COSC 231 FALL 2011 Project #2 Whack A Mole

Distributed: 17 October 2011 **Due:** November 2 (2 weeks + 2 days)

How the game plays
Here is an on-line game:
`http://www.addictinggames.com/arcade-games/whackamole.jsp`
There is some difference between the example and the specification below. Especially note state 1 ("set"), which warns the player that a mole is about to appear.

Specification
Use form controls to input the settings for the game.

The user specifies the size of the grid: 3X3, 5X5.
The user specifies the speed of play: really slow, slow.
The user specifies the length of time to play: 5 seconds, 10 seconds.

There will be a button to start play.

The start play button will reset all grid elements to the empty state, reset the counter to 0, and begin play using the current settings values.

State transitions
Each cell starts in the initial state (0) called "empty".

When a mole begins to appear, it can't be hit yet, but the player is warned a mole is appearing. That is state (1) called "set". The mole cannot be hit in this state (a click is ignored).

From the set state (1), go to state 2 ("go"). In this state, the mole is fully emerged and he can be hit.

If the mole is hit (by a mouse click on the cell) in state 2, the cell goes to state 3, called "kill". A mouse click outside of a cell does not count. A mouse click when there is no mole in the cell does not count.

If the mole is not hit in state 2, the cell goes to state 0.

After the cell is in state 3, it moves to state 0.

A cell will remain in a state for a fixed amount of time, depending on the speed of play. A click that is a hit will not cause an immediate state transition.

You will need to find 4 pictures to reflect the state of a cell. These pictures will reflect the state of the cell. For example, if you want to use single pixels, then you could use:

0	empty	black
1	set	yellow
2	go	green

3 kill red

The first time the user has a hit on a mole, increment the counter by one. The counter is displayed during the entire course of play.

Randomness
A cell in state 0 will transition to state 1 (set) with probability 20%. A cell in state 0 will transition to state 0 with probability 80%. *You may adjust this probability at your own discretion (see section* **Unspecified***) to make the game more playable.*

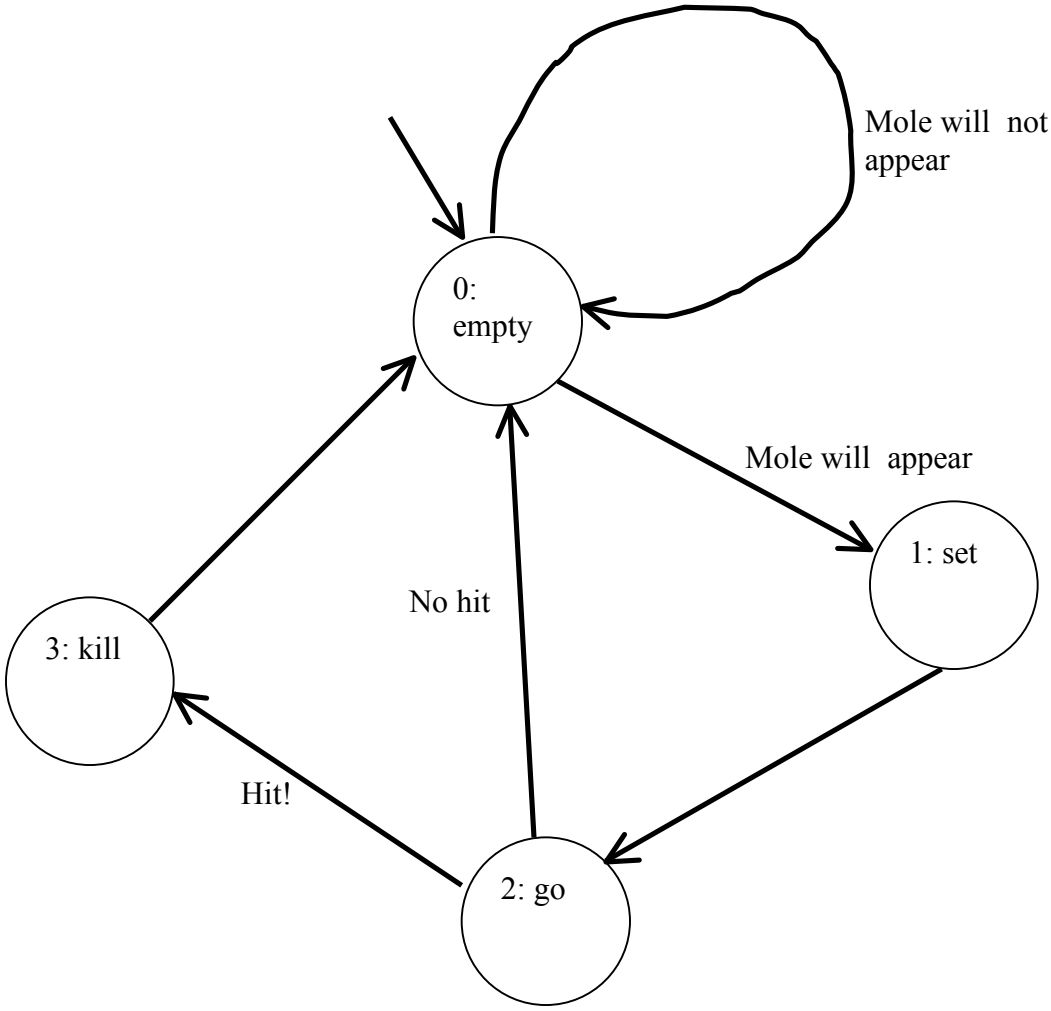
Unspecified:
All other facets are not specified. You will make appropriate design decisions.

Suggestions and warnings:
(1) Code up a 1 X 1 grid first
(2) Because a cell changes state only when a timer goes off, you can get away with a single timer for the entire grid.
(3) Look at floodit.html or checkerboard.html for ideas on drawing a grid.
(4) Be sure to turn off timer when the game is over.
(5) Use the state transition diagram to constrain the difficulty of programming. Each grid cell has exactly the same behavior, modified only by whether or not a mole will appear and whether or not the player made a hit (in state 2).

Grade based on:

- 50% programming
  - 25% Satisfying specs
  - 8% Good design: playability, aesthetics.
  - 12% Programming elegance
  - 5% Documentation
- 50% code walk through and on-the-fly modification

This code **must** be demoed to Dr. Haynes.


Mole will not appear
0: empty
Mole will appear
1: set
No hit
3: kill
Hit!
2: go