Project Proposal - CSCI 331:
Object Oriented Software Development – Spring 2023

Name of Project	Game Selection Assistant
Team Name	WEM Productions
Team Members	Emails
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1. Project Description

For the large number of people that have a hobby of gaming, but don't have a significant amount of time to engage in it - or have the time to search through their library for what to play next, some sort of organizational tool could be in order.

We intend to build an online library of games, representing a user's collection, that they can use to determine what they wish to play next; it will allow for sorting by genre or style, and will use an API to get the playtime off of sites like HowLongToBeat to order them by how much of a time investment completing them is, allowing users to robustly and easily choose games from their libraries to play.

2. Value

The program will have value for any number of gaming hobbyists that have limited time, or any who are looking to choose from a wide library of games available to them. While not a majorly pressing issue societally, it will be a potentially useful tool for a great many people.

If it does not work as intended, there are few risks — aside from a bad grade for the project within the course — as the program, while useful, will not be dealing with sensitive or truly important information.

The difficulties surrounding the project are related to the team's relative lack of knowledge regarding databases and limited prior experience with similar software. This will be mitigated as the course and project progress, as the team will continue to gain knowledge both through course content and through experimentation and research on the system we intend to design.

3. Deliverables

The final product should function as an organizable library of video games that a user has in their collection. The primary function will be to view, compare and organize the library by how long it takes to beat different games in the pursuit of helping users find games they wish to play, with the secondary functions of organizing the library by predefined genres or styles to narrow down the list to desired options.

4. Development Roadmap

1. Implement site framework:
   This includes basic code structures for all major functions (function outlines, return types, etc.) for the library itself — such as adding, removing, and organizing games. This will be done by: March 8th 2023.

2. Implement outline for web scraping functionality:
   This includes basic code structures for the HowToBeat and similar site web scraper functions. Ideally, it should take approximately two hours. This will be done by: March 15th 2023.

3. Implement proper site UI:
   Developing and implementing UI elements for users and developers to interact with to allow for proper use of site functions. Ideally, it should take six hours to create and implement UI elements. This will be done by: March 22nd 2023.

4. Completing site functions
   Implementing major functions based on previous frameworks, with any needed alterations. These functions include adding, removing, and organizing games. This will be done by: March 27th 2023.

5. Completing webscraper functions
   Implementing the web scrapers based on previous frameworks, with any needed alterations. These functions include gathering data from external sites, and allowing customization on what to find based on input parameters. This will be done by: March 31st 2023.

6. Late-Stage Debugging
   Final comb-through of optimization and debugging of non-critical issues within the system. Should take approximately five hours.
   This will be done by: April 4th 2023.

7. Presentation Preparations
   Preparations for presenting the completed product, including a presentation outline, possible presentation slides or scripts, or functional demonstration.
   This will be done by: April 7th 2023.

5. Estimated Total Work

- Implement site framework: 6h
- Implement outline for web scraping functionality: 2h
- Implement proper site UI: 6h
- Completing site functions: 6h
- Completing webscraper functions: 6h
- Late-Stage Debugging: 5h
- Presentation Preparations: 5h

- Total: 36h

6. Maintenance and Upgrade Plans

We do not require any budget, as there are no plans to maintain this project beyond our time in the course.

However, if we were to do so, we would need to move the code base onto a new server so we could continue hosting the website and to continually update the web scraping implementation to stay up to date with the current versions of the outside websites we scrape info from, such as HowLongtoBeat.com or GameTDB.

7. Relevant Experience

I, William Plummer, have experience using the websites we aim to implement in our project as well as experience developing xml reading software in the python programming language, which should transfer over to web scraping in that same language in some small way.

I, Marcus L, have experience with a number of programming languages, including a limited amount of knowledge of Python,

I, Ethan Bryson, have experience using REST APIs, creating client / server programs with games and previous experience in Python.

8. Additional Information