Phase III Report

Repo Link: https://github.com/laivictor/EE461L-Team-Project

Team Information (full name, email, github username):
- Victor Lai, laivictor2718@gmail.com, laivictor
- Christopher Acosta, chris.acosta@utexas.edu, chris-acosta
- Manuel Avalos, manuelavalos@utexas.edu, manuelavalos7
- Nimay Kumar, kumar.nimay@utexas.edu, NimayRKumar
- David Lok, jdl3687@utexas.edu, jdl3687
- Eduardo Ruiz, esruiz39@utexas.edu, EsaZul

Canvas Group: afternoon-4
Project Name: Olympics
Models: Countries, Events, Host Cities

Introduction/Motivation

Our project for this semester will be focused around the modern Olympics. This was not the first idea that came to mind. During our first meeting, we initially had plans to create a centralized website that had past censuses for the United States. However, even though it would be straightforward, it was uninspiring. We then came up with a topic that would feel more engaging, sports. We figured the best way to collect data was through a centralized system of some sort, like an organization or an award system. So we decided on the olympics where players from all different countries compete for the same awards. We were interested in the knowledge we could gain from collecting data about winning athletes and how their wins/losses relate to the country they are from or how it relates to where the games are held.

Developer User Stories

As an Olympic venue planner, I want to see all of the cities that the Olympics have already been held so that I can plan and organize future games.

Future organizers can take into account where the Olympics have been held. They can decide which cities they've hosted and notice the trends such as attendance, revenue, etc depending on geographical locations in order to create another successful event. We projected and required two hours in order to collect and display the data.

Estimated time: 2 hours
Actual time: 3 hours

As an Olympic fan, I want to see past Olympic winners by country so that I can make predictions about which countries will most likely attend this year.

Providing a record of the countries that have attended gives a good assumption on who is projected to make a return. Thus, a nation's citizens and fans would more likely attend. To collect the data would have taken an hour, but resulted in needing at least two hours.

Estimated time: 1 hour
Actual time: 2 hours

As a historian, I want to sort the Olympics by date so that I can see the growth of the event.

There have been many Olympics in the past, thus, by providing the history of it, we can acknowledge the past and compare it with the present. This allows for more data and the ability to create more instances. This was projected to take three hours and rightfully so.

Estimated time: 3 hours
Actual time: 3 hours

As a swimmer, I want to see current Olympic records so I can see how far off I am from the greatest athletes.

There are many sports within the Olympics and some have their own specific events. In each sport/event, they have their own world records. These records are part of history and are there to inspire upcoming talent. These serve as a basis on how far you are from being the best. This was projected to take an hour due to the thought it would be in the same place, however, it took an extra hour to correctly put it in the right place.

Estimated time: 1 hour
Actual time: 2 hours

As a sports marketer, I want to easily see winning athletes and events so I make advertising plans and sponsorship deals

Potential sponsors can view athlete stats to pave the way for financial gains. Individuals can earn brand deals and sponsorships depending on how well they perform. This then advertises those who sponsored them creating a mutual financial relationship.

Estimated time: 2 hours
Actual time: 3 hours

As a fan, I want to see a photo of each of some top-performing athletes to associate a name with a face.

As athletes win more medals, they become more recognizable to the public. Their name spreads through news, social media, and Olympic history. Thus, putting a photo to the famous name will do justice for the athlete as well as providing fans an accurate representation of the athlete. This will allow fans to further research the athlete in past events and the journey they had to get to the Olympics.

Estimated time: 2 hours
Actual time: 3 hours

As a summer olympic fan I want to sort the olympic hosts to see the summer olympic hosts first.

This gives the user the option and freedom to mess with our webpage to accommodate their preference. This is to allow an easier navigation for the fan as well as keep the webpage sorted.

Estimated time: 2 hours
Actual time: 1 hours

As someone browsing the internet, I want to be able to navigate between pages easily so I can quickly swap between areas of interest.

