

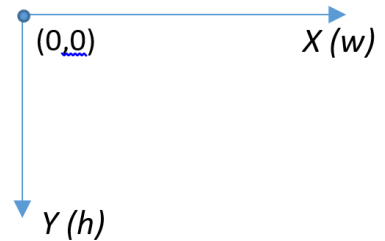
Tank Game

There are stubborn battles on square map of $N \times M$ squares ($N \leq 200, M \leq 200$) with obstacles. Tanks are trying to survive and kill as many as possible rivals. Each player owns one tank and his task consists in programming his tank to lead to the victory and to pass the laboratory work.

Description of input/output data:

At the beginning of the game, your program gets world description. In first line there are 2 numbers: N and M – height and width respectively.

In next N lines there are M numbers (numbers separated by spaces). 1 – if appropriate cell is a wall, and 0 otherwise.



Players move at one time.

During a game, before each move, your program gets the info about situation on the map as a list of objects on the map and their attributes for this pattern:

N – number of objects;

Then comes the list of elements of the form: **T X Y D**, where:

T – type (0 – own tank, 1 – rival's tank, 2 – bullet);

X, Y – coordinates (the number of row and column respectively);

D – direction (0 – down, 1 – left, 2 – up, 3 – right).

After data transferring, your program have to output one number: 0, 1, 2, 3, 4, 5, which is one of the your tank commands:

- | | | |
|-----|----------------------------------------|--|
| 8 — | turn tank up; | |
| 6 — | turn tank right; | |
| 2 — | turn tank down; | |
| 4 — | turn tank left; | |
| 0 — | move straight (where tank is looking); | |
| 5 — | make a shoot in tank's direction; | |

The bullet appears in that cell, where the tank is. Bullet overcomes 3 cells per one move, while tank only one. It destroys everything in the cell where it is, except walls and owner's tank. When the bullet destroys something or contacts with the wall – it collapses.

Notes:

- Tank destroys with a first hit (destroying rival's tank is +10 points);
- Bullet's flight lasts infinitely long, until it does not hit obstacle or tank;

- It is safe when tank hits with wall/obstacle or other tank (the command is ignored);
- Each step when tank keeps leaving gives +1 point (if tank does shoot, then points are not counting);
- When one tank is left on the map or limit of steps (integer of $\sqrt{w * h} * 10$) is passed, then it is the end of the game;
- If tank is left on the map (survived), then it gets +20 points.

N.B.: Do output with “new line” command (`<<endl>` in C/C++ and `Console.WriteLine()` in C#)