

# CSC/SDS 235: Visual Analytics

Fall 2024

## HW 02: Multiple Views

*This is a group assignment (3-4 students) – I recommend choosing collaborators with complementary skillsets to yours!*

### Goals:

- Explore realistic data via visualization
- Create an interactive, multiple view visualization

## Instructions

### Overview

#### Scenario

It is June 2014, and we're off to the amusement park! DinoFun World is a typical modest-sized amusement park, sitting on about 215 hectares and hosting thousands of visitors each day. It has a small town feel, but it is well known for its exciting rides and events.



Picture by Scott Smith  
<https://www.flickr.com/photos/scottsmith/14749407456/in/pool-rollercoasters>  
<https://creativecommons.org/licenses/by-nc-nd/2.0/>

One event last year was a weekend tribute to Scott Jones, internationally renowned football (“soccer” in US terminology) star. Scott Jones is from a town nearby DinoFun World. He was a classic hometown hero, with thousands of fans who cheered his success as if he were a beloved family member. To celebrate his years of stardom in international play, DinoFun World declared “Scott Jones Weekend”, where Scott was scheduled to appear in two stage shows each on Friday, Saturday, and Sunday to talk about his life and career. In addition, a show of memorabilia related to his illustrious career would be displayed in the park’s Pavilion.

However, the event did not go as planned. Scott’s weekend was marred by crime and mayhem perpetrated by a poor, misguided and disgruntled figure from Scott’s past.

While luckily no one was injured, park officials and law enforcement figures are interested in understanding exactly what happened during that weekend to better prepare themselves for future events. They are interested in understanding **how people move and communicate in the park**, as well as **how patterns change and evolve over time**, and what can be understood about **motivations for changing patterns**.

## The Data

To support your analysis, you have been granted access to two separate datasets documenting activity at the park over the three-day weekend:

- Movement tracking data for all the paying park visitors over the three days of the Scott Jones celebration. This data contains many patterns that are useful for planning park operations.
- In-app communication data over the three days of the Scott Jones celebration. This includes communications between the paying park visitors, as well as communications between the visitors and park services. In addition, the data also contains records indicating if / when the user sent a text to an external party.
- A map of the park.
- A short news report about the crime.
- You may also want to check out the [park website](#) for additional information on the park, events, and more.

The [data](#) available via Moodle. You may use as much or as little of the data in your analysis as you like. Some is useful, other parts might be less so... but you won't know what's what until you explore!

## Your Objective

We've recently learned more about the role of interaction and how coordinated multiple views can be used to provide context for multidimensional data. Use this newfound knowledge to analyze the available data and develop responses to some of the questions below. If you like, you can record a brief video of your interactive visualization to help illustrate your findings (though this is not required).

- What happened during the weekend of the Scott Jones celebration?
  - When did the crime occur?
  - Where did the crime take place?
  - Who are the most likely suspects in the crime?
- Characterize different kinds of groups that visited the park on this weekend (family units, school groups, etc.)
  - How big is the group type?
  - Where does this type of group like to go in the park?
  - How common is this type of group?
  - What are your other observations about this type of group?
  - What can you infer about the group?
  - If you were to make one improvement to the park to better meet this group's needs, what would it be?
- Are there notable differences in activity patterns in the park across the three days?
- What anomalies or unusual movement patterns do you see?
- Who is communicating, with whom, when and where?
- Scott Jones is a VIP (not a paying customer) and therefore does not have an ID. Describe his activities in the park during the three-day weekend.
- Were there any issues with park operations during the three-day weekend?

Don't worry too much about getting the "right answer" - instead, focus on making sure that the evidence you present supports your hypotheses of what the roles and relationships are and the motivations of the person(s) involved.

Good luck!

Acknowledgements

This dataset was prepared by Pacific Northwest National Laboratory as part of the VAST Challenge 2015.

## Deliverables

**\*\*Your visualization must include interaction and multiple views.**

You will submit **four** deliverables for this assignment:

1. Sketches of the visualization(s) you intended to create.
2. The write up you would present to your supervisor based on your analysis.
3. Code (and a README.txt with instructions for running the code) that generates the visualization(s) in your write up.
4. A reflection (the entire group can write a reflection together, or group members may write individual reflections) that includes:

- How each group member contributed to the final submission
- One obstacle you encountered and how you overcame it
- If you were to do this assignment again, what you would do differently.

## Submission

Submit your deliverable(s) in a .zip on Gradescope. If you worked on the reflection as a group, submit as a group (<https://guides.gradescope.com/hc/en-us/articles/21863861823373-Adding-Group-Members-to-a-Submission>), otherwise submit (all pieces) individually.

## Rubric

The following matches the rubric you will see on Gradescope. **Note your sketches and reflection weight most heavily into your grade.**

	Missing / Not Complete (0)	Approaching (3)	Meets (5)	Exceeds (6)
<b>Sketches</b>	Not submitted or not readable.	Sketches are difficult to read and/or need more detail. They do not demonstrate appropriate visual mappings (as discussed in lecture), or clearly support the analysis objectives.	Sketches are difficult to read and/or need more detail. They include some appropriate visual mappings (as discussed in lecture), but not all visual mappings are appropriate. Some visualizations do not support the analysis objectives.	Sketches are detailed, clear, and easy to read. They demonstrate appropriate visual mappings (as discussed in lecture), and clearly support the analysis objectives.
<b>Reflection</b>	Not submitted or not readable.	Reflection does not fully address all three points listed above. And/or needs improvement in one or more of the following areas: formatting, grammar and spelling, clear, concise writing.	Reflection addresses all three points listed above, but answers are not thoughtful. It is well formatted, contains good grammar and spelling, and clear, concise writing.	Reflection thoughtfully addresses all three points listed above. It is well formatted, contains good grammar and spelling, and clear, concise writing.

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	Missing / Not Complete (0)	Approaching (1)	Meets (2)
<b>Code</b>	Not submitted.	Code does not run.	Code runs.
<b>Write-up</b>	Not submitted or not readable.	Write up addresses some but not all the objective(s) of the assignment. It could use improvement in one or more of the following areas: formatting, grammar and spelling, clear, concise writing. Hypotheses are unclear and/or not supported by visualizations shown.	Write up clearly addresses the objective(s) of the assignment. It is well formatted, contains good grammar and spelling, and clear, concise writing. Hypotheses are present and well supported by visualizations shown.