

Midterm Assignment

Computational Urban Science Workshop, Spring 2019

Due: 9:00am, Thursday, March 21st

Check-in: During class, Thursday, March 14th

Goal: Create a tool that will help you design a new public space!

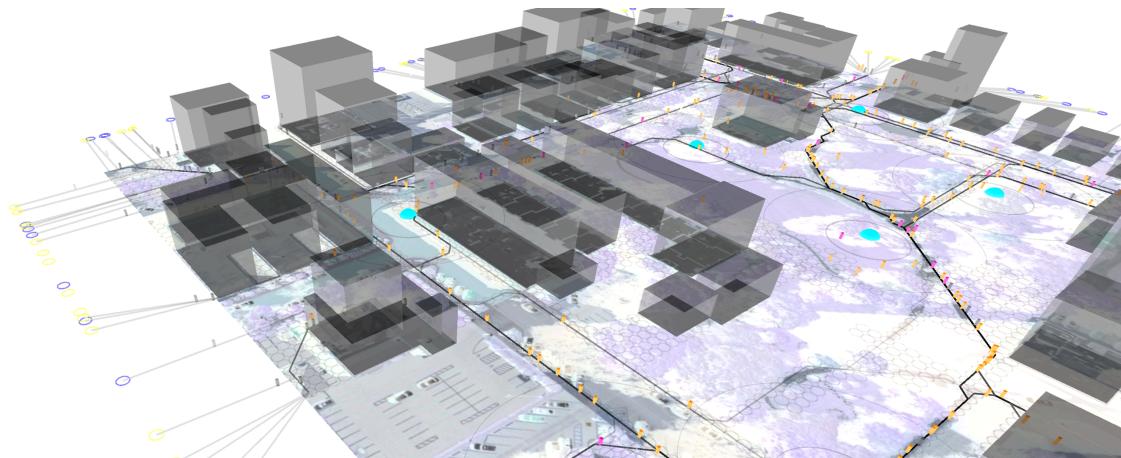


Figure 1. Pedestrian simulation applied to an existing park.

*"There are two kinds of people in this world:
tool users and tool makers."*

Background: The purpose of this assignment is to give you the opportunity to blend techniques you have learned this semester while building a simple tool for designing a new public space. Before you even touch code, you should develop an image in your mind of what you are trying to accomplish, or better yet, write it down. Think about the kind of activities that would make someone excited to participate in the design this new public space. Is it full of joggers, or perhaps a community of gardeners? If so, what are important objects or infrastructure that need to be built in such a public space (e.g. paths or garden plots)? These early decisions will guide you as you design the architecture of your model. We've set aside two weeks for this assignment, anticipating that you will need extra time to plan and execute your project. During class on March 14th we'll check-in to hear your project ideas and address any implementation concerns. Have fun!

Minimum Requirements:

1. A short description of the kind of public space your tool allows you to design, displayed in the sketch canvas. Include directions to use any key commands or mouse interaction, as well as your name.
2. Your tool should load and display an empty parcel of land from the real world (your choosing) that will be the “site” for your new public space. You should also display relevant context information such as location name, adjacent roads, buildings, trees, population, etc. (Recall Tutorials 2&3) You are free to use 2D or 3D graphics, but we recommend that you use 2D if you are still getting comfortable with Processing.
3. Your tool should allow the user to **add**, **move**, or **remove** elements in the public space, such as trees or benches. We recommend implementing this with a combination of **mouse** commands and **key** presses, but feel free to try something new. The user should be able to manipulate at least **2 kinds of objects** that you have designed. These objects should be relevant to the people and goal of your public space.
4. Your tool should animate hypothetical human activity you might expect to see in your public space. Design the behavior of your “agents” so that they reflect the activity (or activities) you expect them to be conducting. For instance, are they passing through the space using the shortest path possible, or are they wandering around? Are they walking, jogging, cycling, sumo wrestling, or hang-gliding? Do they avoid obstacles in their path? Try to avoid jarring behavior such as passing through walls like ghosts.
5. Your tool should evaluate the performance of your public space in some way. The performance you choose should be relevant to the kind of public space you are trying to make. Examples:
 - If you are trying to make a nice place for jogging, do trees nicely shade the joggers as they run?
 - If you want to create a vibrant and well-used space, does a heatmap of human footprints reflect this vibrancy?
6. Print a screen shot of a public space that you design with the help of your new tool. Include it in your GitHub submission.

Resources:

Check the GitHub Repo for examples of projects and templates!

Submission Directions: Locally In your GitHub repository folder (i.e. cusw-spr19-lastName), create a folder called “Midterm”. Save your Processing script to this folder. For example, if I created a Processing script called **Apples** and I saved it to this folder, the folder structure would look like this:

Github/cusw-spr19-winder/Midterm/Apples/Apples.pde

To submit your code online, use the Github Desktop app:

- (1) Navigate to your repository, you should see changes summarized
- (2) **Commit** your changes
- (3) **Sync** or **Push** your commits to github.com

Class time:

Thursday, March 14th we'll go over your project ideas, progress, and iron out concerns you may have with implementing your idea.

Thursday, March 21st will be dedicated to presentations. You may choose to run your tool from the class laptop or on your own machine. Please upload any (optional) PDFs you wish to present along with your GitHub code.