Data Structures & Algorithm for Information Processing
95-771 A
Prof. Michael Mccarthy
Fall 2023
Project 2

Submitted by:

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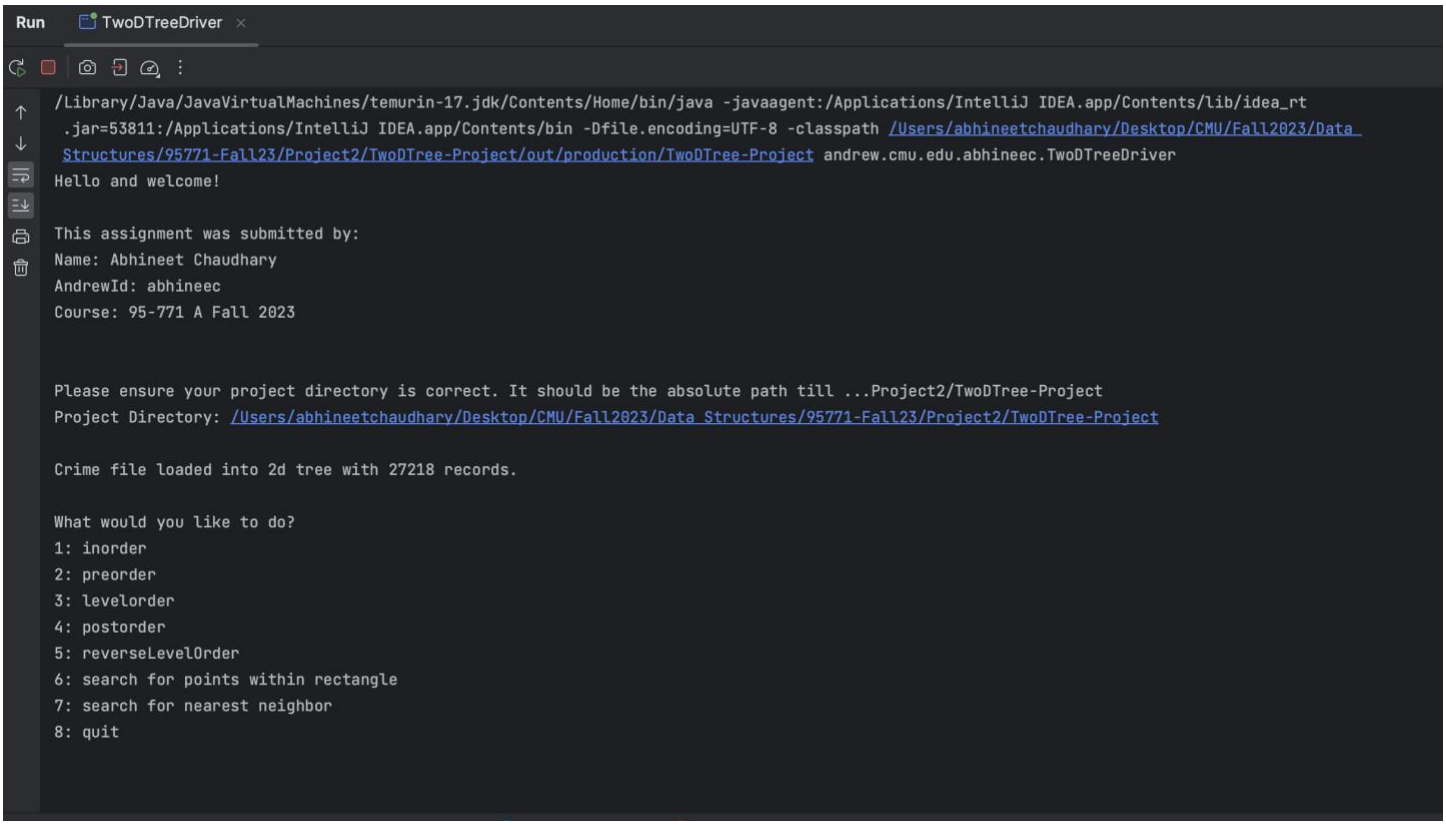
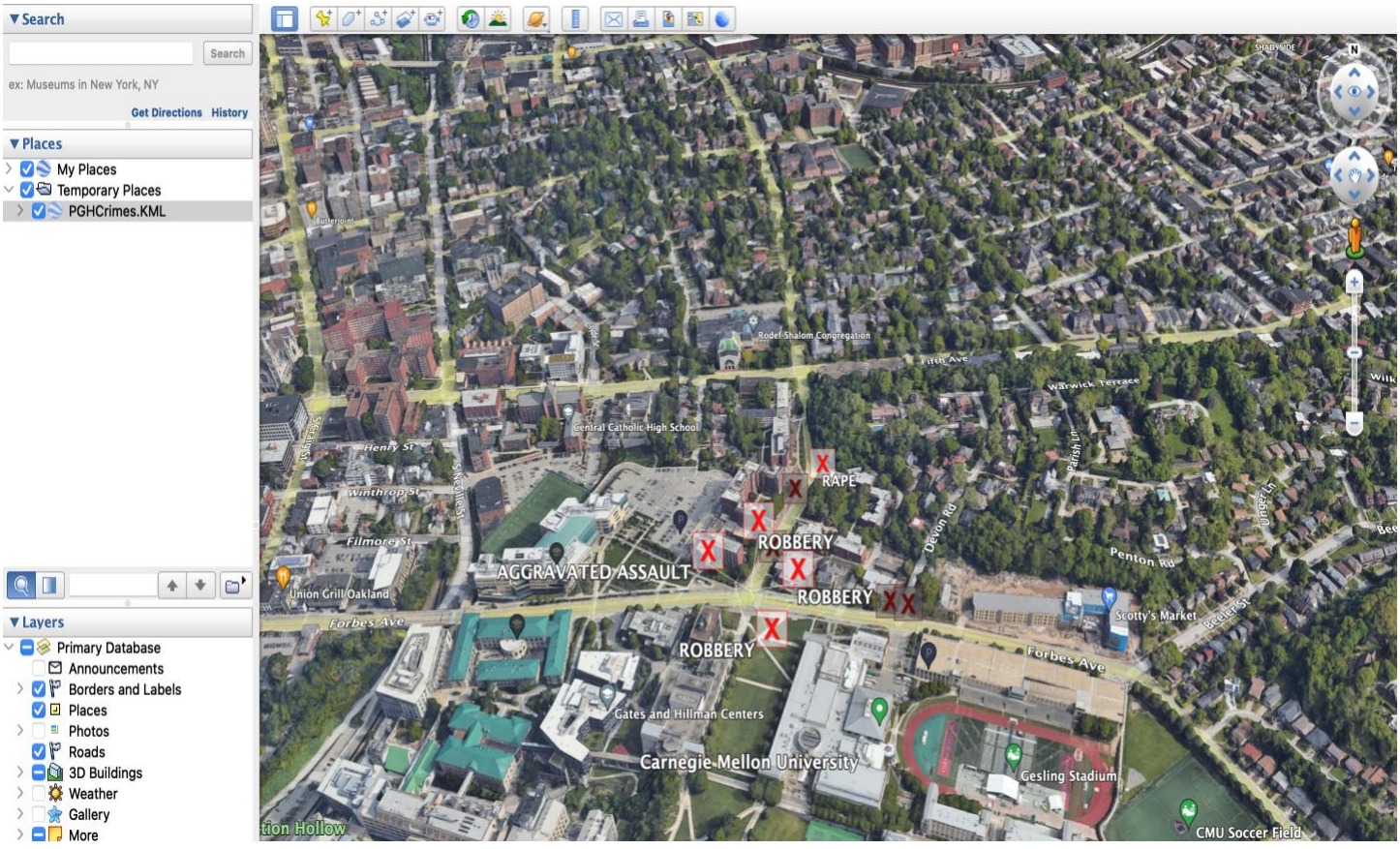


