
CS 456, Spring 2009

Assignment #4

Snake!

Due 3/11/09, in class

Assignment

In JavaScript write a version of the classic computer game Snake!. In short a snake is a sequence of dots on the screen moving in one of four directions. Direction is changed by clicking the mouse in the desired new direction. If the snake runs off the screen, or into itself, the player's turn is over.

Features

The base program (creating and moving the snake) will be graded out of 70 points. You can then add *features*. Up to three features will be graded. These will be the first three found unless you clearly identify the three that you want graded. Each feature described below includes a maximum point value.

- [5] Add a slider that changes the snake's speed.
- [5] Random length growth (that growth occurred must be indicated to the player).
- [10] Flower Power growth. Flower's have a random nutrition value. The snake grows in length by this amount when "eating" (*i.e.*, running over) the flower.
- [5] Difficulty level slider that changes the length-growth caused by each flower-power point.
- [10] Poison flowers. The snakes dies [5] or shrinks [10] when eating one of these (that 'growth' occurred must be indicated to the player).
- [10] Obstacles - hitting an obstacle is like going out of bounds.
- [15] Support two players with alternating turns and separate scores.
- [10] Have the walls move in at random times or at a random rate.
- [15] Keep a high score on a server. Data must be stored in valid XML.
- [10] Better graphics when the snake turns. (Do ask me!)
- [5] Program the direction change to prevent "bite backs". In other words prevent the snake from turning 180 degrees and hitting itself.
- [5] Better graphics II - give the snake the rainbow color effect and perhaps a head and a tail.
- [5] Add a pause/resume button.
- [5] Have power flowers subject to gravity and thus 'fall' down the screen ala *the matrix*.

What to hand in

- (1) A 2-up copy of your web page and JavaScript code with your three chosen features clearly identified.
- (2) A test plan of no more than one page (not counting the screen shots added post running the test of the plan). This narrative should explain each screen shot by name or number and how it fits into the overall test plan.
- (3) Email me the url for your web page and a tar ball named `<your-account-name>.tar.gz` that includes the source, your test plan, and a sequence of screen shots showing off how well your program works on the test plan.

Notes

- (1) For this assignment you again get to work alone.
- (2) Check out [http://en.wikipedia.org/wiki/Snake_\(video_game\)](http://en.wikipedia.org/wiki/Snake_(video_game)).
- (3) Check out http://kidrocket.org/game_snake_fullscreen.php.