GPM Jammers

Milestone 1

January 31, 2024

Cpt_S 322

The following is our submission for Milestone 1. This document outlines the key tools, technologies, skills, and the process model we will depend on for the development of our course project, a website to be utilized by the Game Development Club at WSU.

Tools/Technologies:

Version Control (GitHub):

Our team is using GitHub for our version control system. This is because of our team's familiarity with the software. GitHub lets users collaborate on code through the creation of branches. Each user may work on their own section of code, and then merge it into the main branch. This allows for easy collaboration and seamless code integration on programming projects and assignments. Furthermore, code and all its versions are stored in a remote server, such that the project can be accessed by any team member at any time.

Documentation (Google Docs):

Our team is using Google Docs for our documentation. This is because of its accessibility and ease of use - Google Docs provides instant access to documents from a web browser, without the need to download material. Additionally, its use as a documents editor allows for easy revising. When a user loads up the documentation, the newest version will always be provided.

Integrated Development Environment (VS Code):

Our team is using Visual Studio Code as its IDE of choice. VS Code supports external extensions, providing support for our 3 programming languages. VS Code also has built in support for Node.JS, which is what we will be using for our backend. Additionally, VS Code provides support for previewing HTML and CSS, allowing us to quickly view and edit the graphical interface of our project. VS Code will also preview the lines of code that have changed since the last commit, making our version control (git) easier to visualize. Finally, the robust file explorer of VS Code means it will be trivial to store the files for our project in appropriate locations that makes access easy for all members.

Database (MySQL):

We have decided to use MySQL for our database due to its numerous benefits. MySQL is a widely used open-source relational database management system that offers great performance and scalability. On top of this, it is extremely reliable. It also supports structured data storage, which allows for efficient management of user profiles, posts, and team information. MySQL also ensures data integrity through features like ACID compliance, making it dependable for handling user interactions and app-related data. Most importantly, its compatibility with various programming languages and frameworks makes it flexible in the development of web apps, making it easier for us to implement future ideas seamlessly.

Web-Hosting Service (AWS):

Building off the benefits of MySQL, we have decided to use Amazon Web Services (AWS) as our hosting service. AWS offers a very reliable and scalable infrastructure, meaning that our web app should remain online and respond quickly, even during peak times. The global network of data centers that AWS owns ensures low-latency access for everyone globally. Furthermore, AWS has amazing security features, including identity and access management tools, helping safeguard user data. The most important factor behind our selection is the availability of a "free tier". The AWS "free tier" allows us to kickstart our project without incurring any immediate costs.

Programming Languages:

Java Script:

We are choosing JavaScript as the language for our front-end programming because it is currently the most widely supported language for web browsers. It also integrates very well with HTML and CSS and will allow us to easily manipulate the Document Object Model (DOM) dynamically with the information handled and stored by the backend. We are not using TypeScript, as most of the team members do not know it, so it would be easier to use JavaScript. We are also using JavaScript for our backend, as opposed to Python, mainly to use a common language between the front end and the back end. This also allows us to use NodeJS to utilize various libraries which will help our site communicate between the front end, the back end, and the MySQL database stored with AWS.

CSS:

CSS will build off of HTML to create the look and feel of the website, in addition to organizing the website in a more user-friendly way. While a GUI for our

website is technically possible with just HTML, CSS will allow us much more flexibility, and much more freedom in how our website will look. We are choosing to use separate CSS documents as opposed to simply changing the style properties of the elements in HTML because this will allow for a cleaner file system that is easier to both work with and read.

HTML:

We are creating a website, and every website needs HTML as its backbone. This is what CSS will build off of, and where any information the user sees will be put. Even alternatives like XML are still compiled to HTML before it is shown to the user.

Skills:

Top-Down Design:

In order to create a website with multiple functionalities, each feature will need to be robust and modular. Creating systems that can operate both on their own and with each other requires careful planning and top down design. We must have the knowledge and planning skills required to design these systems prior to implementation.

Programming:

When developing a website such as this one, designing the systems is just as important as being able to competently implement them. Thus, each of our team members will need to be capable in working with the programming language required for their role. Our backend developers will need knowledge of MySQL and Java Script, while our frontend developers will need knowledge of CSS and HTML.

Process Model:

Prototyping Process Model:

Our group decided to utilize the prototyping process model outlined in class. We chose this evolutionary process model to help develop our product step by step, while keeping each step a functional product on its own. The key advantages of utilizing this will allow us to receive feedback from our client quickly to make adjustments to the design throughout development. It will also allow us to add and remove features as is necessary whilst ensuring none of these features impact the performance or functionality of the product at the end of each step. Going with this model means that features will be developed modularly, meaning it will be easy to continue to develop for the project in the future if need be.