**Functional Spec**

The primary goal of this game is two-fold:

- To be a source of clean, educational entertainment for children of all ages
- To educate children about injury prevention through different levels that stress the importance of helmet safety (when biking, skating, or riding ATVs) and water safety (when boating, jet skiing, or doing water sports).

**Requirements (in decreasing order of priority)**

- **P0:** Create a new game level for water safety
- **P0:** Resize sprites to take up a larger portion of the screen (effectively “zoom in” on the current game) and make it more clear whether they are being safe or not
- **P0:** Very simple UI and intuitive UX (optimized for children)
- **P1:** Create new sprites to represent characters
- **P1:** Host the new game on a web server that is accessible from the Mid Carolina RAC Wordpress site
- **P1:** Implement score streak system with obvious UI element to make scoring clear to user
- **P1:** Rework character pathing to be semi-random (or have more possible paths)
- **P2:** Rework the original helmet safety game level to fit with the new theme
- **P3:** Design a way to clearly alert the user if he/she clicks on a character that is already safe without making it feel like a penalty/punishment
- **P3:** Modify the UX flow to allow a user to switch from one level to another (i.e. helmet safety to water safety) from the end of game screen – perhaps by adding a “main menu” button to the end of game screen
- **P3:** Redesign the artwork on the splash screen and end of game screen to be consistent with the new game play screens
- **P4:** Add flashy animations and sound effects and redesign the scoring system to make the game more exciting
- **P4:** Add functioning high score table – either local or global (or both)
- **P4:** Implement a “consequence” sequence where characters without helmets/PFDs can fall, and the user has to use a life to save them

**User Types (in arbitrary order)**

- Children on small-screen devices (phones and tablets)
- Children on large-screen devices (desktop and laptop computers)

**Primary User Actions (High-level Use Cases)**

- Play water safety game
- Play helmet safety game
- Learn how to play the game
- View high scores
• Pause a game in progress
• Return to the main menu after completing a game or while game is paused

**General Design Principles**

- All code must be written in such a way that future teams and easily add new levels – this will require detailed documentation and sustainable code that adheres to established best-practices
- Code will be generalized rather than specialized when possible to promote reuse across levels

**Interfaces**

- The primary method of interaction between the user and the game will be through clicks (either mouse input or touch input in the case of a touchscreen device)
- If a global high score table feature is implemented, the game will request the user’s name via standard keyboard input
- The main menu (or game selection screen) will allow users to select a “level” by clicking on its icon. This page will be in the same style as in the current game with the addition of a new icon for the new helmet safety game. Upon completion, there should be two icons: one for water safety and one for helmet safety (order is arbitrary). Perhaps, there should be a third icon that allows the user to visit the high score tables or tutorials on how to play.

- The game flow should be simple and intuitive (fit for children) – thus, the “path” from load to game play should be as free of barriers as possible.