Note: Not including screenshots of Options 1 to 5 since they are too large to showcase.

Option 6:

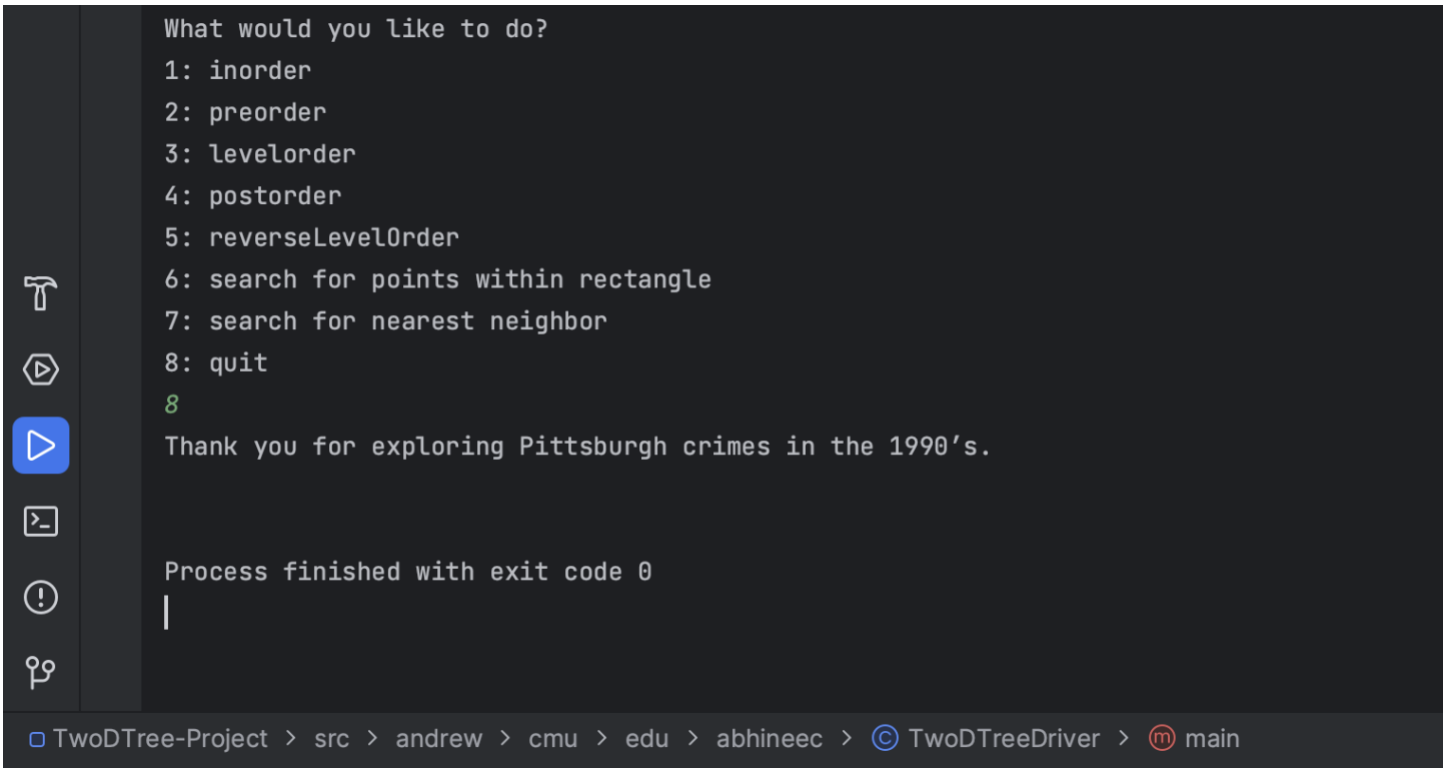
```
Run  TwoDTreeDriver

What would you like to do?
1: inorder
2: preorder
3: levelorder
4: postorder
5: reverseLevelOrder
6: search for points within rectangle
7: search for nearest neighbor
8: quit
6
1357605.688 411838.5393 1358805.688 413038.5393
Searching for points within (1357605.688,411838.5393) (1358805.688,413038.5393)

Examined 21 nodes during search.
Found 9 crimes.

1358205.688, 412438.5393, 32898, 5000 FORBES AV, ROBBERY, 1/25/90, 140100, 40.44471042, -79.94295871
1358205.688, 412438.5393, 33570, 5000 FORBES AV, AGGRAVATED ASSAULT, 11/28/91, 140100, 40.44471042, -79.94295871
1358205.688, 412438.5393, 34074, 5000 FORBES AV, ROBBERY, 4/15/93, 140100, 40.44471042, -79.94295871
1358205.688, 412438.5393, 34590, 5000 FORBES AV, ROBBERY, 9/13/94, 140100, 40.44471042, -79.94295871
1358701.856, 412316.9622, 32969, 5050 FORBES AV, ROBBERY, 4/6/90, 140100, 40.44441059, -79.94116573
1358446.935, 412903.5158, 33181, 1045 MOREWOOD AV, RAPE, 11/4/90, 140100, 40.44600282, -79.94213366
1358275.087, 412559.1355, 33347, 1085 MOREWOOD AV, RAPE, 4/19/91, 140100, 40.44504608, -79.9427202
1358349.449, 412795.1595, 33641, 1060 MOREWOOD AV, RAPE, 2/7/92, 140100, 40.44569883, -79.94247415
1358646.638, 412330.7924, 35042, 5044 FORBES AV, ROBBERY, 12/9/95, 140100, 40.44444479, -79.94136529

The crime data has been written to /Users/abhineetchaudhary/Desktop/CMU/Fall2023/Data Structures/95771-Fall23/Project2/TwoDTree-Project\PGHCrimes.KML and will be
 viewable in Google Earth Pro.
```

Google Earth View for PGHCrimes.KML



Option 7:

Option 8:



References:

1. https://www.youtube.com/watch?v=Glp7THUpGow
    a. Refered this video to understand the approach on deciding if exploration is required to the other side of tree when searching for nearest neighbor
2. https://www.w3schools.com/java/
    a. To refer common java functions or syntax