**Snake Clone Game – Report**

**Rendering**

During the development of my game, the main problem came from the unusual way I decided to have the snake look, with it being one continuous line rather than a set of individual positions. I made it work by having a point to be its head, and then kept a list of points at which it turned as well as which way it started going. A long with a length, I drew between the head and each turn point until the distance covered equalled the length.

Once drawing was done, this way of making the snake proved to actually be fairly easy to do collision with other snakes due to it all being made of essentially rectangles, which were easy to perform collision checks with. The problem was with colliding with itself, which actually happened too often due to the snakes head being somewhat inside of the rest of the body for a few pixels after turning. This was solved by just not checking collision against the first 3 segments, all of which are impossible to hit since the snake cannot move back into itself.

**UI**

Another decision I made was to design my own button class to use on the menu systems. This proved to not be as difficult as I originally thought, although it doesn’t work quite as well as hoped. The actual mouse handling for it was very simple since I could just use the IMouseEvent class as part of the prg library. Once I had whether the mouse had been clicked, it was a simple test to see if the mouse position was within the rectangle of the button. I would have liked to have some sort of callback function within the button to run when it was clicked, but learning how to do that during the timescale we had seemed a bit too ambitious. I do think the buttons add a nice touch to the menus, allowing the user some more interaction than just pressing keys for the whole time.

**AI**

The AI actually wasn’t too difficult to implement either, aside from a few problems. Making it move towards the fruit was quite simple since it’s only based on moving either horizontally or vertically along each axis, so alternating between going vertically and horizontally until both axes are in line with the fruits works to good effect. The problems mainly came in when trying to pass information about which fruit the AI should be targeting, since the player can also grab it before the AI and this information needs to be given so it can pick a new fruit to aim for. I had a few solutions which resulted in null pointers being thrown around until I came to the solution given in the finished project which seems to work with no problems during my testing.

**Conclusion**

Overall, I think the game was a success, although I would have liked to add a few more features for just fun mechanics like portals or a dubstep fruit (which may still get done after the deadline since the idea sounds fun!).