**Olympics History:**

**A Data Visualization Application**



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# Summary

On May 12, 2014, Team Thundercats presented our final project for CS235. Our web application uses varying data visualization tools to provide insight into the history of the summer Olympics.

This document provides a brief description of our application including its key features, a source code overview, our presentation methodology as well as a discussion and comparison of five design patterns that were shared between our mobile and web applications.

# Application Overview[[1]](#footnote-1)

It is common for a person to have multiple daily calendars stored on different, disconnected platforms. Managing and visualizing these disparate calendars can be cumbersome and difficult. Our application simplifies this otherwise burdensome task by integrating all of a user’s different calendars into a unified platform where a user can visualize and modify all of his/her calendars through a single, cohesive interface.

In addition to scheduled meetings and appointments, an individual usually must also complete a set of tasks, chores, errands, etc. Our application also integrates the ability to create and manage a user’s tasks in the form of an advanced “to-do list”.

By incorporating into a single platform an individual’s calendar with the tasks s/he must perform, a user is able to easily visualize and prioritize all of his/her daily activities. Therefore, our applications’ integrated approach helps prevent the inefficiencies and issues (e.g. belated completion of tasks) associated with what for most is an unstructured system to daily activity management.

# Application Users

The potential user base for our Olympics history application is very broad. It is intended to cover any user who is interested to know more about the summer Olympics including how different factors have affected medal totals including population size, economics, geopolitics, host city, etc.

# Prototype Presentation

Similar to the approach we used with our web application, our mobile application presentation only had a very small number of slides. A slide-focused presentation can quickly cause the audience to lose interest and/or become distracted. It was our position that a very short presentation followed by a longer demonstration would be more engaging and informative to the audience. Given the very positive feedback we received from both Professor Mak and the class after our web application demo, we saw no need to change our approach for this presentation. Overall, we felt the mobile application presentation was successful and engaged the audience. Our PowerPoint presentation, named “CS235 - Assignment #4 - Mobile Prototype.pptx”, is included with this submission.

We received three specific points of feedback during our presentation. They are summarized below with our comments:

* **Displaying the Current Year:** In our main calendar view, we do not display the year. In one of our earlier versions, we had been displaying the year, but it made the calendar appear too cluttered so we removed it. We understand the user’s desire to see the year, but in the absence of more data from usability testing, we still feel that our decision to leave it off is the right one. However, we agree that the year number should be displayed when the calendar is displaying a month not from the current year. While not implemented in our prototype, we described in our presentation the methodology we would have used which would be to shorten the month’s name to an abbreviation and then display the year with it (e.g. “January 2016” would be shortened to “Jan 2016”).
* **Pressing and Holding on a Date Bringing Up the Appointment Editor:** One user mentioned that if he were to double click or “press and hold” on a date that our application should bring up the appointment creation panel. Our web application demo had this feature, and it was an oversight on our part not including a similar one in this design. While we have a feature that can do a similar thing by clicking on the date then clicking on the appointment creation button, we should have simplified the process to improve the user overall experience.
* **Text Size:** Professor Mak mentioned that when displayed on the projector, the text size appeared small. David explained that this is more an artifact of a deliberately reduced resolution to make the entire simulator window fit on the display. Since none of us have paid the Apple annual subscription fee for developer mode, we are not able to load it on to a phone to verify or otherwise disprove the feedback. Hence, while we acknowledge Professor Mak’s critical viewpoint, we are not able to speak more conclusively on it at this time.

# Design Patterns

Design patterns provide solutions to often encountered software challenges; they serve as best practices that have been refined through proven design experience. In this section, we describe five of the design patterns that were incorporated into our mobile application. Note that this list is not intended to be exhaustive; rather, we selected the same five design patterns from the web application’s report. While not specifically requested in the report requirements, we felt it made for a more insightful and interesting report if we compared and contrasted how we implemented the patterns in the web space versus the mobile space.

## Inlay List Design Pattern

# Source Code Review and Running the Application

Our application is based off three primary components. They are described below. To give the application an increased feeling of realism, we populated the menus as if it were a full blown application. However, only of a subset of the links take the user to actual pages. For a list of the application’s working pages, kindly see the section entitled “Data Visualizations” where each subsection corresponds to a page on our site.

**Website Template** – Our application adapted an existing HTML5 template[[2]](#footnote-2). We selected this template because it had a professional appearance and because it made effective use of multiple web design patterns including:

**Carousel** – On the front page, there is a carousel of iconic Olympic images. Most users (in particular those who are already have some knowledge about the Olympics) will recognize that many of these images came from multiple Olympics games, as far back as 1936. This recognition will help solidify in users’ minds that this site relationship between history and Olympics in this application.

