# 02. Fishing Competition



*You are a longtime captain of an old fishing vessel. The new fishing season begins and you prepare your ship to set sail in search of the big catch…*

You will be given an integer **n** for the **size** of the **fishing area** with a **square** shape. On the next **n** lines, you will receive the **rows** of the **fishing area**. You will be placed in a **random position**, marked with the letter '**S**'. There will be fishing passages on **random positions**, marked with a **single digit**. There will be whirlpools **marked** with '**W**'. All of the empty **positions** will be marked with **'-'**.

Each turn until the "**collect the nets**" command is received you will be given **commands** for **your movement**. Move commands will be: "**up**", "**down**", "**left**", and "**right**".

* If you **move** to a **fish passage**, you **collect** **the amount** **equal** to the **digit** **there**, the **passage disappears** and should be replaced by **'-'**.
* If you fall into a whirlpool – the ship sinks and loses its catch, the program ends.
* If you leave the fishing area (go out of the boundaries of the matrix) depending on the move command you will be moved to the opposite side of the one you were on.

/**Example:** In a 3x3 matrix you are at position **[1,2]** and receive the command "**right**" you will be moved to position **[1,0]**./

You need **at least** **20 tons** of fish to be considered a successful season. Keep in mind that even if the **quota is reached** the **ship continues to move**.

### 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 ship **falls into a whirlpool**, print only this message and stop the program:
* **"You fell into a whirlpool! The ship sank and you lost the fish you caught. Last coordinates of the ship: [n,n]"**
* If the **ship reaches** the quota:
* **"Success! You managed to reach the quota!"**
* If the **ship did not reach** the quota:
* **"You didn't catch enough fish and didn't reach the quota!**

**You need {lack of fish} tons of fish more."**

* On the **next** lines.
* If the catch quantity is bigger than zero, print:
* **"Amount of fish caught: {quantity} tons."**

else: **do not print** anything.

* If you **didn't get into a whirlpool**, print the **matrix**.

### Constraints

* The size of the **square** matrix will be between **[2…10].**
* Only the letters '**S**' and '**W**' will be present in the matrix.
* The **fish passages** are represented by **single positive digits** /tons/ between **[1…9]**.
* It is expected that there will only be either **zero** or **one** **whirpool** present, marked with the **letter** - '**W**'.
* Your position will be marked with '**S**'.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  ---S  ----  9-5-  34--  down  down  right  down  collect the nets | You didn't catch enough fish and didn't reach the quota! You need 8 tons of fish more.  Amount of fish caught: 12 tons.  ----  ----  --5-  S4-- |
| **Comment** | |
| The first command is **"down"**. The ship moves to position **[1,3]** followed by the command **"down" [2,3]** andthen the command **"right".** The ship leaves the matrix's boundaries and transfers to the opposite side at position **[2,0]**. The ship comes across a **fish passage** with a quantity of 9 tons and gets it. After executing the third command, the **fishing area** will appear as follows:  ----  ----  S-5-  34--  Then you receive the command **"down"** again.You move to the passage of **3** tons and add them to the others **9**. Your catch is **9 + 3 = 12** tons. In the end, you get the command **"collect the nets"** and the program ends. | |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  S---9  777-1  W333-  11111  -----  down  down  right  down  collect the nets | You fell into a whirlpool! The ship sank and you lost the fish you caught. Last coordinates of the ship: [2,0] |
| **Comment** | |
| The first command is **"down"**. The ship moves to position **[1,0]** and gets **7** tons of fish. Follow the command **"down"** -> **[2,0]** The ship **falls into a whirlpool and sinks.** You lose the entire catch and the program ends. | |
| **Input** | **Output** |
| 5  S---9  777-1  --5--  11W11  988--  down  down  down  down  down  down  right  right  right  collect the nets | Success! You managed to reach the quota!  Amount of fish caught: 31 tons.  ----9  ---S1  --5--  -1W11  -88-- |
| **Comment** | |
| Result is: **7 + 1 + 9 +7 + 7 = 31**. You succeeded! | |