CitySim9006

CS 1632 - DELIVERABLE 2: Unit Testing CitySim9006

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Link_to_Repo

Description

  Coming from a background in C and Java, one of the most challenging aspects of this project was quickly familiarizing myself with Ruby. I had to deal with the learning curve before I could really get started on the project itself, but once I figured things out, I really enjoyed working with Ruby. It has some cool syntax that makes things that would be cumbersome in other languages (like iterating and checking if an array contains a particular String) much easier.

  When working with the program itself, I found it challenging to understand how the random number generator code within Ruby was able to reproduce the same results with a given seed. I read through the documentation carefully and figured out that the srand function allows you to produce repeatable results. I think it really goes to show you how important good documentation is; having good code is really only half of the end product, and I think we forget about that sometimes.

  Another aspect of the project that I found confusing at first was determining how to break the program up into parts outside of the obvious objects. I decided to just start with the parts I knew I needed (road, location, driver) and added in the functions that they needed to operate correctly within the program. In the end, I realized I just needed something to iterate through them as well as the main program to initialize and run all of the code.

  Writing automated tests was another new experience for me. Until this assignment, I'd only ever done manual testing. It took some time to learn the syntax for Minitest and also to learn best practices for properly constructing the tests, although I did have some trouble with stubs for the tests. Figuring out what I needed to test for in each case was another challenge, but I ultimately got all of my test cases to work correctly. I think that this aspect of the project in particular will prove very useful to me in the future. I'm sure that I will have to work with automated testing at some point in my career, and I'm glad that now I can say I have some experience with it and thoroughly understand the process of creating automated tests.

Screen Shots

Successful Iteration Tests

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62]  9:56
> ruby iteration_test.rb
Run options: --seed 10452

# Running:

........

Finished in 0.001066s, 7504.6907 runs/s, 7504.6907 assertions/s.

8 runs, 8 assertions, 0 failures, 0 errors, 0 skips
```

Successful Driver Tests

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62] × 9:56
> ruby driver_test.rb
Run options: --seed 11167

# Running:

........

Finished in 0.001035s, 7729.4689 runs/s, 7729.4689 assertions/s.

8 runs, 8 assertions, 0 failures, 0 errors, 0 skips
```

Successful Locations Test

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62] × 8:55
> ruby locations_test.rb
Run options: --seed 64731

# Running:

.......

Finished in 0.000887s, 7891.7700 runs/s, 10146.5614 assertions/s.

7 runs, 9 assertions, 0 failures, 0 errors, 0 skips
```

Successful Location Test

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62]  8:45
> ruby location_test.rb
Run options: --seed 53263

# Running:

.....

Finished in 0.000968s, 5165.2897 runs/s, 5165.2897 assertions/s.

5 runs, 5 assertions, 0 failures, 0 errors, 0 skips
```

Successful Roads Test

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62] × 8:42
> ruby roads_test.rb
Run options: --seed 6826

# Running:

..........

Finished in 0.001109s, 9017.1320 runs/s, 10820.5585 assertions/s.

10 runs, 12 assertions, 0 failures, 0 errors, 0 skips
```

Successful Road Test

```
npetro in ~/Documents/Github/CS1632/completed_deliverables/petro_deliverable_2 on master ✗          [bfaef62]  8:45
> ruby road_test.rb
Run options: --seed 13948

# Running:

....

Finished in 0.000949s, 4214.9631 runs/s, 4214.9631 assertions/s.

4 runs, 4 assertions, 0 failures, 0 errors, 0 skips
```