Any webpage's focus is to provide information while also keeping their visitors on their page as long as they want, not because they cannot handle the webpage's structure. Thus, adding a search bar, navigation bar, and a pagination structure to allow people to find what they are looking for quicker and easier while adding functionality to the webpage at the same time.

Estimated time: 2 hours
Actual time: 3 hours

As an athlete, I want to see what events are available for each sport so I can pick a couple to focus on.

The goal of any athlete is to be able to compete at a high level at their desired sport. However, they have many options to choose from. If a swimmer, you need to know whether you have the stamina for a specific meter race and the talent for a specific swimming stroke. Providing a list of each available sport as well as their subsections can really narrow their choices.

Estimated time: 2 hours
Actual time: 2 hours

As a prospective fan, I want to see pictures of people playing each sport so I can decide if it seems interesting to me.

Seeing is believing, thus how can you know if you like something if you do not see what the sport does. A picture is a thousand words, thus it will entice the fan to see if they think that a specific sport sparks their interest. This leads to more interest in the sport, more fans for the Olympics, and more recognition to the athletes that participate in that sport.

Estimated time: 2 hours
Actual time: 2 hours

As salesman, I want to easily see winning athletes and events so I make advertising plans and sponsorship deals

Choosing the most successful athlete gives sponsors a better chance to get their money's worth. An athlete's success in the Olympics is measured by their medals. Thus, displaying their medals and easily sorting them will display the best athletes to sponsor depending on their sport.

Estimated time: 2 hours
Actual time: 3 hours

As a newbie, I would like to see an introduction to each sport to better understand the sports offered.

Not everyone knows about sports nor do not know where to start. If they know about theOlympics, then they at least know that it is a competition of the utmost quality where athletes all over the world compete. However, people may not know what sports or events are available nor the slightest clue what the purpose of it is. Thus, a description would solve the most basic questions and give leeway for the newbie to continue their research if they are interested to do so.

Estimated time: 1 hour
Actual time: 1 hour

As a citizen, I want to be able to easily search for my own country to see how well it has performed

Nationality is one of the most critical factors when it comes to the support of a fan. Thus, in order to determine the success of one's own nation, they wish to easily find the progress made by their country or rival countries for comparisons

Estimated time: 1 hour
Actual time: 2 hours

As a curious kid, I want to sort the host cities by the number of athletes that participated to see how the Olympics has been growing

Although most people look at who is the best of each sport, not many think about the overall participants in the entirety of the Olympics. People often care about the final results and do not track events leading up to the Olympics. By sorting through the host cities, one can see whether the participants have increased or decreased overall. This could be due to the amount of athletes being accepted in a qualifier round per say. The more athletes, the more competition there will be and signal the growth of the event.

Estimated time: 2 hours
Actual time: 1 hour

As a visitor, I want a visually appealing home page so I can browse with more comfort

It will be a lie to say appearances do not matter. It is often the deciding factor when it comes to first impressions and the overall judgement of some object. Thus is the case when it comes to a new website you have never seen before. It is our goal to grab your attention and keep you on our website as a reliable source for the Olympics.

Estimated time: 1 hours
Actual time: 2 hours

As a fan, I want to see the breakdown of gold, silver, and bronze medals for each country in each game to see how many gold medals each country received.

When someone thinks of the Olympics, they wonder about the medals and who received what. In order to satisfy that, we established the separation of the medals by country in order to display and answer that question.

Estimated time: 2 hours
Actual time: 3 hours

Customer User Stories

As a coach, I want to compare athlete data between the summer and winter seasons so I can train upcoming players better.

The Olympics are divided between summer and winter events. Each seasonal event is hosted 2 years between one another periodically. Thus, athletes can specialize in what season and event they want to participate in. This allows for data to be collected and formatted making it easier to find as a user by simply going to the event you are looking for or by searching for a specific athlete. This was projected to take an hour.

Estimated time: 1 hour
Actual time: 3 hours

As a user, I want to see athletes' names so I can see if I recognize anyone.

Participating in the Olympics is a high honor for any athlete. People respect them and go as far as to idolize athletes as heroes. Given the opportunity to display each participant's name, nationality, and sport would allow people to cheer on their role models! This was projected to take an hour to collect athletes' names based on the event they participate in.

