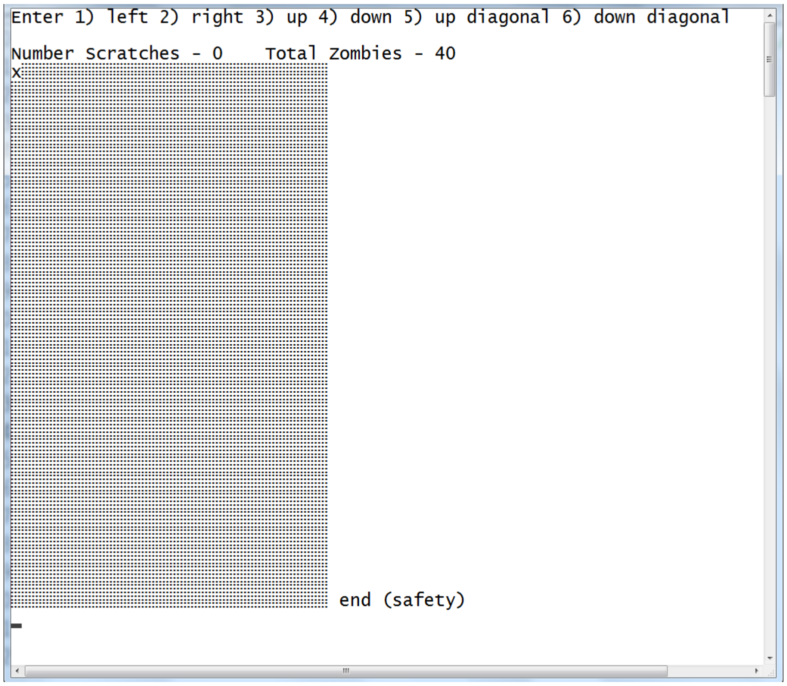
ZombieWalk

Gist of game:

In this project we will create a simple game. The user will be able to move through the game board by selecting options 1 – 6. When the player moves through the grid and x symbol shows up, if there is an invisible zombie at that location, the player will get scratched and the grid will display a symbol (*) for a zombie in that location. Player can get scratched twice before the game is over (so third time it happens, player loses), at this point the board is displayed again but with all zombies. See screenshots below.



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Enter 1) left 2) right 3) up 4) down 5) up diagonal 6) down diagonal

Number Scratches - 0    Total Zombies - 40
x
                                          end (safety)
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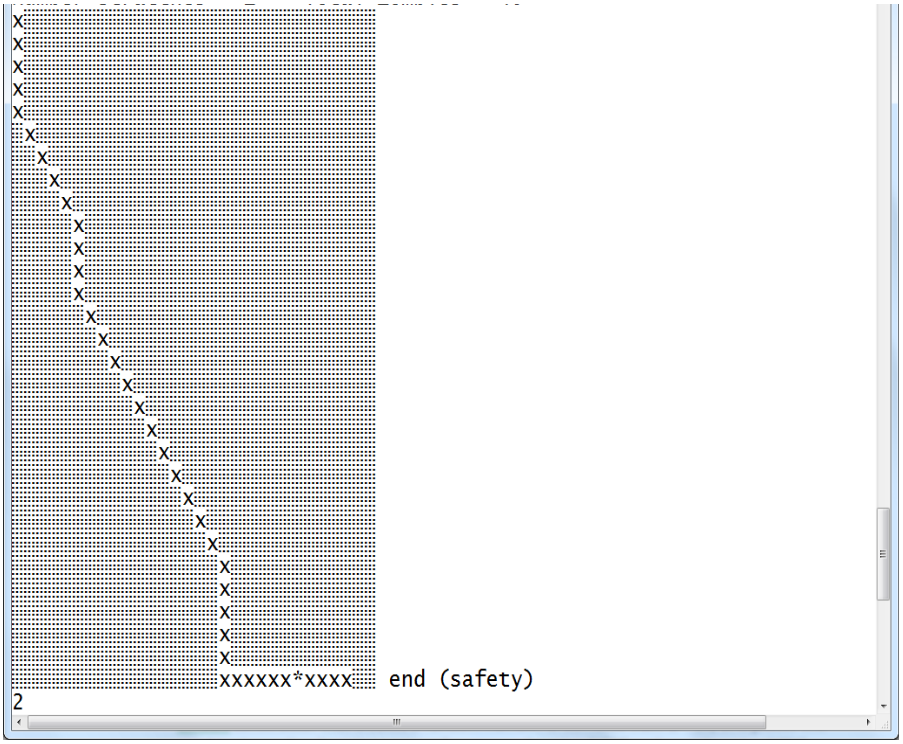