**Escape Hatch** – In the upper left corner of each page is our application’s “Olympics History” logo (see figure 1). By clicking on the logo, the user is returned to our application’s home page. This approach allows users to feel free to explore each page with reduced fear of not being able to return.



Figure – Olympics History Logo

**Tableau** – Our application adapted an existing HTML5 template. We selected this template because it had a professional appearance and because it made effective use of multiple web design patterns including:

**Github** – Throughout the semester, Team Thundercats used Github as our revision control repository. One of Github’s lesser known features is that built into every Github repository is a free web server. To run our application, we recommend that you access our Github page directly. The application’s home page is below.

# Data Sources

Multiple different data sources were used to generate the different data visualizations included with our applications. Below is a list of the data sources we used; included with each is a reference to the data visualization where the data set was used:

1. **United States’ Olympic Medals Won by Games**
   1. **Description:** This dataset lists the number of gold, silver, and bronze medals won by the United States at each summer Olympic Games.
   2. **Data Source:** <http://www.olympic.org/united-states-of-america>
   3. **Data Visualizations:**
2. **China’s Olympic Medals Won by Games**
   1. **Description:** This dataset lists the number of gold, silver, and bronze medals won by the People’s Republic of China at each summer Olympic Games.
   2. **Data Source:** <http://www.olympic.org/people-s-republic-of-china>
   3. **Data Visualization:**
3. **The Soviet Unions’ Olympic Medals Won by Games**
   1. **Description:** This dataset lists the number of gold, silver, and bronze medals won by the Soviet Union at each summer Olympic Games.
   2. **Data Source:** <http://www.pbs.org/redfiles/sports/stry/medals.htm>
   3. **Data Visualizations:**
4. **The Russian Federation’s Olympic Medals Won by Games**
   1. **Description:** This dataset lists the number of gold, silver, and bronze medals won by the Russian Federation at each summer Olympic Games.
   2. **Data Source:** <http://www.olympic.org/russian-federation>
   3. **Data Visualizations:**
5. **Germany’s Olympic Medals Won by Games**
   1. **Description:** This dataset lists the number of gold, silver, and bronze medals won by Germany at each summer Olympic Games.
   2. **Data Source:** <http://www.olympic.org/germany>
   3. **Data Visualizations:**
6. **Total Medals by GDP**
   1. **Description:** This dataset quantifies the relationship between a nation’s economic output (measured as GDP – Gross Domestic Product) and the number of medals it won at the 2012 London Olympics.
   2. **Data Source:** <http://www.medalspercapita.com/#medals-by-gdp:2012>
   3. **Data Visualizations:**
7. **Total Medals Per Capita**
   1. **Description:** This dataset quantifies the relationship between a nation’s population and the number of medals it won at the 2012 London Olympics.
   2. **Data Source:** <http://www.medalspercapita.com/#medals-per-capita:2012>
   3. **Data Visualizations:**
8. **Olympic Events by Games**
   1. **Description:** This dataset provides a table enumerating the events each summer Olympics. Note that we excluded the 1906 Intercalated Games since that is no longer considered an official Olympic Games by the International Olympic Committee (IOC).
   2. **Data Source:** <http://en.wikipedia.org/wiki/Olympic_sports>
   3. **Data Visualization:**
9. **Summer Olympic Games Host Cities**
   1. **Description:** This dataset provides a list of host cities for each of the summer Olympic games.
   2. **Data Source:** <http://www.olympic.org/olympic-games>
   3. **Data Visualization:**
10. **Athletes Attending the London 2012 Olympics by Country**
    1. **Description:** This dataset provides a list of host cities for each of the summer Olympic games.
    2. **Data Source:** <http://en.wikipedia.org/wiki/2012_Summer_Olympics>
    3. **Data Visualization:**
11. **All Time Olympic Medal Totals by Country**
    1. **Description:** This dataset provides a table listing the number of summer Olympics medals won by each country.
    2. **Data Source:** <http://www.olympic.it/english/medal/id_summer.htm>
    3. **Data Visualization:**
12. **Olympic Medals Won by Michael Phelps**
    1. **Description:** This dataset provides a list of the Olympic medals won by athlete Michael Phelps at each of the summer Olympics at which he competed.
    2. **Data Source:** <http://www.olympic.org/michael-phelps>
    3. **Data Visualization:**

# Webpage Text

Since this project is intended to be a user interface design course’s culminating experience, we did not consider that it would be necessary much less important to write original text for each of the application’s pages. Rather, the vast majority of the text on our application’s pages is merely a tool to lend realism and context to the application. As such, other than the headlines for each of the pages and the graph titles, none of the text in our application is original. It was all sourced from different web pages we found.

