**Auto Driving Car Simulation System**

**Testing Cases**

Note: The following testing cases are based on a 10X10 simulation field.

1. In a single-car scenario, the car can run simulation normally, without trying to move beyond the boundary.

Input data

Your current list of cars are:

- A, (1,9) E, RFFRFFFRLF

Output Result

After simulation, the result is:

- A, (0,7) W

1. In a single-car scenario, the car tried to move out of the field several times, but the system will just ignore the move-out actions.

Input data

Your current list of cars are:

- A, (1,9) N, FFLFFFFFFL

Output Result

After simulation, the result is:

- A, (0,9) S

1. In a multi-car scenario, all 5 cars can run simulation smoothly, without any collision.

Input data

Your current list of cars are:

- A, (9,5) S, FFRFLFFFFL

- B, (7,1) N, FLFLFRLLFL

- C, (4,8) N, RRFFFLLFRL

- D, (2,5) N, LRFLFLRRLF

- E, (3,2) E, RFFLRFLRFL

Output Result

After simulation, the result is:

- A, (8,0) E

- B, (7,1) N

- C, (4,6) N

- D, (0,6) W

- E, (3,0) E

1. In a multi-car scenario, 2 cars are collided, all other 3 cars can run smoothly.

Input data

Your current list of cars are:

- A, (9,5) S, FFRFLFFFFL

- B, (7,1) N, FLFLFRLLFL

- C, (2,8) N, RRFFFLLFRL

- D, (2,5) N, LRFLFLRRLF

- E, (3,2) E, RFFLRFLRFL

Output Result

After simulation, the result is:

- A, (8,0) E

- B, (7,1) N

- C, collides with D at (2,6) at step 4

- D, collides with C at (2,6) at step 3

- E, (3,0) E

1. In a multi-car scenario, 2 cars are collided, all other 3 cars are also collided, but at a different point.

Input data

Your current list of cars are:

- A, (9,5) S, FFFLLLFFFF

- B, (7,1) N, LLLLRRRRFF

- C, (2,8) N, RRFFFLLFRL

- D, (2,5) N, LRFLFLRRLF

- E, (3,2) E, RRRRFFFFLR

Output Result

After simulation, the result is:

- A, collides with E,B at (7,2) at step 8

- B, collides with E,A at (7,2) at step 9

- C, collides with D at (2,6) at step 4

- D, collides with C at (2,6) at step 3

- E, collides with A,B at (7,2) at step 8

1. In a multi-car scenario, all 5 cars are collided at the same point.

Input data

Your current list of cars are:

- A, (3,5) S, RRFLFLLLRR

- B, (3,1) N, FFFFFLFLRL

- C, (2,8) N, RRFFFLLFRL

- D, (2,5) N, LRFLFLRRLF

- E, (0,2) E, LFFFFRFFRL

Output Result

After simulation, the result is:

- A, collides with C,D,B,E at (2,6) at step 5

- B, collides with C,D,A,E at (2,6) at step 7

- C, collides with D,A,B,E at (2,6) at step 4

- D, collides with C,A,B,E at (2,6) at step 3

- E, collides with C,D,A,B at (2,6) at step 8

1. In a multi-car scenario, a car collides into another car, even before it starts to move.

Input data

Your current list of cars are:

- A, (3,5) S, FFFFLRLLRF

- B, (3,1) N, LRRLRRRFFL

- C, (2,8) N, RRFFFLLFRL

- D, (2,5) N, LRFLFLRRLF

- E, (0,2) E, LFFFFFFFRF

Output Result

After simulation, the result is:

- A, collides with B at (3,1) at step 4

- B, collides with A at (3,1) at step 3

- C, collides with D at (2,6) at step 4

- D, collides with C at (2,6) at step 3

- E, (1,9) E

Note: The following testing case(s) are based on a 20X20 simulation field.

1. Test the running of multi-car scenario in a larger simulation field. (20X20)

Input data

Your current list of cars are:

- A, (4,5) E, RRFFFFRFLL

- B, (4,13) E, FLFLFFLRLL

- C, (3,7) W, RLFFFFFRFL

- D, (5,8) S, FLFLRRLLFR

- E, (3,11) N, RFRRLRFFFF

Output Result

After simulation, the result is:

- A, (0,6) S

- B, (3,14) E

- C, (0,8) W

- D, (6,8) E

- E, (0,11) W