Tufts University
Department of Computer Science
COMP 23: Introduction to Game Development
Spring 2014
Quiz 2 Practice. Closed Book. 25 Total Points.

NAME: _____ LOGIN:_____

Quiz 2 will cover the following topics:

- Sprites
- Sounds and audio
- Animation
- Physics
- Game testing
- Securing online games, ethics, cheating
- Game engines
- Mobile and web game development (basic concepts)

Study Guide

To help you study for this quiz:

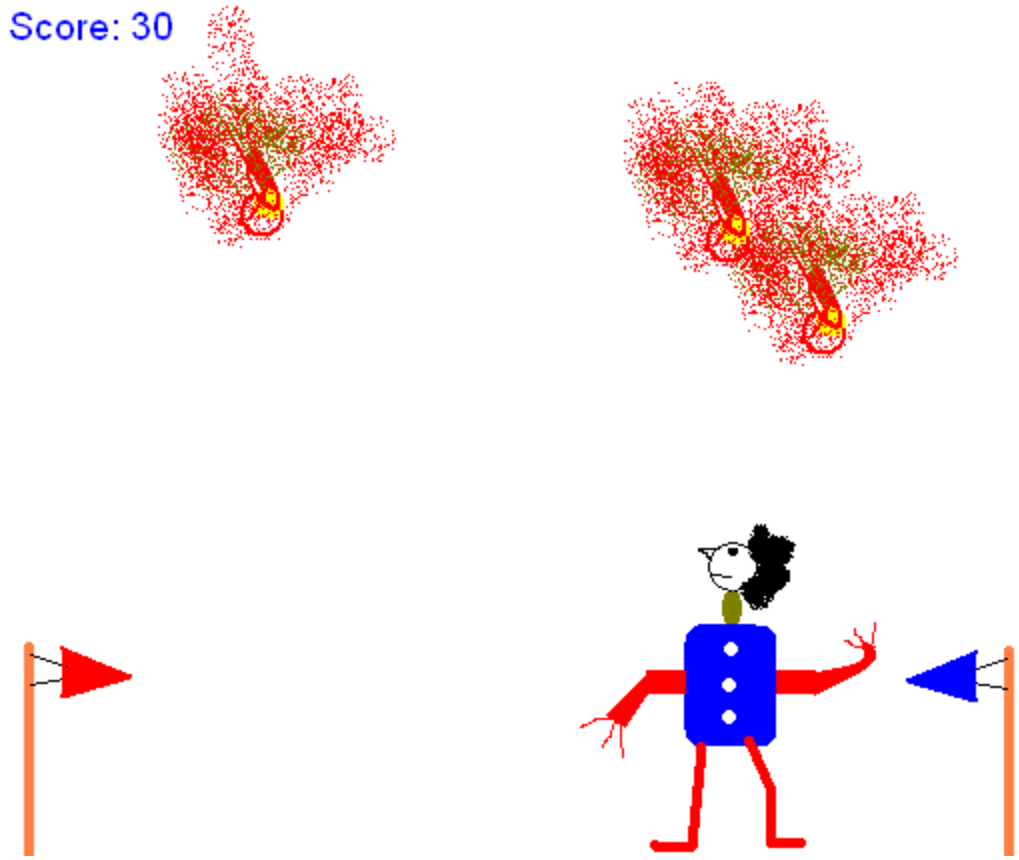
1. There may be some *code reading*.
2. Predominantly, you will need to apply concepts to this quiz.
3. Collision detection will definitely be on it. Three different types we discussed in class: a matrix of values, intersection of shapes, and see if a point is inside of a particular region on the screen.
4. Know the concept of a sprite. That is, any object on a screen.
5. Know some basic performance issues. What happens when there are way to many sprites on a screen?

Memorizing notes will likely not help (probably not). The quiz is all about applied knowledge. I will present a game or games that you might already know. You will analyze it, perhaps design a piece of it, and even add a new feature to it.

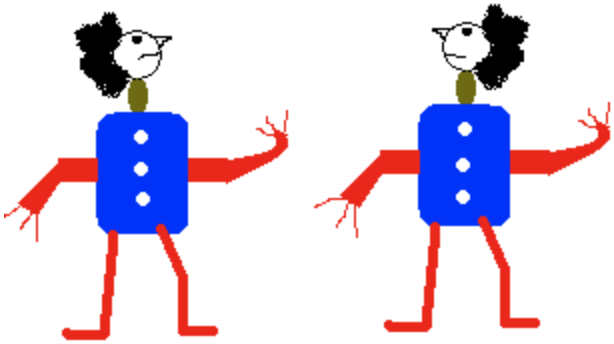
Sample Questions

1. Explain the complexity and large attack surface of Massively Multiplayer Online Role Playing Games (MMORPGs), and ultimately, why they are so ripe targets for nefarious activities.

2. For this question, you will design a silly 2D game. The idea of the game is simple: move the character to the red and the blue flag, in that order, and you (the player) will get a point. You must avoid the fire falling from the sky, or else, game over man!



1. Given the image directly below (in one piece), describe how you would load the image



   for an animated sprite?
2. Describe how you would implement animating the sprite above.
3. How many distinct sprites are there in this game and what are they?

4. In the game loop, what checks and updates are necessary for each frame?
5. What event handling is necessary for this game?
6. Explain the process on updating the score.

Solution for Sample Question 2:

1. ***Load the entire image. Then divide it up into two images: one for moving to the left and one for moving to the right.***
2. ***Keep track of the direction the character is moving. If the character is moving to the left, then display the first image on the strip above. If the character is moving to the right, then change the image of the character to the second image on the strip.***
3. ***Four (4). A fireball (which shares same behaviors but repeated), the red flag, the blue flag, and the character. The red and blue flags can count as two different sprites because their behavior is different.***
4. ***Update the position of all sprites (a.k.a., move), check to see if the fireballs collide with character, and check to see of character successfully moved and touched red to blue flags.***
5. ***Keyboard***
6. ***Keep track if the user hit (collided with) both the red and blue flags in the order. Use a boolean variable. If user hit the red flag but have not touched the blue flag yet, then do no add a point. If the user hit the red flag and the blue flag, then add a point to the score, provided that you have a copy of the scoreboard object to manipulate (which is not a sprite).***