For this assignment you are going to create a simple game where a Player tries to reach a Goal and avoids Zombies. Our board will be a 10x10 square, a round of the game will look like this:

..........

.G....Z...

..........

..Z...Z...

..........

........Z.

..........

......Z...

..........

...P......

Create a class called “GameObject” that has an identifier for what it is (P = Player, Z = Zombie, G = Goal)

(you may find it easier to store the x and y position in the GameObject as well… don’t forget to update it)

Create a class called “Map” that contains a 10x10 array of pointers to GameObjects.

Map should have the following methods:

Map();

Initializes the map to nullptrs.

void place(GameObject \*go);

Places a GameObject on the map randomly (using the rules below).

void draw();

Draws the map (empty spaces should be . otherwise draw the id of the object.

bool movePlayer(char direction)

Finds the player and moves them in the direction (using the rules below). Returns true if the game ended (touched the goal or zombie), returns false, otherwise.

bool moveZombies()

Finds the zombies and moves them in a random direction (using the rules below). Returns true if the game ended (touched the player), returns false, otherwise.

**Initialize the Game**

* Place the Goal in a random location.
* Place the Player in a random location (be sure it is not on top of the goal)
* Place 5 zombies in random locations (be sure they are not on the goal, player, or each other).
* Random location, means if the game is run another time, everything will start somewhere different.

**Each Round:**

* Draw the map (see the example above)
* Ask the player if they want to move (n = north, s = south, e = east, w = west)
  + If they try to move out of bounds, print “You hit a wall.” (they have wasted a turn)
  + If they reach the goal, print “You win!”, and end the game.
  + If they touch a zombie, print “You lose!” and end the game.
* After the player has moved, move each Zombie one at a time.
  + Pick a random direction to move.
  + If they try to walk out of bounds, nothing happens, they just stay in place.
  + If they try to walk into the goal or another zombie, nothing happens, they stay in place.
  + If they walk into the player, print, “You lose!” and end the game.
  + It is OK if they move in a different order each time.

Keep going until the player wins or loses.

**Hint**

It may be useful to have extra pointers inside of Map to the various objects.

A game may go something like this (this is just an example)

.........Z

..........

Z.........

.......P..

Z.......Z.

..........

..........

........Z.

......G...

..........

Enter direction (n, s, e, w): w

........Z.

Z.........

..........

......P...

Z......Z..

..........

........Z.

..........

......G...

..........

Enter direction (n, s, e, w): s

Z......Z..

..........

..........

.......Z..

......P...

Z.......Z.

..........

..........

......G...

..........

Enter direction (n, s, e, w): s

.Z....Z...

..........

..........

..........

.......Z..

.Z....PZ..

..........

..........

......G...

..........

Enter direction (n, s, e, w): s

Z.........

......Z...

..........

..........

.Z....Z...

......Z...

......P...

..........

......G...

..........

Enter direction (n, s, e, w): s

.Z........

.....Z....

..........

..........

.......Z..

.Z....Z...

..........

......P...

......G...

..........

Enter direction (n, s, e, w): s

You win!