B.Sc Computer Games Development, Year 3

Game Design Document

06- Oct-2021

**“SHHHHHH...!”**

Authors: Masih Shafieian , Eoin Galavan , Adrien Dudon

Project Supervisor: Peter Lowe

# 

Table of contents

[****](#_Toc87966199)

[1. Overview](#_Toc87966200)

[**1.1.** **The Elevator Pitch / High Concept**](#_Toc87966201)

[**1.2.** **Theme, Setting and Genre**](#_Toc87966202)

[This is a top down stealth survival game. The setting is a zombie infested island you need to escape from](#_Toc87966203)

[**1.3.** **Player Experience Goals**](#_Toc87966204)

[**1.4.** **View**](#_Toc87966205)

[**1.5.** **Targeted platform(s)**](#_Toc87966206)

[**1.6.** **Technical requirements(s)**](#_Toc87966207)

[2. Gameplay](#_Toc87966208)

[**2.1.** **The First Minute (60 seconds of play)**](#_Toc87966209)

[**2.2.** **Game progression**](#_Toc87966210)

[**2.3.** **Level progression**](#_Toc87966211)

[**2.4.** **Objectives/Victory Conditions**](#_Toc87966212)

[3. Features](#_Toc87966213)

[3.1. Sprint 1](#_Toc87966214)

[**Feature 1** - Moving player](#_Toc87966215)

[**Feature 2 -** Enemy](#_Toc87966216)

[**Feature 3 -** Environment](#_Toc87966217)

[**Feature 4 -** Noise](#_Toc87966218)

[**Feature 5 -** Pickups](#_Toc87966219)

[**Feature 6 –** Enemy vision cone](#_Toc87966220)

[**Feature 7 –** Camera](#_Toc87966221)

[**Feature 8 –** Animations](#_Toc87966222)

[4. **Game World**](#_Toc87966223)

[4.1. Game Geography](#_Toc87966224)

[4.2. Game World Elements](#_Toc87966225)

[4.2.1. Characters (Player and Enemies)](#_Toc87966226)

[4.2.2. Items](#_Toc87966227)

[5. **Levels**](#_Toc87966228)

[5.1 Level description](#_Toc87966229)

[6. **Interface**](#_Toc87966230)

[6.1. Controls](#_Toc87966231)

[6.2 HUD](#_Toc87966232)

[6.3 Screenflow](#_Toc87966233)

[6.4 Control system](#_Toc87966234)

[7. AI](#_Toc87966235)

[7.1. Opponent AI](#_Toc87966236)

[8. **Game Art & Audio**](#_Toc87966237)

[8.1. Audio](#_Toc87966238)

[**8.2.** **Art assets**](#_Toc87966239)

[**8.2.1.** **Characters/ animation frames**](#_Toc87966240)

[**8.2.2.** **Items (in-game & icons)**](#_Toc87966241)

[**8.2.3.** **Level backgrounds/maps/environment textures**](#_Toc87966242)

[8.2.4. **Visual effects**](#_Toc87966243)

[**8.2.4.1.** **Particles**](#_Toc87966244)

[**8.2.5.** **HUD graphics, typeface**](#_Toc87966245)

[8.2.6. **Controls screen/menu/dialog backgrounds/borders/typefaces**](#_Toc87966246)

# Overview

### **The Elevator Pitch / High Concept**

SHHHHHH…...!!!! is a two-dimensional top-down view game where the player needs to obtain different boat parts to escape from the zombie island!

### **Theme, Setting, and Genre**

### This is a top-down stealth survival game. The setting is a zombie-infested island you need to escape from

### 

### **Player Experience Goals**

Players have to avoid the zombies, search and find the boat parts and escape the island.

### **View**

### 

The game will have a top-down view, with the player in the center and the camera moving with the player.

### 

### **Targeted platform(s)**

Windows 10 minimum

### **Technical requirements(s)**

* Personal computer
* C++ languages with SFML library
* Visual Studio or JetBrains CLion as IDE

# Gameplay

### **The First Minute (60 seconds of play)**

The player opens up the game and is greeted by the menu, upon selecting a level the gameplay starts, they find themselves on a map with different floors and walls as well as a minimap in the bottom left corner of the screen and a silhouette of the item they need in the top right corner of the screen. The player clicks the arrow keys and the player on the screen starts to move, the camera follows them as they do, they walk over some leaves and noise represented by a growing circle that disappears over after a while, a zombie in a nearby box reacts but is stuck inside and the player realizes the noise they make can attract zombies. The player gets to a window and wants to get inside, they see a stone on the ground, pick it up and throw it towards it, it breaks the window and emits a lot of noise but the player knew there was no zombies nearby, the player climbs through the window and inside finds the boat part, upon pickup of the boat part the silhouette in the corner fills up then the player proceeds to retrace their steps back to the beginning and is treated to a congratulations screen upon completing the level.

## **Game progression**

* + 1. *How do I progress from level to level?*Get the loot and come back to the start point without being caught by the enemies.
    2. *How does the game increase in difficulty?*

Adding more enemies and changing the environment.

* + 1. *What rewards (useful or not) are revealed to keep players engaged?*

Players are challenged to improve their time on each level to earn stars and stars signify your grade for the game

## **Level progression**

* + 1. *How do I complete each level? I.e. what are the objectives*

After the player collects the loot and returns to the starting point the level is completed and may be replayed.