Estimated time: 1 hour
Actual time: 2 hours

As an analyst, I want to see countries' progression over time so I know who to root for in the near future.

Analysts rely on data gathered provided by athletes and the events they have won. If an analyst notices that a specific country produces good runners for the track events, they would then relay that data by suggesting track athletes go train in that specific country due to their success.

Estimated time: 3 hours
Actual time: 3 hours

As a potential bidding country, I want to see all of the past Olympic hosts, so I can see when my country has hosted the games before.

Hosting the Olympics provides a ton of attention and attracts a huge influx of tourists from all over the world, which in turn boosts the economy of the host country. In order to host, countries must enter a bidding process.

Estimated time: 3 hours
Actual time: 3 hours

As someone who is patriotic, I want to see how many medals my country has won, so I can take pride in my fellow countrymen's hard work.

Any competition is bound to have rivalries. Within those rivalries come a sense of patriotism. People want to be better than others, and there is no other feeling knowing that your home, your country, is proven to be the best. There is no better way to prove that then during the Olympics, where one athlete represents a whole nation, and that whole nation depends and supports that one athlete. This feature took around 3 hours to implement, as the awards data was nestled in the process of scraping from websites.

Estimated time: 1 hr
Actual time: 3 hrs

As a prospective spectator, I want to see future events, so I can decide what interests me ahead of time.

It is useful to see all the future planned Olympics side-by-side to be able to decide which event to plan for. For example, a user may change their mind about going to Tokyo 2020 when they see that LA 2028 is one of the future events.

Estimated time: 2 hours
Actual time: 1 hour

As a geography major, I want to see the breakdown of medals won by countries grouped together by continent to see how they compare within their region

There is always history and knowledge to gain from anything. For educational purposes, a geography major may find interest in grouping regions to find which location has had the most success from the Olympics through the medals. This information can lead to discussions and research to see how people are biologically built in certain locations and whether that regions' diet has an effect towards that region's success internationally.

Estimated time: 2 hours
Actual time: 3 hours

As a citizen, I would like to see when a particular country started participating in the games so I can reflect on my country's history

People are curious to see how anything begins. By providing that information to someone using our website, they can see when a country first began their Olympic history or when they first started having success in winning medals. They can then use this information to further make connections on a country's history. An example could be how the separation of Germany back then has impacted their Olympic initial history and then later reemerging.

Estimated time: 1 hour
Actual time: 1 hour

As a visual person, I would like to see a world map of all the countries that have medalists to have a different perspective on how well countries do.

Any person can read information and statistics off a website, but how long does that take. Does the user retain that information when there is other information surrounding it? These questions can be solved by providing a visual representation to depict the success

of a country. Furthermore, it will give a small geography lesson to people who sometimes did not know a specific country even existed, thus promoting world/social awareness and furthering the success of the Olympics in general.

Estimated time: 3 hours
Actual time: 3 hours

As a fan, I want to see the top ten performing countries at any particular Olympics to see which countries did the best.

Anyone is curious to see who is at the top internationally. Who is the best overall and the most athletic. Bragging rights are reserved for those who are fans, competitors, and investors. Giving a list of the top ten feeds this curiosity and provides critical information to those who are looking for the best in the world.

Estimated time: 1 hour
Actual time: 1 hour

Design

When it comes to any website, users want the information they are looking for as fast as possible. In order to avoid complicated designs and ensure compatibility between our systems, we decided to use Python. A user requests web pages via url where the Flask app is listening and the Flask app responds to these requests by using templates and changing the template based on the request. The design of our website is based on three models and its subcategories. To effectively cover all possible topics of the Olympics, we chose sports/events, venues, and countries. This allows us to search by location, sports, history, people, census-related data, and awards. Once the layout was figured out, the implementation step was next.

