**Meaningful Play**

**Rules:**

This game is designed as a slide scrolling, racing game with challenging obstacles and multiplayer functionality. The player navigates his way through a course while avoiding the barriers. The course is a black environment with green lines that make up blocks. Hitting a barrier will result in moving back a checkpoint. In future prototypes there will be the different courses, different environments, obstacles, sounds, enemies, and gameplay (i.e., the intensity of gravity).

* In time trial mode, the player has infinite lives to get to the finish line. Naturally, the player’s score in this mode is based off of their time.
  + Instead of converting the time to an actual score number, the time is left in minutes, seconds, and tenths of seconds as seen on the actual game screen when playing.
* In challenge mode, the player will begin with 1 life.
  + The player has to move faster than the screen which moves at a constant rate, as opposed to scrolling with the player.
  + Score is based on how far the player makes it in the infinite, randomly-generated course.
* In multiplayer mode, players will have infinite lives.
  + Points will be deducted for each death (i.e., 10 second penalty).
  + In multiplayer challenge mode, players still just have one life.

**Evaluative**

The way that our Functional Prototype 2 communicates the outcome of the player’s decisions is by sight. First our game asks the user to provide a username. This is used to keep track of the scores and records of the games. The prompt in the red text will first say “Connecting to the game server” showing that it is in the process of connecting the socket from the server to the client. Once our socket is connected the prompt changes to “Welcome to the game,” and then the one button on the screen will appear signifying that the button is enabled. There will be a more advanced log-in screen for the final version of the game; however, for the purposes of easier testing, it has not been implemented yet.

Upon log-in, our game starts by showing our intro screen with the text as a bright green. When the player moves the cursor over a certain text, the text is highlighted and the cursor changes to a clicking-hand symbol signifying that it is a clickable text. The user has to choose between Single Player Time Trial, Single Player Challenge Mode, Multiplayer Race, or Multiplayer Challenge mode. Also there are two important buttons for the returning players at the bottom, which are used for viewing the instructions and another for viewing the high scores.

**Game Mechanics**

Once the user clicks any of these six texts, the screen changes to the corresponding environment. The instructions screen will take the user to a screen that shows the basic game information and controls. This screen will also have a ship on it like the one in the actual game. The player will be allowed to fly this ship around in the “sandbox” environment of the instructions screen in order to get a feel for the controls. For the high scores screen, the player is taken to a screen for viewing high scores. This will display the top ten scores for the selected game mode and difficulty. Currently the options are: Time Trial Easy, Time Trial Medium, Time Trial Hard, and Challenge. That being said, since the different difficulty levels for time trial are not implemented yet, the three time trial buttons all just show the best times overall. For the four game choices, the user will be brought to the game they chose. If a multiplayer mode is chosen, the player will have to wait until a second player also selects that mode, unless there is already someone waiting.

The game will start with the player’s red ship in the middle of the screen, with the green blocks all around the piece except for the right side. This tells the user to move to the right. When the user hits the arrow keys on the keyboard, their red piece will move with the user as he presses the arrow keys. (The up arrow key add thrust while the left and right arrow keys steer the ship). The player’s piece will also emit “exhaust” in the opposite direction of the piece’s motion to show the user that the up arrow key is the thrust control. The user will then see a series of obstacles built with the same blocks as the walls. This will tell the user to avoid these blocks and go around them. If the player’s piece collides with one of these blocks, the player’s piece will be moved back to a checkpoint. The user will see even more to avoid the green blocks. In time trial/race, the player will see a clock at the top of the screen. This implies that time is important and that the track needs to be completed as fast as possible. There is also a progress percentage to show how much of the track the player has already traversed. In challenge, there is a score displayed in the top right which implies that the further the user is able to go, the better the score.

The user will then move through the series of obstacles (if he has the skills) until the end of the track. This is when the user will encounter the finish line (in time trial or race). Once the user crosses the finish line then there is a window that pops up and allows the user to return to the main menu. In challenge mode, there is naturally no finish line so the game continues until the player dies. Also the user can hit the ‘P’ key on the keyboard to pause the game. Pressing the ‘P’ key again will resume the game or the user will have the choice to restart the game or go back to the main menu. The game being paused is perceived by a pop-up window showing the word “PAUSED” with the words “Main Menu” and “Restart” under it, giving the user the ability to choose between these different options.

For multiplayer mode, the prototype can now handle multiple games at a time. The more games that are running at the same time may result in some lag, depending on how many games and the strength of the connection with the server. The server.js must be started before the players can log in. The first player can choose multiplayer mode. The game will display a wait on other player screen to signify that an opponent is not available yet. Once the second player clicks the multiplayer mode, both players’ screens go to a new game. They will see on their own screen two games. They will perceive that they have control of the top one as the ship responded to them pressing the arrow keys. The bottom screen is the opponent’s screen. Now both of the players can comprehend whether they are winning or not. There are also progress percentages, a clock, and all of the other components described above for single player that allow the users to perceive what is going on and what they need to do.