                     Fall 2021 Principles of Software Engineering

                                             FAU CEN 4010

**The Vaccine Strikes Back**

Group 23

                                                 Milestone 1

                                                    9/28/21

                                              Revision History

**Executive Summary**

The impact that COVID-19 has brought upon the world is undeniably horrendous. There have been approximately 4.55 million deaths, and the death toll is still rising. Multiple vaccines have been put out, and as of September 1st, 2021 only 39.6% of the world's population has received a vaccination. Currently, 3 major vaccines are available: Pfizer, Moderna, and J&J.

We came up with our idea of our game “The Vaccine Strikes Back” not only to have a bit of fun in these tough times, but to try and help spread awareness of how the vaccine can potentially help stop the spread of the virus. Our game will be similar to how the game “Space Invaders” plays, but with a COVID-19 theme. Basically you will control a vaccine needle(i.e. the spaceship in “Space Invaders”) with the vaccine inside of it. This will be used as ammunition to destroy moving and falling harmful covid cells inside the body. If a harmful covid cell reaches the bottom of the screen or touches the vaccine needle, you will lose points. There will also be some cells that are too strong to destroy, which is where the in-game shop will come in. You will be able to buy power-ups and other items to aid the fight through the in-game shop. As you play the game, you will also be able to replenish ammo from vaccine droplets that will also fall from the top of the screen periodically. Our plan for the in-game shop is for the power-up items to be things that are known to be effective in fighting covid . There will be in-game descriptions for each item to help educate people about what they actually do. In conclusion, we came up with the design of “The Vaccine Strikes Back” to not only have a fun experience, but to also learn more about COVID-19 as well.

**Competitive Analysis**

**Data Definition**

**Overview, scenarios, and use cases**

**Use Cases**

**List of Non-Functional Requirements**

**High-Level System Architecture**

1. **mySQL Database** - mySQL is the database we will be using to handle the data in our project. Users will be adding to the database through actions on the website and we, the developers, will be managing the data on our side.
2. **Browser Compatibility** - Our game will be a web-based application that will work on all major browsers.
3. **Visual Studio Code(IDE)** - Visual Studio Code is a code editor that we will be using to create the code for our web game application. The following languages will be used in our project:

                    a.) **Javascript** - Javascript will be the language used for the backend of the game to make it very interactive and enjoyable for the user.

                    b.) **HTML(HyperText Mark-Up Language)** - HTML will be the language used for the frontend to ensure that the UI(User Interface) is visually appealing and enjoyable for the user. HTML will allow the browser to display the game.

1. **fau.edu Lamp Server** -The FAU lamp server is what we will be using to host our project.

1. **P5.Play** - P5.Play is a Javascript library for the creation of games. This is what we will be using for all of our animations, interactions, collision detections, etc.

1. **Google Firebase** - We will be using Firebase to handle user authentication for our project. We will not be able to see user passwords, and encryption is handled on Google’s end. This seemed like the best option for our type of project.

**Team Members and Roles**

**Checklist**