`PRICE`**. Where each will represents the value of ID, NAME, & PRICE of the product

Constraints

- **ID** > *0*
- **NAME** *length* < 20 && Doesn't contain *SPACES*
- **PRICE** ∈ *Integer*

EXAMPLE

Input
1 1000 Rejoice 2 2000 Pantene 3 3000 Dove 4 4000 Head&Shoulder 5 5000 Sunsilk 6 6000 LOreal 7 7000 Garnier 8 8000 Ponds 9 9000 Garnier 10 10000 Dettol 0 0 0 11 3 2 4 10 0
Output
404 NOT FOUND Item Found at page 2 Item detail: id=3, name=Dove, price=3000 Item Found at page 3 Item detail: id=2, name=Pantene, price=2000 Item Found at page 4 Item detail: id=4, name=Head&Shoulder, price=4000

```
Item Found at page 1
Item detail: id=10, name=Dettol, price=10000
```