# 02. Sticky Fingers



*John Dillinger is one of the most famous thieves. He leads a group known as the "Dillinger Gang", which was accused of robbing 24 banks and four police stations. Now he is planning his last theft and needs your help.*

We get as input **the size** of the **field** in which Dillinger moves. The field is **always a square**. After that, we receive the commands which represent the directions in which Dillinger should move. Dillinger **starts** from **D**-position. The commands will be **left/right/up/down.** If Dillinger reaches the side edge of the field (left, right, up, or down), he **remains in his current position** and you have to **print on the console** **"You cannot leave the town, there is police outside!"**. When he successfully moves, **replace his last position symbol** with the regular position symbol **"+"**. The possible characters that may appear on the screen are:

* **+** - regular position on the field.
* **$** - house
* **D** - Dillinger position
* **P** – police

Each time when Dillinger finds a house, he robs it. When Dillinger robs a house **replace "$" with "+"**, calculate how much he has stolen by **multiplying row and column indexes** of the found symbol **"$", add** the money to his pocket, and then print **"You successfully stole {calculated money}$.".**

When he steps on **"P"**, he gets caught, print on the console **"You got caught with {total stolen money}$, and you are going to jail."**, and then the program ends. You have to replace stepped **"P"** with **"#"**, the matrix must not contain **"D"**.

If his movement commands, get finished print on the console **"Your last theft has finished successfully with {total stolen money}$ in your pocket."**. The program ends when his movement commands get finished or when he gets caught by the police.

## Input

* **Field size** – an integer number.
* **Commands to move** the sapper – an array of strings separated by **","**.
* **The field: some of the following characters (+, $, D, P),** separated by whitespace (" ");

### Output

* If the program finishes without Dillinger getting caught:
  + **"Your last theft has finished successfully with {total stolen money}$ in your pocket."**
* If Dillinger gets caught:
  + **"You got caught with {total stolen money}$, and you are going to jail."**
* In the end, print the matrix, and separate each symbol by **" ".**

### Constraints

* The size of the matrix will be between **[2…40].**
* The players will always be indicated with **"D".**
* Commands will be in the format of **up**, **down**, **left** or **right**.

## Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 5  up,right,down,down,left  + + + D +  + + + P +  + + + $ +  P + + P +  + + $ + + | You cannot leave the town, there is police outside!  You successfully stole 6$.  Your last theft has finished successfully with 6$ in your pocket.  + + + + +  + + + P +  + + + D +  P + + P +  + + $ + + | Trying to get outside the field prints a message. After successfully stealing 6$,  because he is on 3 column index and 2 row index. Example: 3\*2=6  The program ends without getting caught. |
| 4  right,down,down,left  + + D $  + + P $  + P $ +  + + + + | You successfully stole 0$.  You successfully stole 3$.  You successfully stole 4$.  Your last theft has finished successfully with 7$ in your pocket.  + + + +  + + P +  + P D +  + + + + | Stealing 0$ because row index is 0. After that stealing 3$ and 4$, so he finishes with 7$. The program ends without getting caught. |