Proposal for Final Project
Computational Urban Science Workshop, Spring 2019

Due: 9:00am, Thursday, April 18th

Goal: Create and present a proposal for a computational visualization project that engages a community!

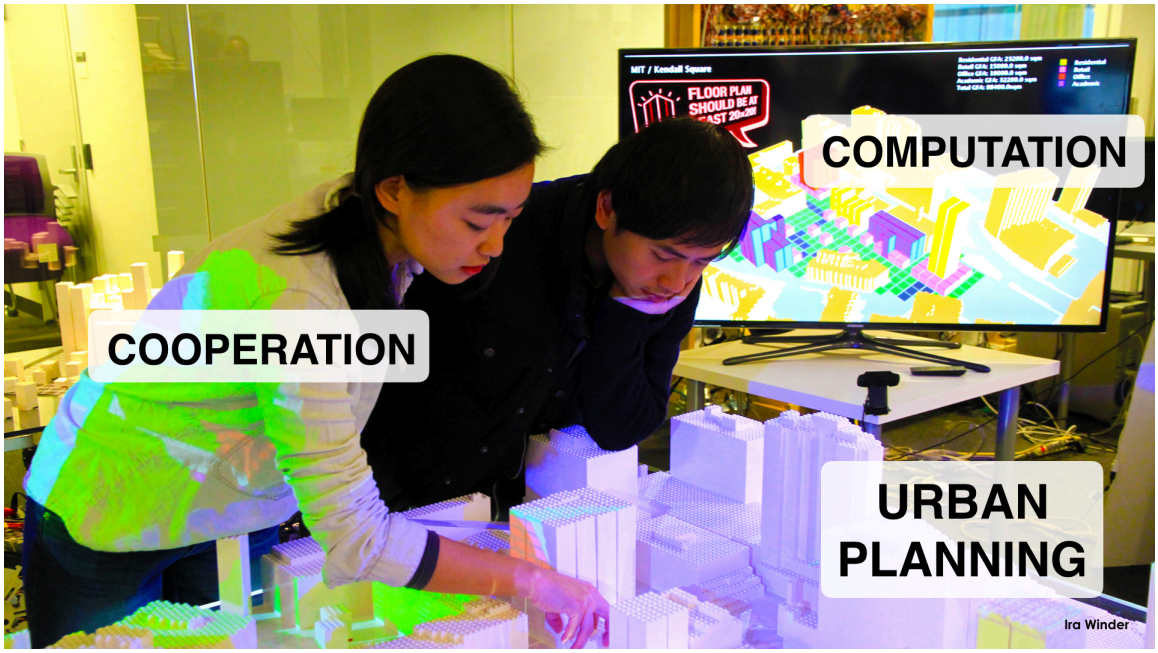

Figure 1. Interactive City Simulation Model for Zoning Kendall Square Development. (by Lezhi Li, Wei Lin, Ariel Noyman, Ira Winder)

Background: Throughout this semester you have been exposed to a blend of experiences and techniques that have prepared you to create your own unique project based upon your personal passions. We understand that this can be intimidating at first, but learning how to **form and execute your own original ideas** is perhaps more important than any specific computational technique we can teach you. We're not here to be tyrannical instructors; we're just here to give you a safe space to go as far as you care to go, but not more.

Before you even touch code, you will develop a 5 minute presentation for the next class about the project you propose to complete for a final project. Please use a series of slides containing any combination of personal experiences, observations, research, sketches, and mockups for your idea. Rather than a technical specification, your presentation should feel like a story to convince us WHY your project should exist.

We offer 3 themes of "cooperation," "urban planning," and "computation" as a basic framework for your project. A well-rounded engagement (i.e. final project) will try to incorporate all three elements:

- **Cooperation**: How does your project help two or more people work together or understand each other?
- **Urban Planning**: How is your project relevant to a problem, policy or infrastructure in the built environment?
- **Computation**: How does the use of computation uniquely allow you to engage with the two former elements?

Your proposal presentation should answer.

1. What are the personal experiences (or shared experiences) that help define the ***need*** for your project and, importantly, help a community (i.e. your audience) connect to what you are concerned about? These experiences will be your guiding mantra. It can and may override any other consideration, including the requirements in this assignment, if you feel like you're getting off track. For example:
   - "I want to figure out a way to commute to the airport faster, but a taxi is too expensive."
   - "I don't have enough high quality food and exercise in my life."
   - "I want to live with my friends off campus, but don't know where to look."
   - "I am concerned that people with different ideological leanings are drifting farther and farther apart from each other."
   - "I am curious about how autonomous vehicle systems components work together to make a cost-efficient shared economy.

2. What is your "**diagnosis**?" In other words, what do you think are some of the underlying challenges within your topic, both socially and technologically? For example:
   - "I don't have enough information to make the correct decision."
   - "There is not enough money to fix the problem."
   - "There are too many possibilities to think about all at once."
   - "There are clear inefficiencies in the system that have not been articulated to the right people."

3. How will you "**engage**" your challenge through a computational project? How do you think it will help? For example:
   - "My project will show how we can make the system better for less cost."

- "My project will give unique information to people who have the power to change the system."
- "I will surprise a broad community with a non-intuitive insight."
- "I will develop a new way of modeling/measuring the phenomenon that I care about (e.g. livability, "Jane" index, etc.)

4. What will be the **form** and medium for you project so that it reaches your audience effectively? Will you create a series of animations to share on social media? Will you create an interactive exhibit that uses projectors? Will you commit to creating a web applet (e.g. program in p5.js instead of Processing?) Be as ambitious as you like in your proposal. We're here to give you the resources you need to complete an ambitious project or, to help you scale things down to be more feasible later down the road.

Notes:

- If you would prefer, Nina or I can work with you directly or connect you with a researcher working on an existing project. For instance, Anne Collin is a PhD student in Prof. Oli de Weck's Engineering Systems Laboratory who is interested in collaborating with a student to model and visualize alternative choice and placement of sensors on autonomous vehicles, and how sensor placement effects AV's ability to navigate an urban environment.
- If you would like your project to be a continuation and expansion of your midterm project, that is also fine, but you are still expected to try and reframe your mid-term project using the presentation format specified.
- If you feel overwhelmed, lost, or disagree with a particular requirement. Let Nina and I know if you think there's a better alternative.
- Remember, if you design your project to be something you care about, it will be a lot easier to motivate yourself to make it happen ☺

Submission Directions: Locally In your GitHub repository folder (i.e. cusw-spr19-lastName), create a folder called "*Final Project*". Save your presentation slides to this folder as a PDF, but also feel free to include other formats as needed. For example, if I created a proposal and saved it to this folder, the folder structure would look like this:

Github/*cusw-spr19-winder/Final Project/proposal.pdf*

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

If you have files that are too big for GitHub (100MB+), instead save a text document with links to the files on a google drive or dropbox.

Class time:

Thursday, April 18th will be dedicated to presentations. Please plan to run your presentation from your own machine and field questions from the class. Please be prepared to engage and give feedback to your peers, as well!