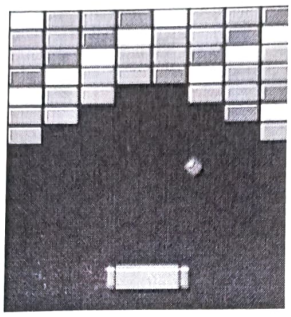
Ball Brick

Ball brick is a game where there will be a ball at the ground level and with that ball you have to destroy all the bricks above it. For each hit the bricks will come closer to ground level. When the ball touches the ground then you lose GAME OVER..!! If you destroy all the bricks before the bricks touches the ground then you win HURRAY..!!

Just for your understanding of the game have a look at the picture below. Note: The picture has nothing to do with the questions, it is purely for your understanding.



Instructions :

Consider the game in a NxN Matrix.The first ball starts from the middle of the bottom most row of the matrix.The ball can traverse in three directions. **Straight(ST), Left Diagonal(LD) and Right Diagonal(RD)**. The user has to enter the direction in which the ball has to traverse. After getting the input from the user the ball will traverse in that direction and hit the brick/wall on its way. The bricks can be arranged in any manner and the bricks strength will be denoted by a number.

Note:

- When the ball hits either the left or the right wall then the ball will traverse horizontally either in right or left direction respectively. If it hits any bricks then the ball traverse down straight to the ground level.
- If the ball hits both wall continuously without hitting any brick then the ball is lost and the ball has to return to its inital position (Center of the bottom most row) and the ball count is decremented..
- And also the ball count is decremented if it doesn't return to the same position it started.
- If all the bricks are broken before the ball count is reduced to 0 then you are the winner or else game over.
- When the ball hits the top wall, the ball travels straight to the ground unless if there are no bricks while the ball is traversing down.

Terminologies:

G - Ground Level.
W - Wall.
o - Ball.

Question 1:

Display the game matrix as below

Sample Input and Output:

Enter size of the NxN matrix : 7

Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball Count : 3

Sample Output:

```
W W W W W W W
W             W
W   1 1 1     W
W   1 1 1     W
W             W
W             W
W G G o G G W
```

Ball count is 3.

Question 2:

Sample Input and Output:

Enter size of the NxN matrix : 7

Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball Count : 3

Sample Output:

```
W W W W W W W
W             W
W   1 1 1     W
W   1 1 1     W
W             W
W             W
W G G o G G W
```

Ball count is 3.

Next Input:

Enter the direction in which the ball need to traverse : ST

Next Output:

```
W W W W W W W
W             W
W   1 1 1     W
W   1   1     W
W             W
W             W
W G G o G G W
```

Ball count is 3.

Next Input:

Enter the direction in which the ball need to traverse : LD

Next Output:

W W W W W W W

W W
W 1 1 1 W
W 1 W
W W
W W
W G o G G G W
Ball count is 2.

Question 3:

In this level, new bricks called numerical bricks are introduced. If a brick is denoted by 1, then it breaks when the ball hits it once, if it is denoted by 2, then the ball has to hit it twice to break it and so on.

Sample Input:

Enter size of the NxN matrix : 7

Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 3
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 2
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball Count : 3

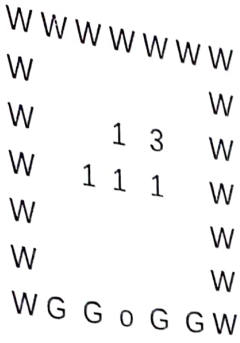
Sample Output:

W W W W W W W
W W
W 1 3 W
W 1 2 1 W
W W
W W
W G G o G G W
Ball count is 3

Next Input:

Enter the direction in which the ball need to traverse : ST

Next Output:



Ball count is 3.

Question 4:

In this level, you will be given demolishing bricks. There are 2 types of demolishing bricks:

- This brick is denoted by DE and if this brick is broken then it destroys all the bricks in the entire row.
- This brick is denoted by DS and if this brick is broken it destroys all the surrounding bricks.

Sample Input and Output:

Enter size of the NxN matrix : 7

Enter the brick's position and the brick type : 1 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 1 3 DE
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 1 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 DS
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball count : 3

Sample Output:

W W W W W W W
W 1 DE 1 W

W 1 1 1 W
W 1 DS 1 W
W W
W W
W G G o G G W
Ball count is 3.

Next Input:
Enter the direction in which the ball need to traverse : ST

Next Output:
W W W W W W W
W 1 DE 1 W
W W
W W
W W
W W
W G G o G G W
Ball count is 3.