The section entitled “List of Webpage Text References” includes different pages we took content from. Any pages missing in this list is an oversight on our part since we acknowledge that all of the text content (excluding the previous mentioned exceptions) is not original.

# Data Visualizations

## Effect of Geopolitics on Olympic Medal Wins – Charting the Rise and Fall of Superpowers

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/geopolitics.html>

## Dollars for Medals – Relation between a Nation’s GDP and the Number of Medals Won at the London 2012 Olympics

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/economics.html>

## Quantifying the Most and Least Athletic Countries – Country Population Per Medal at the London 2012 Olympic Games

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/population.html>

## Growth in the Number of Olympic Events

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/events.html>

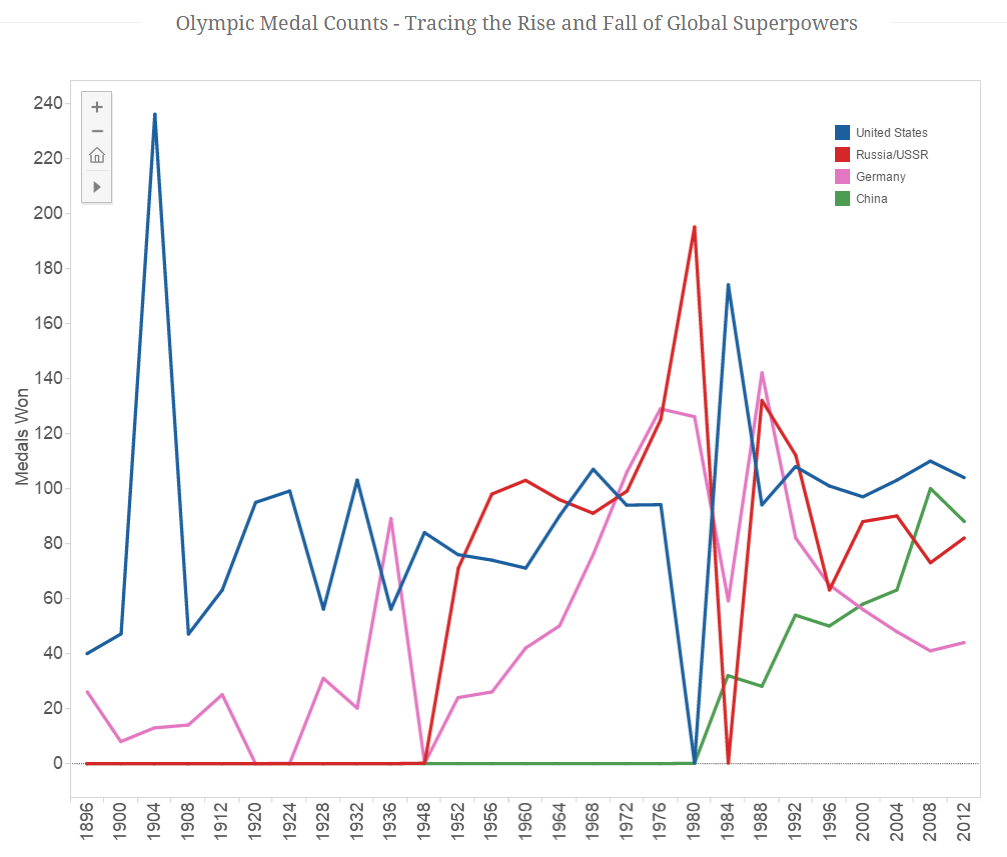


Figure – Olympics History Logo

Chapter 5 of the Olympics Charter states, “No kind of demonstration or political, religious or racial propaganda is permitted in the Olympic areas”

## Summer Olympic Games Host Cities

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/previous_games.html>

## Athletes Attending the 2012 London Olympics by Country

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/previous_games.html>

## Total Summer Olympic Medal Wins

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/country_profiles.html>

## United States Medal Wins – A Home Advantage

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/united_states.html>

## If Michael Phelps were a Country

**Web Page Address:** <http://rawgit.com/ZaydH/CS235/master/Final_Project/michaelphelps.html>

# List of Webpage Text References

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1. The “Application Overview” section is very similar to the text in our web application final report. Since the two applications are intended to have been developed theoretically by the same company targeting a single market and user base, we did not see that it made logical sense to have meaningfully different overviews. [↑](#footnote-ref-1)
2. For a link to the template, please see: <http://themeforest.net/item/alexx-multipurpose-html5-theme/3370259> [↑](#footnote-ref-2)