# Cooking journey



*You successfully started your cooking journey, so now you need to sell the products from your basket in the pastry shop* *to collect your price.*

You will be given an integer **n** for the **size** of the pastry shop with a **square** shape. On the next **n** lines, you will receive the **rows** of the pastry shop. You will be placed in a **random position**, marked with the letter '**S**'. On random positions, there will be clients, marked with a **single digit**. There **may** also be **pillars**. Their **count** will be either **0** or **2** and they are **marked** with the **letter** - '**P**'. **All of the empty positions** will be marked with **'-'**.

Each turn, you will be given **commands** for **your movement**. Move commands will be: "**up**", "**down**", "**left**", "**right**". If you **move** to a **client**, you **collect** **the price** **equal** to the **digit** **there** and the client **disappears**. If you move to a **pillar**, you move on to the **position** of the **other pillar** and then **both** pillars **disappear**. If you **go** **out** of the pastry shop, you **disappear** from the pastry shop and you are out of there. You need **at least** **50 dollars** to rent your Pastry shop.

When **you are out of the pastry shop** **or you collect enough money,** the program **ends**.

### Input

* On the first line, you are given the integer **n** – the size of the **square** matrix.
* The **next n lines** hold the values for every **row**.
* On each of the next lines, you will get a move command.

### Output

* On the first line:
  + If the player goes to the void, print: "**Bad news! You are out of the pastry shop.**"
  + If the player collects enough star power, print: "**Good news! You succeeded in collecting enough money!**"
* On the second line print, all-star power collected: "**Money: {money}**"
* At the end print the matrix.

### Constraints

* The size of the **square** matrix will be between **[2…10].**
* There will **always** be **0** or **2** pillars, marked with the **letter** - '**P**'.
* Your position will be marked with '**S**'.
* You will **always** go out of the pastry shop or collect enough money.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 5  SP---  -----  -----  -----  ----P  right  right | Bad news, you are out of the pastry shop.  Money: 0  -----  -----  -----  -----  ----- | The first command is right. You move to **one of the pillars** and then **appear** on the other side of it (4,4).  The pastry shop looks like this after the first command:  -----  -----  -----  -----  ----S  The second command is right. You go to the pastry shop. |
| 6  S98---  99----  666666  ------  --77--  -6-6-6  right  right  down  left  left  down  right  right | Good news! You succeeded in collecting enough money!  Money: 53  ------  ------  --S666  ------  --77--  -6-6-6 | Here we have **no** pillars and a pastry shop rich in clients.  You manage to collect **enough** money **without** **going out** of the pastry shop.  The clients you have sealed food to have disappeared and we can see where you were when you collected the last needed money (2,2). |