Use Case Diagram
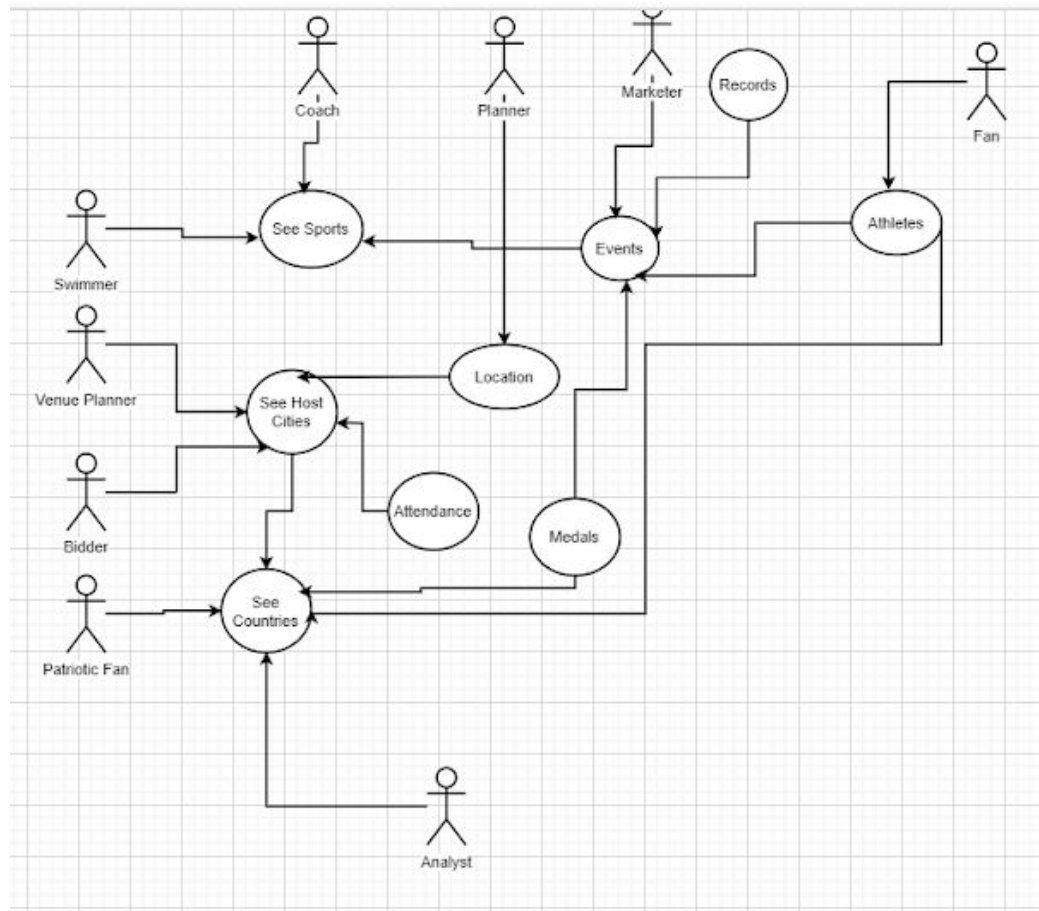
Sequence Diagram
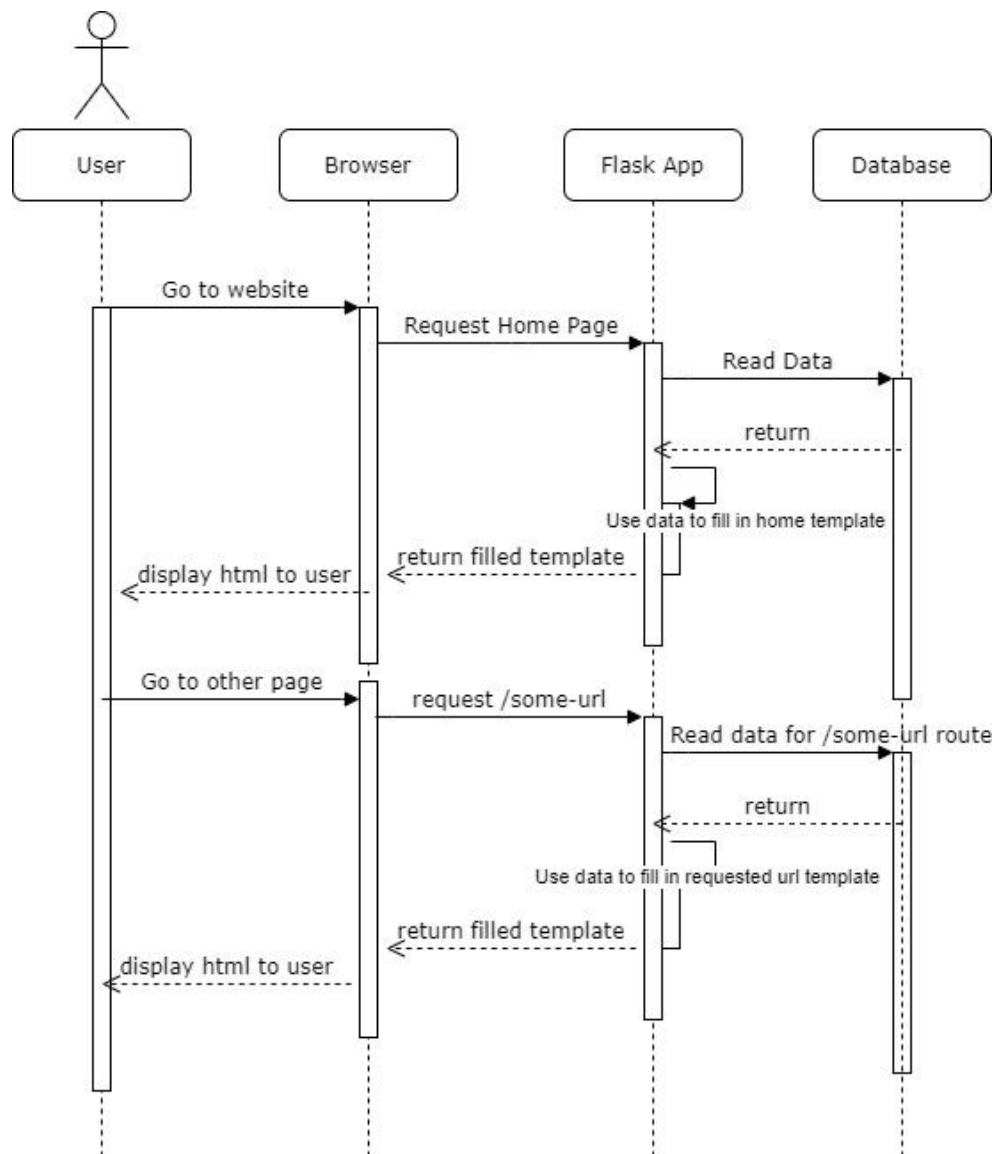
We knew that the website would be dynamic and up to date as time passes on. Thus, we scraped data off from websites and based our html files on the information we gathered. For example, in the sports category, we scraped all the sports from the Olympics official website to give us the current events offered. We then created new html files with each sport name and routed them in our main to make sure they are up and running. We then implemented pagination and a navigation bar in order to traverse through each webpage efficiently. This leads to easy interactivity between the models and the data, with a user friendly interface. Furthermore, we added user interaction such as filtering, searching, and sorting in order to quickly provide the information a user is looking for.

