COSC 231   Project #3   WINTER 2011   The Game

Distributed: 2/22/2011   **Due:** 3/17/2011

Specification

You will be leveraging your code developed for Project #2 (moving a sprite) and InLab 1/20/2011, to develop a timed treasure hunt game, with the occasional meteorite strike.

Find pictures for:
      Gold
      Grass
      Water
      Wasteland
      Sprite

Display all the 'landscaping' pictures as the same size in height and width.

Hard code the positioning of the landscape pictures (i.e., the game board) to get an interesting world. *For extra credit*, the user is given the ability to create a landscape (game board).

Display the sprite positioning control (see Inlab 1/20/2011) in empty space (away from the game board).

Put the sprite down on the game board – the initial position can be hard coded.

The motion of the sprite is constrained:
      The sprite can move onto Grass
      The sprite can move onto Gold
      The sprite can move onto Wasteland
      The sprite cannot move onto Water
When the sprite tries to move onto Water, it is stopped before moving. The user will have to give a new direction to the sprite before he can continue moving.

This is a timed game, so that a timer starts when the sprite first starts moving and stops when the game is over (see below for game over). The elapsed game time is supplied as output when the game is over.

The sprite picks up treasure as he goes.
When the sprite moves over Gold, the sprite's treasure count goes up by 1, and the Gold is replaced by Grass.

Every so often (at random times, *approximately* every 5 seconds), the game board is hit in a random location by a meteorite, which destroys the entire landscape

item(turns the landscape item to Wasteland). Any Gold that was at that location is no longer available. Any Water that was at that location becomes passable because it is now Wasteland.

You have some flexibility in choosing how to implement the random timing of the meteorite strikes. One possibility is that every 1 second, there is a 20% chance of a meteorite strike – use `Math.random()`.

The goal of the game is to pick up as much Gold as possible, as quickly as possible.

The game ends when:
1. There is no Gold remaining. Output 'You win with x Gold in y seconds.'
2. The sprite is killed by a meteorite. Output 'Sorry, you are hit by a meteorite.'
3. The user clicks an End Game button. Output, 'Game force quite with x Gold in y seconds.'

Size of game board:
   Choose a game board that is compatible with the size of the client screen. The actual number of landscape pictures (number of rows and columns) will depend on the client screen size and the size of the pictures that you're using.
Choose a game board size so that the sprite moves in *a stately but not lazy speed*. I would guess that a reasonable size would be 40 X 40 with each landscape picture size 10 X 10.

Turn in:
   Hard copy of all code (html, css, javascript)
   Screen shot
   Demo

Grade based on:
   Meeting specification
   Satisfying coding standards
   Demo and code walk through
   Elegance

Extra credit:
Make an improvement and get extra credit for it.