

## **Space Escape Mechanics and 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 courses have various difficulties such as easy, medium, and hard. Hitting an obstacle or the edge of the course will result in a loss of a life. With the different courses, there will be different obstacles of varying difficulty. The game modes are:

- Time trial mode - the player has infinite lives to reach the finish line. The goal is to achieve the fastest time possible. Therefore, it will be in the player's best interest not to die.
- Challenge mode - the player will begin with 1 life. The course will be randomly generated and the screen will move on its own unrelated to the player's position. The speed of the screen's movement will increase over time. The goal is to survive as long as possible in order to attain the highest score.
- Online race – two players race against each other to be the first to the finish line. Each player has infinite lives.
- Online challenge – two players both attempt a challenge course. The first player to die loses.

### **Core Mechanics:**

The game is over when the player reaches the finish line, or dies, depending on the game mode. After a death in time trial or race, the player will be placed at a respawn point at the beginning of the current level.

The player will use the arrow keys to guide their spaceship through the obstacles. The left and right arrow keys will rotate the spaceship, while the up key will provide thrust. The down key will do nothing. The 'p' key will pause the game and bring up a menu.

While navigating the menus before gameplay, control will be directed via the mouse. To select an option, the user will simply click on a menu selection.

### **Evaluative Output and Meaningful Play:**

The player will comprehend the outcome of their decisions by what is happening visually on the screen. When the player starts the game, he will be asked for a username that will be used to record his score. Then there will be an introductory menu with several buttons that highlight upon mouse-over to indicate to the user to choose one of the options provided by the menu. The mouse cursor also turns into a hand-clicking symbol when the user has the mouse cursor on one of the buttons. Most users will naturally start with the tutorial mode that will give them detailed instructions on how to play and a very simple course on which to practice. Along with the textual

instructions, the player will be able to discern the result of pressing the arrow keys because they will be able to see their ship move on the screen in response to the keys being pressed.

During gameplay, the player's object will wait for the user to press the arrow keys. The graphics will update to represent the player's movement and direction (i.e., exhaust). There will be walls that the user will perceive as obstacles to avoid. The walls and floor will have the appearance of solid, unmovable objects. When the user hits one of these boundaries, the player's object will explode. Then, either the player will respawn at the beginning of that level or their game will end, depending on the game mode. The player's ship will then wait for the player to begin controlling it again and respond accordingly. The game will communicate defeat by showing a game over screen after the player's ship explodes. This will tell the user "good game" and give them the option to try again or return to the main menu. In time trial and race, the player will be shown a victory screen upon crossing the finish line. This will communicate the player's time/score.

The player can then view the high scores from the high scores page to see how their times and scores compare to other players. The player can also view just their own personal high scores so that the player can discern if they are improving or not on their gameplay. The high scores screen is very effective at conveying meaningful play to the user by allowing them to keep track of their improvement and compare their results with those of other players.

Another aspect that really helps in terms of meaningful play is the information displayed in the middle of the game. Depending on the game mode, a player will see relative information on the top of the game screen which will give him/her good insight into how their game is going. First off, there will always be a timer which allows the player to directly deduce how good they are doing. If it is a time trial or race mode, then a low time will automatically tell the player that he/she is doing well. On the other hand, in challenge mode, a high time will show the user that they are performing well because it will convey to the player how long they have survived. This can be extremely meaningful to the player because of the great feeling that arises when one looks up at the time in challenge mode and sees how many minutes they have survived so far.

Also in challenge mode, the player's score will be displayed. This is based on how far the user has gotten in the infinite course. It is more of a distance measurement that is slightly better at evaluating the user's challenge performance than merely looking at how long they stayed alive. In time trial, the number of deaths is shown instead. This allows the user to deduce how efficient he/she is playing by seeing how many times they have died and how that has affected their time. One final display that assists in the creation of meaningful play is the progress percentages in online race. This simply shows the user how far through the course they are. It starts at 0% and goes to 100% at the point where the user crosses the finish line. There is one of these for each player, so it is very easy to tell how far the opponent is and who is winning.

Lastly, the biggest meaningful play factor in multiplayer is the ability to see the opponent on the bottom half of the screen. Whether it is race or challenge mode, the opponent's ship is drawn on a separate course on the bottom half of the screen. This allows the player to immediately discern who is winning and how well the other player is doing. It may even allow the player to get a sneak peak at what is coming up in the course if the opponent is ahead. This can allow the player to plan ahead and maybe take the lead by being more prepared for an obstacle than their opponent was. It also provides a lot of encouragement and entertainment along the way. There is nothing greater than watching your opponent plow into an obstacle in challenge mode while you safely survive until they are dead. It is also amusing to watch as your opponent tries over and over again to get through a level in race mode that you cleared thirty seconds ago. No matter the game mode, the amount of meaningful play that is easily discernable from our interface and integrated into our overall game mechanics is nearly limitless.