# Rapid Application Development (RAD)

Our team chose to use the Rapid Application Development model to tackle the requirements of this Assignment. This model was ideal since it allows for rapid development of a smaller project like ours, whereas the Spiral Process Model would have been more ideal for a larger project which involved continuous enhancements. RAD allowed us to have more flexibility during our web application design and implementation. For example, we were able to build a rapid prototype of the web application, however quick changes were needed consistently, to allow the application to continuously adapt to the requirements of the assignment. Since our team was made up of a mix of developers of varying experience, this agile method was perfect to allow each other to compliment the lacking experience in each area, whether that being during design and implementation of the website, or during the testing and documentation phase.

Since we needed to have this project completed in a short period of time, RAD was the perfect choice. Without the restrictive spiral model, we were able to have a working prototype of the web application completed within a few days. Since the requirements allowed for flexibility in the design and look of the application, we were able to continually implement more user friendliness to our web application with each update. It was very important for us to have an application that was adaptable to changes. The RAD model usually has less risk associated with it than the Spiral Model, and considering that this is an application to be used in the Health industry, low risk web application development was a must.

One of the other reasons we chose to use RAD, was because it allowed us to quickly have a visual aspect of the requirements needed. This visual representation allowed us to identify the flaws easier, resulting in less flaws that needed to be addressed with each porotype cycle.

# Rapid Application Development Phases

# Requirements Planning (Definition Stage)

First we analysed the requirements and was able to development a business model for this project. We identified what was the most vital and necessary information needed and made sure that a heavy focus was made. For instance, in an Accident & Emergency, the most important information to a patient would be how and when they would be cared for. We realized that it had to be made easily apparent to any guest using the website, and also for any authorized staff that needed to update that information.

We also continued to analyse the other requirements, making sure that they were clearly defined and understood amongst our team. It was vitally important that the goals were clearly evaluated, in order to have the most correct build of the first stage prototype. Although a prototype can be altered later, with Rapid Application Development, speed and accuracy are the defining attributes. The less errors that are apparent in the first stage of the prototype, the less time would be needed to have to fix them before addressing the actual, correct requirements.

# User Design (Design Stage)

During this stage is when we got the opportunity to take the defined requirements, and turn them into a visual display. Since realistically we were not able to meet with clients for this project, we all at some stage took on the roll as a client by sharing ideas with one idea and continuing to consistently improve the design. Our main focus was usability, mobile responsiveness and accuracy to requirements. It was at this stage that we continually tested and tweaked each design until we were able to settle on a design that best fit the requirements of the assignment. At the end, we believe that we came to the more satisfying design for this project.

# Rapid Construction (Development Stage)

During this stage we took the web application prototype and transformed it into a working model. Although at this stage changes could still be made, due to the iterative design phase, we were able to quickly and smoothly finalize the development of this application. It was during this phase that we were able to conduct unit testing of each function, then integration testing of each functionality. Finally, we were able to conduct alpha testing of the entire web application.

# Implementation (Deployment Stage)

At this stage the final tests were done to confirm full functionality before finally launching the web application fully. Upon completion, we had a functioning application that could be used with node.js to satisfy the requirements outlined in the assignment.