**02. North Pole Challenge**

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*You are visiting Santa Claus' workshop, and it is complete chaos. You will need to help Santa find all items scattered around the workshop.*

You will be given the size of the matrix in the format **"{rows}, {columns}"**. It is the **Santa's workshop** represented as some **symbols** separated by a **single space**:

* **Your position is** marked with the symbol "**Y**"
* **Christmas decorations are** marked withthesymbol "**D**"
* **Gifts** are marked withthesymbol "**G**"
* **Cookies** are marked with the symbol"**C**"
* **All of the empty positions** will be marked with "**.**"

After the field state, you will be given **commands** until you receive the command **"End"**. The commands will be in the format **"right/left/up/down-{steps}"**. You should **move** in the given **direction** with the given **steps and collect all the items that come across**. If you go out of the field, you should **continue to traverse the field** from the **opposite side** in the **same direction**. You should mark your path with **"x"**. Your current position should always be marked with **"Y"**.

**Keep track of all collected items.** If you've collected all items at any point, **end** **the program** and **print**: **"Merry Christmas!"**.

### Input

* On the first line, you will receive the number of rows and columns in the format **"{rows}, {columns}"**
* On the next **lines**, you will receive **each row with its columns - symbols**, separated by a single space.
* On the following **lines**, you will receive **commands** in the format described above until you receive the command **"End"** or until you **collect all items**.

### Output

* On the **first line,** **if you have** collected all items, print:
  + **"Merry Christmas!"**
  + **Otherwise, skip the line**
* Next, print the **number** **of collected items** in the format:
  + **"You've collected:**
  + **- {number\_of\_decoration} Christmas decorations**
  + **- {number\_of\_gifts} Gifts**
  + **- {number\_of\_cookies} Cookies"**
* Finally, print the **field,** as shown in the examples.

### Constrains

* All the **commands** will be **valid**
* There will **always be at least one item**
* The **dimensions** of the matrix will be integers in the range [1, 20]
* The field will always have **only one** **"Y"**
* **On the field, there will always be only the symbols shown above.**

### Examples

|  |  |
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| **Input** | **Output** |
| 6, 5  . . . . .  C . . G .  . C . . .  G . . C .  . D . . D  Y . . . G  left-3  up-1  left-2  right-7  up-1  End | You've collected:  - 2 Christmas decorations  - 1 Gifts  - 0 Cookies  . . . . .  C . . G .  . C . . .  G . Y C .  x x x x x  x . x x x |
| 5, 6  . . . . . .  . . . . . .  Y C D D . .  . . . C . .  . . . C . .  right-3  down-3 | Merry Christmas!  You've collected:  - 2 Christmas decorations  - 0 Gifts  - 3 Cookies  . . . . . .  . . . . . .  x x x x . .  . . . x . .  . . . Y . . |
| 5, 2  . .  . .  . Y  . .  . G  up-1  left-11  down-10  End | You've collected:  - 0 Christmas decorations  - 0 Gifts  - 0 Cookies  x .  Y x  x x  x .  x G |