

## **Maintenance**

The nature of our project has made maintenance straight-forward and relatively easy for the time being. Depending on future additions and added functionality, the costs of maintenance may increase. For the next year, the cost of maintenance will be free, because we are using github pages for a domain and server hosting. If we choose to get our own domain, we will be looking at a minimal yearly cost of \$5. If we choose to make the site into a more complex web app, with a user login system and maintenance of scores and other info, we would need to utilize an IaaS service or host the app on a server of our own. This could be done cheaply initially, since we don't expect a very large group of users initially. If the user base grew a lot, we would need a way to store a lot of user information for the cheapest price and have a way of accessing it when necessary. This could be done using AWS for and their S3 technology for storing and retrieving objects.

The aforementioned possible changes to our web app would drastically change the price of maintenance however, since right now it is free. This could still be done relatively cheaply depending on our architecture and how often the site is being accessed. With good design choices for the modifications and a small user base, we may not need to redeploy to an IaaS service for a long time. Once done, however, it makes sense for us to deploy the site using an EC2 instance and allow AWS to dynamically scale the number of servers based on the number of users. Any games played over the internet, like multiplayer-style games, would come with an entirely new set of design choices.

The maintenance of the currently existing application, would likely be done through periodic testing and bug fixes for cases not yet discovered. The testing we have done already appears to be sufficient, but more testing may reveal new issues. The idea of adding more games to the site is nice, but the modular nature of game additions that suited our team well, could also be utilized to streamline the game addition process, turning the site into a platform for registered users to create their own games using js and canvas. Depending on the type of art, this could also be done for photos, clips, and other media representing artwork. The maintenance of this feature would be far more complicated than anything on the site at the moment. This is because we would need to implement some form of upload system for games, code-parsing and checking for compatibility with our sites format, and we would need to learn more about these topics.

The cost for hiring developers that could slowly add these features over time would be far more than the cost of the entire project so far, since it has only included a domain, and possible IaaS utilization, making these features feasible, but not likely to be added quickly. The maintenance of the web app will likely be done mainly by the original group that created it, and any new features will be tested and verified by the same group.

If changes to javascript or browsers occur, causing a change in the platform, we may need to rewrite some code, but this is not likely since we conformed to ES6 standards, and canvas seems to be the preferred method of implementing custom images into a web page, since flash is no longer supported.