**Group Members:** Marissa Stanvick and Maxwell Lloyd

**Github Repository:** https://github.com/maxwelllloyd/cs171-finalproject.git

1. **Background and Motivation.** Discuss your motivations and reasons for choosing this project, especially any background or research interests that may have influenced your decision.

A Song of Ice and Fire is a series of books written by George R. Martin. The first book, A Game of Thrones, was published in 1996. The most recent book, A Dance with Dragons, was published in 2011. There are two books planned which will complete the 7 book series. The books detail a complex fictional universe. There is a large assortment of characters that are followed throughout a multi-year journey which details a war over the king of Westeros. The books were adapted into an HBO television show, A Game of Thrones, in 2011. Since then the popularity of the books and television show has sky rocketed.

One of reader’s and viewer’s biggest complaint with the show is the overall complexity of the story. There are dozens of narratives going at any given time spanning across two continents and many kingdoms. Both members of this project team are fans of both the books and television show. The interest in the series coupled with the complex web of characters and locations prompted the idea for this visualization.

1. **Project Objectives.** Provide the primary questions you are trying to answer with your visualization. What would you like to learn and accomplish? List the benefits.

Because Game of Thrones involves a large number of different characters and locales, this visualization will focus on questions pertaining to those areas. This project will specifically try to address the following questions:

* 1. How does the location of a character change over time? Where do they travel to?
  2. What percentage of time do characters spend in a certain location?
  3. How do the books and tv show differ in terms of character locations?

1. **Data.** From where and how are you collecting your data? If appropriate, provide a link to your data sources.

There are several other Game of Thrones visualizations available on the internet, so the first place we will look for data is these existing visualizations. We will either ask the creator how they collected data or (if applicable) ask permission to use their raw data (cited in full of course).

Our second option will be to write a python program to scrape web sites such as (<http://awoiaf.westeros.org/>) and (<http://towerofthehand.com/>). Since neither of us have any experience with web scraping or python, our expectations may need to be altered to reflect the data we’re able to gather.

The third option is the simplest, but also most time consuming, manually culling data from both show and books by rewatching and rereading. We can also manually catalogue data from the above websites in CSV files.

1. **Data Processing.** Do you expect to do substantial data cleanup? What quantities do you plan to derive from your data? How will data processing be implemented?

The answer to this question is highly dependent on the method chosen from question 3. Assuming that we will be scraping our own data, I don’t think we’ll have to do a large amount of data cleanup, but there will be quite a bit of processing involved. Javascript will be used to implement the data processing we will have to do. From the character location and time data, we will have to calculate the percentage of time spent at each location. The quantities we will need to derive are on a per character basis;

* 1. Physical location: Calculated from string data
  2. Location at a given time: Time scale calculated from chapter/episode index
  3. Total amount of time spent at each location: Time and location will be normalized by chapter/episode index

1. **Visualization.** How will you display your data? Provide some general ideas that you have for the visualization design. Include sketches of your design.

The sketches for the design are located in the PDF file “Initial Project Proposal Sketch”. Because the visualization is trying to answer location based questions, the basis for the main portion of the visualization will be a map of Westeros and Essos. The map will be divided into the major regions of the book. There will be a menu on the page that allows the user to select characters and timeline. As a user selects a character and time point, the regions will populate with symbols representing the character. As the time slider is progressed, more symbols will populate the map as characters move. The symbols will encode what percentage of time the character spends in a certain location. To provide more detailed information on region specific time percentage, when characters are selected, a bar graph will also appear that encodes the percentage of time that is spent in each regions.

1. **Must-Have Features.** These are features without which you would consider your project to be a failure.

The most critical aspect of our visualization will be the movement of each node to specific locations at specific times across a fictional map. Because it is a fictional location, we cannot use d3 geoscaling. This feature encompasses all of our must have features: we must be able to align the movements of characters to a time scale which is not explicit in either book series or television show. We will also need to assign physical locations to string data gathered from the book/show.

The next important feature of our visualization will be the deep dive into character location. When you click a character, there will be a graph detailing the percentage of time the character has spent in each region.

The third must have feature will be the ability to show multiple characters at once in both the map visualization as well as detailed view. We will select a group of the most important characters to begin our visualization with. If we are able to implement data scraping, we will be able to include a larger number of characters.

1. **Optional Features.** Those features which you consider would be nice to have, but not critical.

One optional feature will be the character path. The path would represent the route the character travels. Because travel is never by air, the route each character takes between locations will not be straight, so we will attempt to move (or create the illusion) characters non-linearly between locations.

A second optional feature would be to compare the book series to the television series. This would require a sync of timelines, since one episode of the show covers a variable number of chapters in the book. It would also require displaying two sets of data on the graph at once.

A third optional feature would be to include additional data about each character. For example, how old the characters are or if the characters are alive.

1. **Project Schedule.** Make sure that you plan your work so that you can avoid a big rush right before the final project deadline, and delegate different modules and responsibilities among your team members. Write this in terms of weekly deadlines.

**April 3rd:** Project Proposal Due

**April 5th – April 11th:**

* Data: (Max)
  + Gather data source
  + Format data source
* Map: (Marissa)
  + Acquire map
  + Specify map regions
  + Map regions to specific SVG locations
* Visualization: (Marissa)
  + Set up data visualization elements
    - SVG 1: Map
    - SVG 2: Selections / Options
      * Slider
        + TV slider
        + Book Slider
      * Book and television buttons
      * Groups of character buttons
      * Character expansion on selection
    - SVG 3: Bar Chart

**April 12th – April 18th:**

* Data Wrangling: (Max and Marissa)
  + Input 1: Specific Character
  + Input 2: Time Location
  + Output: Location & Percentage of Time

**April 17th:** Milestone 1

**April 19th – April 25th:**

* Interactivity:
  + Movement of Slider (Marissa)
    - Addition / Subtraction of Map Symbols
    - Update of data corresponding to each map symbol
    - Update of bar chart with data
  + Check/Uncheck Character (Max)
    - Addition / Subtraction of Map Symbols
    - Update of data corresponding to each map symbol
    - Addition / Removal of Bar Chart
  + Meeting with TFs

**April 26th – May 5th :**

* Interactivity:
  + Check/Uncheck Book / TV Buttons (Marissa and Max)
    - Merging / Separation of Map Symbols
    - Update of data corresponding to each map symbol
    - Addition / Removal of Second Series to Bar Chart

**May 5th:** Final Project Due