G4RCE Development: Testing Documentation

Feature 6: Multiple Track Selection

Track Creator: Cassandra Companion
Track Tester: Stephanie Petronella

Testing Part 1: The tracks themselves

Expectations: Each new track should have a collision layer (curbs or some other solid obstacle on the track). The race car should not be able to go through anything on this layer. Each new track can also have other layers, such as a mud layer, but these layers may have no effect on a race until future implementation. Additionally, there is a very basic expectation that the map should render without any problems and that a race car should be able to move freely around it (where there are no obstacles).

Type of testing: Manual. The 8-shaped track was tested by moving a car, using WASD input, against all the curbs on the track. The same type of testing is planned for the beach, lava, and snow tracks.

Results:
1. The lava and snow tracks could not render in because of a problem with file handling. We were able to fix this later by relocating files in the Tiled map editor.

2. The car did not start at the starting line on the track. On the 8 track, it started somewhere else on the road, and on the other tracks, it started somewhere completely off the road. We were not actually looking explicitly to test this, but we realized it is an important aspect to consider with each new track added to the game. A design decision will have to be made to address this, and future tests will have to test for this.

3. The car could overlap the curb (up to halfway through it) throughout the whole track. To fix this problem, the collision lines had to be readjusted to be closer to the edge of the curbs.

4. The race car could go through and past the curb at two locations. Both locations were locations, in the original Tiled map file, where collision lines started and ended. To fix this problem, we added additional collision lines at the problematic points.

3. Otherwise, the track worked as expected.

Cycle 3 Testing of the Tracks:

Type of Testing and Expectations 1: The beach, lava, and snow tracks were all tested. In the same manner as before, a race car was manually moved against all sections of their curbs to check the collisions lines. Again, we wanted to see that at no point would the race car significantly overlap or go through the curb at any point.

All tracks were also tested to make sure that starting line position objects that were created in Tiled were successfully set up and usable by the code. Code was written so that when the startling line position object was touched by the race car, it would be printed to the screen that there was a contact. A variable that was incremented each touch would also be printed, and a statement saying that the contact was over would be printed when the race car was no longer over the starting line.

Results: There were no rendering problems and the race car did not go through the curb at any location. There was still the issue of the car spawning in the wrong location, but this was expected because the newly added position objects were not implemented in code yet.

The test for the position objects also passed without any problems.

Type of Testing and Expectations 2: Since code for placing the race car in the correct position was completed, there was a little manual testing done to see if the car was placed in the correct spot, upon pressing play, for all five maps.

Results: The car indeed started in the correct position for all tracks. However, for one of the tracks the car was not facing towards the starting line. The car’s initial angle will have to be considered in design and testing, in addition to the car’s starting position.

Testing Part 2: The menu

Menu Coder: Garrett Sullivan
Menu Tester: Stephanie Petronella

Expectations: A track should already be selected by default. Pressing play with this default should bring the user into a race with that track. Selecting a different track in the track selection menu (which should deselect the previously selected track) and then going back to the main menu and pressing play should bring the user into a race with this newly selected track. Basically, whatever track was last selected should be the one the user sees upon pressing play. The track that is selected should also be clearly indicated in some way in the track selection screen.

Type of testing planned: Either manually or in an automated way, different combinations and orders of clicks and selections will be tested to make sure the user will always enter the track that was last selected upon pressing play.

Cycle 3 Testing:

Updated Expectations: There is no longer an expectation that the selected track should be clearly indicated in the track selection screen because we realized that is more of a general menu feature (feature 1). In addition to the expectation that the last clicked track should be the one that is entered upon pressing play, there is also the added expectation that the race car should initially start not far behind the starting line of each track.

Type of testing: For each track in the track selection screen we clicked that track then went back to the main menu and pressed play. A couple times we clicked no tracks before pressing play to make sure the default track would be entered in these cases. Multiple times we also tried clicking multiple tracks in a row before pressing play to make sure the track that was last clicked was the one entered.

Results: All of these tests passed.

Feature 4: Mud Obstacle

Coder: Stephanie Petronella
Tester: Garrett Sullivan

Testing Part 1: Testing how the mud obstacles affect the car
Expectations: The mud obstacle should slow the car's speed when driven over. It should not stop the car like a wall would. Once the car has passed the obstacle it should no longer have any effect on the car's speed.

Type of Testing: Manual. First, the map with the mud obstacle was loaded and the car was moved around in order to test if the mud would block the car's path or if it would allow the car to drive over it.

Results: Every mud obstacle collided with the car upon contact, not allowing the car to pass over them. There was also no indication that the car had slowed down, it just collided with mud. Essentially acting the same as the wall obstacles.

Cycle 3 Testing:

Type of Testing and Expectations 1: A race car was manually driven over mud and the edges of mud on most of the mud spots for the two tracks that had mud. The expectation was that the race car would be slow as long as it was overlapping mud; otherwise, the race car should move at normal speed.

Results: The race car would slow down when first overlapping a mud spot, but then it would randomly speed up again while over the same mud spot. It was found out that this was a problem occurring when the car was overlapping two mud objects at the same time. After more coding, later testing no longer revealed this issue, and the mud feature appeared to be functioning as expected.