**Software Requirements Specification**

**for**

**Group 1 Space Invaders**

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CISC 3140-ET6 Design & Implementation

Group 1 Specifications

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**Revision History**

**Name Date Reason For Changes**

Tenzin Wangchuk 10/9/18 Updated basic outline and rules of the game

Samanta Chowdhury 10/26/18 Added table of contents

Ferdinand Tettey 10/26/18 Updated Section 1.1

Daniel Yuen 10/30/18 Added more content on 7

Ahmed Ahmed 10/30/18 Updated 6.3

Tenzin Wangchuk 11/5/18 Updated table of contents

Added header number  
 Updated section 2.1

Daniel Yuen 11/19/18 Updated table of contents

Added Revision history section,

Changed “Overview” to “Introduction”

**1- Introduction**

**1.1-Purpose**  
The objective of this project is to create a game that is a version of Space Invaders. The original Space Invaders is a Japanese shooting video game developed by tomohiro and released in 1978 by Taito. The creation of this game was inspired by the War of the World and Star Wars.

**1.2-Reference**

Accessing SVN Repository

URL: https://svn.riouxsvn.com/invadergame

**2 -Game Outline**

**2.1- Main Menu:**

* + The game begins with the Main Menu. The “Start Game” prompt (center screen) along with a “Instructions” and “Volume” option below it.
  + Once the player chooses “Start Game”, the game begins with the player positioned in the bottom-center of the screen.

**2.2- Gameplay:**

* + The player will score points by attacking the enemies and avoiding the enemies attacks.
  + Each time the player is hit, the enemies are frozen and player will lose one life.
  + When all enemies are destroyed the screen is cleared and the next level immediately begins with the player centered.
  + Player can earn points by attacking the enemies and extra points by attacking the bonus enemy.
  + Without losing all lives and killing all enemies within all ten levels, the player wins the game.

**2.3- Game Over:**

Once the player is hit by the enemy three times and loses all available lives or after the lowest enemy reaches the horizontal axis just before the barriers.

**2.4- Point Distribution:** Player can gain points from attacking enemies and point distribution depends on the enemy:

* + - Enemy on the First Row: 30 Points
    - Enemy on the Second Row: 25 Points
    - Enemy on the Third Row: 20 Points
    - Enemy on the Fourth Row: 15 Points
    - Enemy on the Fifth Row: 10 Points
    - Bonus Enemy: 50 Points

**2.5- Additional Features:**

* + Current Game Score
  + Count of Lives

**3- Game Controls**

The controls for this game will be the player using the left mouse click to navigate the main menu. When clicking on “Start Game”, the player will be able to begin the game and when clicking on “Instructions”, the player will be given the game rules and scoring guide. Once the player has started the game, the “left” and “right” arrows on the keyboard can be used to move the player left or right on the screen. The “Ctrl” button on the keyboard will allow the player to shoot projectiles towards the enemies.

**4- Game Assets**

|  |  |
| --- | --- |
| Students Projectiles | Faculty Bullet |

|  |  |  |  |
| --- | --- | --- | --- |
| Faculty Row 4 | Faculty Row 3 | Faculty Row 2 | Faculty Row 1 |

|  |  |  |
| --- | --- | --- |
| Player | Bonus (Trustee) | Background |

**5- Game Rules**

* All new games start players with 3 lives displayed by 3 icons on the top left of the screen.
* A player’s current score is displayed on the top right of the screen.
* The current level is displayed on the top center of the screen.
* Player can only move left and right.
* There is a small area of boundary on the left and right side of the screen (neither player nor enemy can cross).
* When a player starts (or dies) they begin at the bottom center of the screen and all projectiles are removed.
* Player can only shoot projectile upwards one at a time (only one projectile can be present on the screen).
* The player must attack all the enemies and avoid the enemies attacks without losing all available lives.
* Each hit by the enemy would cost the player one life.
* There are 4 barriers (protect the player against the enemies projectiles) starting right above the horizontal axis of the player.
* These barriers completely disappear when the lowest enemy reaches the horizontal axis just above it.
* These barriers consist of 10 parts that it can be struck from and each part can be hit 4 times until it completely vanishes.
* The barriers condition remains the same throughout each level.
* At each level, the player is given another life.
* To move on to the next level, the player must kill all enemies.
* As the player progresses, the level of difficulty increases (the higher the level, the more enemies on each column).
* When attacked, each enemy starting from the lowest row is worth 10 points, 15 points, 20 points, 25 points, and 30 points.
* Each level will have a bonus enemy in which when attacked, the player will earn 50 points.

**6- Graphics**

* Screen Resolution: 800x600
* Sounds should be included for:
  + Game Over
  + Completing a Level
  + Each time the Enemy attacks
  + Background music during gameplay
  + Winning the Game
* Gameplay sprites:
  + Playable Character - Student
  + Enemies - Administrators
  + Bonus Enemy - Trustee
  + Projectiles - Image of pencil and eraser
  + Explosions
  + Barriers
  + Blood Splatter

**7- Game States**

* Music During Gameplay- unique sound played
* Main Menu- no sound played
* Completing a Level- unique sound played
* Pausing the game- no sound played
* Attack by an Enemy- unique sound played
* Shooting Sound
* Sound when an enemy is hit:
  + Regular Enemy
  + Special Enemy
* Exploding trustee scream sound - Wilhelm Scream
* Enemy moving sound - tba
* Game Over- unique sound played
* Winning the Game- Unique sound played

**8- Communication**

* In order for the members of the group to communicate with each other, whatsapp and slack has been used.

**9- Programming Language**

* To develop this project, the languages being used are HTML, CSS and JavaScript.