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2
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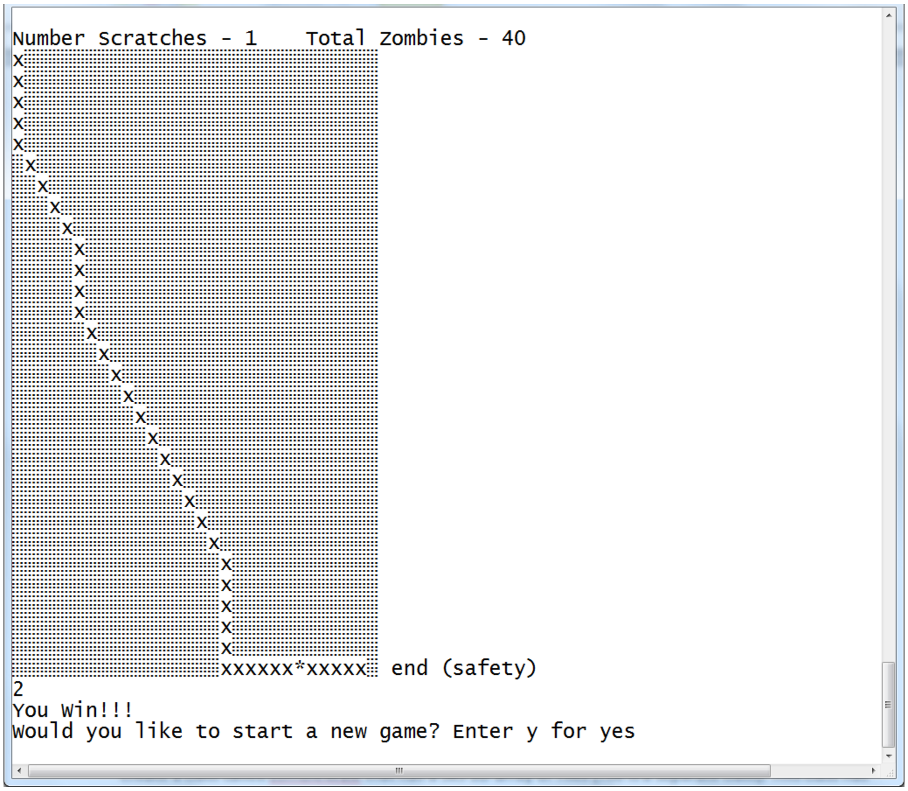

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Number Scratches - 1    Total Zombies - 40
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2
You Win!!!
Would you like to start a new game? Enter y for yes
```

Program Instructions:

Create a class called ZombieWalk that has a 30 x 30 2D array of Tiles (Tile is a separate class). In addition the ZombieWalk has the following methods:

- default constructor that creates a random number of zombies from 1 – 100, and places the zombies in random locations except for at array location [0][0] and array location [29][29].
- moveUp() – moves the character to the tile above in the 2D array. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. . If there is a zombie, update number of scratches and set isVisible to true.
- moveDown() – moves character to the tile below. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. If there is a zombie, update number of scratches and set isVisible to true.
- moveLeft() – moves character to the tile on the left. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. . If there is a zombie, update number of scratches and set isVisible to true.
- moveRight() – moves character to the tile on the right. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. If there is a zombie, update number of scratches and set isVisible to true.
- upDiag() – moves character to the tile 1 up and 1 to the right. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. If there is a zombie, update number of scratches and set isVisible to true.
- downDiag() – moves character 1 down and 1 to the right. Make sure character does not go out of bounds. An ‘x’ should be placed at this location, unless there is a zombie. If there is a zombie, update number of scratches and set isVisible to true.
- newGame() – should reset the 2D array of tiles and create a new random number of zombies.
- displayBoard() – should display current 2D array board
- displayGameOver() – should display “Game OVER” and the 2D array board with all zombies.
- isGameOver() – returns true if the num_scratches > 2 and the player is not at location [29][29], and false otherwise
- didWin() – returns true if the user make it to location [29][29] and false otherwise.
- checkEndGame() – checks if the game is over or if the player won. If any of these occurred, it should display the result and ask if the player wants to play again. If they do then create a new game.
- runGame() – this should run the game by 1) starting user at location [0][0] and then continuously asking if they want to go 1) up, 2) down, 3) right, or 4) left 5) up diagonal 6) down diagonal. After each move display the board with unseen zombies as invisible. Also display total number of zombies on board. Keep running game until game is over. Decide which methods if any you want to be private.

Create a Tile class that has the following:

Variables:

- static unsigned int num_zombies : initialized to 0
- static unsigned int num_scratches : initialized to 0
- bool isZombie
- bool isZombieVisible
- char tile_icon;

Methods:

- default constructor : creates a Tile with isZombie = false, num_scratches = 0, num_zombies = 0 and isZombieVisible should be false; tile_icon = char(176).
- Tile(bool isZombie, unsigned int num_scratches) : assigns corresponding variables and if isZombie is true, then it should increment num_zombies by 1. tile_icon = char(176).
- getIsZombieVisible() – returns true or false depending on the value of isZombieVisible
- setIsZombieVisible(bool is_visible) – sets corresponding value to isZombieVisible. If zombie is now visible set the tile_icon = '*';
- getTileIcon() – returns the tile_icon's character value
- setTileIcon(char icon_value) : assign the icon_value only if the input is 'x', char(176), or '*'
- exploreTile() – if the tile is a zombie then setIsZombieVisible to true, increment num_scratches by 1, if it is not a zombie then set the tile_icon to 'x';
- setIsZombie(bool is_zombie) – assign value to isZombie, if the value is true increment num_zombies by 1
- getIsZobmie() – returns the value of isZobmie
- resetTile() – resets all of the values of the tile to the specifications of the default constructor. In addition, if the original Tile was a zombie then subtract 1 from num_zobmies. If num_zombies is 0, do not subtract.