

CSCI 1133 Programming Exam 3

Extra Credit

Task 9 (15 points)

If you look closely at the code to TurboBoost Tiny and the code to fire lasers, you will notice that it doesn't work quite as it should. For example, if Tiny is moving rapidly toward positive infinity in the x direction, but her head is pointed directly up toward positive infinity in the y direction, the lasers will actually **not** shoot straight up! Similarly, if Tiny is pointed opposite the direction she is moving, a "TurboBoost" will actually slow her down.

Although these cases are rare, a correct implementation of the game would fix these issues.

To earn 15 extra credit points, you can alter the way the lasers are fired and the implementation of TurboBoost. A correct implementation of this will shoot lasers in the direction Tiny is pointing (regardless of the direction or speed she is traveling), and will TurboBoost Tiny (make the Turtle object travel "faster") regardless of which direction she is pointing.

Task 10 (15 points)

Currently, when Tiny hits a ghost with her laser (or by collision), the ghost is removed from play. To earn 15 extra credit points, you should alter the game so when Tiny successfully hits a blue ghost with a laser (or collides into a blue ghost), the ghost splits into two smaller pink ghosts (you can use pinkghost.gif on Canvas). When a blue ghost is struck, it should "fracture" into two pink ghosts (Hint: a fracture should mean the two pieces move away from the blue ghost in different directions – this will be discussed in class). When a pink ghost is hit with a laser, the player should earn an additional 30 points and the ghost should be removed from play.

As with the extra credit from Exam 1, you may apply these extra credit points to any programming exam. However, the maximum total score across all three exams is 300 points.