Abstract
As students part of Software Design and Development, the task of creating a piece of software was given that met our clients specific technical needs. The client was the Humans vs Zombies (HvZ) student group here on campus. They are a group that periodically hosts a campus wide event using their own online resources. Their request was that we provide a new, updated webclient. Their complication was that they needed to both update their web application and acquire a more maintainable version of their online service. The current system that is live now is 3 years old with code that is difficult to re-engineer. The focus of the project is to re-engineer, refactor and reimplement the current version and provide both a visual upgrade and a more organized system structure to the web application to further strengthen its reusability and maintainability.

Implementation
The programming languages being implemented include HTML, CSS, and JavaScript to create the structure and visual aspects of the web application and PHP and SQL to control and manipulate the data located on their system’s servers for the software system to be functional. We also implement a tool called BootStrap to help format and create functionality on the web application.

Pictured below is the current “Game Status” page of our clients website and as well as the new version. We are attempting to create an easy-to-interpreted structure within the internals of the software inorder to prepare for future evolution. To accomplish this, the system structure of the new web application has been designed to be modular and extensible. Various components of the system have been modularized to provide simple yet robust assembly across all aspects of the web application. For example, the navbar at the top of our page is being called from a file separate from html file this currently sits on. This way, making a change to the navbar file makes a change on every page it appears on.

New Version

Current Version

Current Features
Work is currently being done on the clients web application at the moment. After extensive analysis of the in situ application as currently displayed and operating and with progress happening quickly, these features are in place and live on the test site:

- Basic Website Layout Structure- the new web application has a template on the current design layout and can easily be added to and edited when more content is required. The new version provides documentation that explains the extensibility of the new software.
- Game Status Page- fully functional Game Status page that shows all previous games that VU HvZ has hosted as provided by there current data, along with listings of users who were Humans, Zombies, and Moderators of each game
- Rules Page- shows the complete rules and regulations that administer the HvZ games and players.

Future work
Recreation of all the features already hosted on the client’s current web application is required as well as adjustments to how the web application is visually presented and formatted as requested by our client.  
- Login- both normal users and moderators are able to login and register for games online. Moderators have the added priviledge to create and edit games and various details.
- Logging a “kill”- the web application has a texting service that provides game information that the software system can actively track to create working understanding of game progress.
- Infection Tree- a generated tree infographic is created by the software system in order to view the order of “infection” between users as the game progresses.

References