Testing

With most of our members limited with their knowledge of python, we had our fair share of testing. At first, we used simple notepad files to implement the skeleton of webpages and frontend implementations. Then, when we got adjusted to Python, we used Visual Studio to test our backend implementations. Within the editor, we can debug each .py, .html, and .json file. When we scraped data, we had to take it step by step to verify that we were getting the correct data, then filtering the information we want, then sorting that data into correct tables to use in our code recursively. Basic syntax and runtime errors were easy to fix, but when it came to our data interacting with one another, we ran into a brick wall. First, we individually ran each file to verify functionality. Then we ran the code in our command line to host the website temporarily on our local machines. Then when it ran to our satisfaction, we then uploaded it to our google web application. From here on, we repeat the process when we implement a new feature or design. With Phase II, we implemented unit tests in order to test the data that was collected. When scraping data, we need to confirm that the data collected is accurate and was successfully accumulated. We also tested that our Github information was collected successfully by checking commits and issues. This reliably checks our information rather than simple debugging as it gives you an accurate report of what is present depending on what you are specifying your tests to do. With Phase III, we refined the unit testing to accomodate more scenarios and find any bugs or predicaments that may arise when it comes to the finalization of our project. However, we did not stray away from doing our own print testing when debugging our code. Any testing done has been used for a purpose and the sole reason to find an error or assess an aspect of our code.

Models

Sports: Will include sports and specific events for those who have multiple categories within one sport. Naturally, each sport contains athletes and records. This gives us room to provide an image of each athlete, top best record/top 5 records, and charts displaying their health information and nationality

Host Cities: Show all past and future cities that hosted the Olympics along with associated stats for each Olympiad. A geographical map of the world could accurately pinpoint each city. It could also record the attendance population, that city's population, and specific geographical data.

Countries: Lists all countries that participated in the Olympics. This could be displayed through a list or a colored world map. In addition, we can add the flag/geographical shape of the country itself. Then, it could be ranked on the most successful countries by medals won overall.

Tools

Visual Code: Our main editor. We compiled, debugged, and edited our code. This also allowed us to easily see our files' hierarchy, where they're located, and has the accessibility to use the command line and instantly load the website into our local machine. The implementation of online live editing helped move this project to support online peer evaluation.

Scrapy: Our implementation to interact with our RESTful API. Scrapes the data off the website to make it our own. This allows us to create json files which we can then parse, filter, sort, and use.

MongDB: Most of our initial data was stored in json files but will be using MongoDB to store most of our data. This allows us to free up the main program from unnecessary files.

Unit Tests: Tests the data we collected and verified its presence and accuracy. Neatly organizes what we collected and sorts out what passed and failed.

Reflection

Our team had a rough start like all other teams. We hardly knew each other, we did not know each other's name, and constantly had schedule conflicts. However, as time passed on, we learned each other's strengths and weaknesses. As a group, we believe that we communicated effectively with one another through Slack. We were also responsible for uploading our data to our community hubs such as Github and Google Drive in order for all of us to have access to our group's documents. When we started coding, by pair programming, we caught each other's flaws and researched our topics thoroughly. However, we do have our fields that need improving. The larger the group, the more complicated it is to find a way to all meet up. Some have work, other projects, exams, and personal matters to attend to. Given our recent meetings, we believe that weekends are our most efficient meet up times to discuss what we did, where we are at, and what the next step is. Surprisingly, there were some areas of the projects we had confusion in and had to rely on outside group members. This opened our eyes that we haven't researched the project outline thoroughly so we took our time to cover all our bases again. Overall, dealing with multiple people is difficult, but not impossible. Once we overcome our schedule conflicts and limited knowledge on specific areas, we will proceed with our project without obstacles and make it as efficient and elegantly as possible. Due to the current COVID-19 pandemic and UT transferring to online classes as a result, there have been complications with the project and

communication. We have been updated through piazza and announcements, but online is different than in person. Not only is a class that is supposed to be taught in person to thoroughly learn the subject is now online, it removes a lot of on hand learning. The fact that we can no longer meet our group in person presents another issue. It limits the pair programming, the number of bugs we can catch together, and efficiency to stay on track of where everyone is at. Hopefully we can figure out online meetings and pair programming substitutes to ensure the completion of our project. The decision to program this project with Python provided some limitations at first, but with time, we got better at managing the requirements for each phase and efficiently constructed our website. However, at the beginning of each phase, we are met with new limitations, such as MongoDB, and how they interact with python to meet our current needs. Thorough research is needed, which divides our time even more. We have managed so far, but we do believe that with enough time, we will still make a website that we are satisfied with despite the limitations of COVID-19.