Next Input:
Enter the direction in which the ball need to traverse : ST

Next Output:
W W W W W W W
W W
W W
W W
W W
W W
W G G o G G W

You win HURRAY..!!

Question 5:

In this level, you will be given powers. You will get those powers only if you break the powered bricks. The brick's power is as follows

- Extend the ball base by one(It is denoted by B). The ball base gets incremented by 1 first in the right direction and when hits another B brick then the ball base gets incremented by 1 in the left direction and when its another B brick then the base ball

gets incremented by 1 in the right direction and so on.

Since the ball base is extended and if the ball is landed in the extended base, then the ball count should not be decremented. If the ball lands in any other position other than the ball base then the ball count is decremented.

Sample Input and Output:

Enter size of the NxN matrix : 7

Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 B
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 P
Do you want to continue(Y or N)?N
Enter ball count : 3

Sample Output:

```
W W W W W W W
W             W
W   1 1 1     W
W   1 B 1     W
W             W
W             W
W G G o G G W
```

Ball count is 3.

Next Input:

Enter the direction in which the ball need to traverse : ST

Next Output:

```
W W W W W W W
W             W
W   1 1 1     W
W   1   1     W
W             W
W             W
```

W G G o _ G W
Ball count is 3.

Next Input:
Enter the direction in which the ball need to traverse : RD

Next Output:
W W W W W W W
W W
W 1 1 1 W
W 1 W
W W
W W
W G G _ o G W
Ball count is 3.

Question 6:

In this level, a new brick namely direction brick is included.

*Direction brick - This brick will be denoted as either N(North), S(South), E(East) and W(West).
Eg. If N brick is hit then the ball traverse in the North direction.

Sample Input and Output:
W W W W W W W
W W
W 1 1 1 W
W 1 N 1 W
W W
W W
W G G o G G W

Next Input:
Enter the direction in which the ball need to traverse : ST
W W W W W W W
W W
W 1 1 W
W 1 1 W
W W
W W

W G G o G G W

Since the ball hits the 'N' north brick it gets reflected to the north direction and it breaks another '1' brick and then returns to the initial position.

Question 7:

In this level, you will get an extra ball when a particular powered brick is broken which is denoted by 'D' and at the same time you will have a repetitive brick whick breaks only if it is hit indirectly which is denoted by 'R'.

* Repetitive brick 'R' - The brick strength increases by 1 when it is hit directly and in a matrix only 1 'R' brick can be present.

Sample Input and Output:

Enter NXN matrix : 7

Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 R
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 D
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball count : 3

Sample Output:

W W W W W W W
W W
W 1 R 1 W
W 1 D 1 W
W W
W W
W G G o G G W
Ball count is 3.
R brick strength is 1.

Next Input:
Enter the direction in which the ball need to traverse : ST

Next Output:

```
W W W W W W W
W             W
W   1 R 1     W
W   1   1     W
W             W
W             W
W G G o G G W
```

Ball count is 4.
R brick strength is 1.

Next Input:
Enter the direction in which the ball need to traverse : ST

Next Output:

```
W W W W W W W
W             W
W   1 R 1     W
W   1   1     W
W             W
W             W
W G G o G G W
```

Ball count is 4.
R brick strength is 2.

Question 8:

Now for each hit with the ball the bricks will come one step closer to the ground level. The game will be over if a brick touches the ground level.

Sample Input and Output:

Enter NXN matrix : 7

Enter the brick's position and the brick type : 2 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 3 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 2 4 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 2 1
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 3 2
Do you want to continue(Y or N)?Y
Enter the brick's position and the brick type : 3 4 1
Do you want to continue(Y or N)?N
Enter ball count : 3

```
W W W W W W W
W             W
W   1 1 1     W
W   1 2 1     W
W             W
W             W
W G G o G G W
```

Next Input:

Enter the direction in which the ball need to traverse : ST

Next Output:

```
W W W W W W W
W             W
W             W
W   1 1 1     W
W   1 1 1     W
W             W
W G G o G G W
```

Ball count is 3.

Next Input:

Enter the direction in which the ball need to traverse : ST

Next Output :

```
W W W W W W W
W             W
W             W
W             W
W   1 1 1     W
W   1   1     W
W G G o G G W
```

Ball count is 3.

Next Input:

Enter the direction in which the ball need to traverse : RD

Next Output:

```
W W W W W W W
W             W
W             W
W             W
W             W
W   1   1     W
W G 1 o 1 G W
```

GAME OVER..!!