## **Objectives/Victory Conditions**

The main objective is to avoid the enemies and collect the loot as fast as you can.

The game will finish when all the levels have been beaten. However, replayability is available.

The player loses the level if they get caught by the zombies and may restart.

The goal of the game is to collect all the loot and escape the zombie island by completing each level.

# Features

## Sprint 1

### **Feature 1** - Moving player

The player should be drawn and move in the 4 cardinal directions.

**Conditions of satisfaction:**

* I can use keyboard arrows to move
* The Player can be seen on the screen.
* The player can Sneak and Run as well.

### **Feature 2 -** Enemy

The enemy should be drawn on the screen and can interact with the player.

**Conditions of satisfaction:**

* Enemies can be seen on the screen.
* If a player collides with the enemy a game over text will appear

### **Feature 3 -** Environment

various static features of the map that the player can interact with.

**Conditions of satisfaction:**

* The environment can be seen on the screen.
* Collision between player and the environment.
* Creating different children of environment-class.

### **Feature 4 -** Noise

The player can make noises or create noises with the environment within the level. There are three levels of noises: green, yellow, and red that depend on what's been interacted with

**Conditions of satisfaction:**

* When the player walks on or interacts with something noise is generated
* Noise is drawn on the players' location and expands over time
* Noise is deleted when it hits its maximum size
* A zombie that hears the noise can react appropriately

### **Feature 5 -** Pickups

the player can interact and pick up certain objects.

**Conditions of satisfaction:**

* The Player can see the different pickups.
* The player can interact with the pickups if they collide with them.
* Certain items are throwable
* And others trigger the win conditions.

### **Feature 6 –** Enemy vision cone

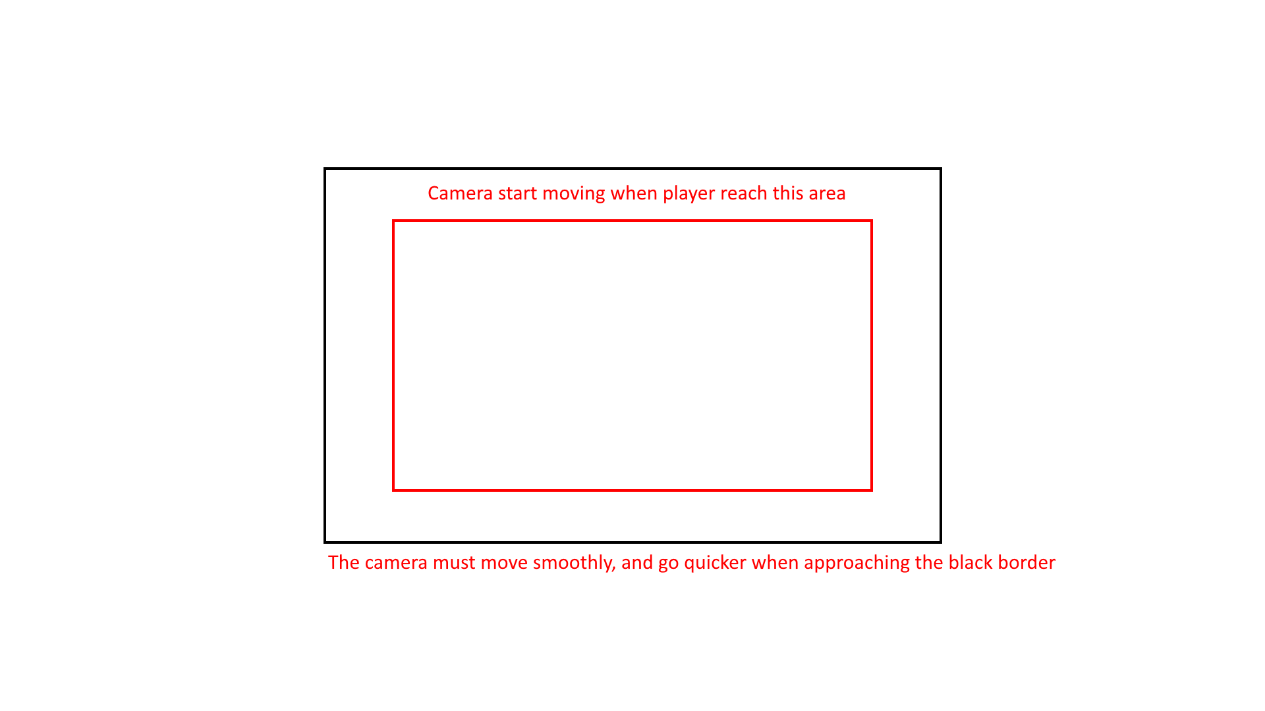
One of the enemies has a vision cone and can see the player. Upon player entering the cone the idle enemy vision cone angle and length will change (goes to attack mode) and will follow the player, if it catches up to the player it will attack the player. If the player manages to leave the vision cone, the vision cone will go back to its previous state (seeking state).

**Condition of satisfaction:**

* Enemy reacts immediately to a player entering its vision cone.
* it changes its states successfully.

### **Feature 7 –** Camera

The camera (the view) should follow the player smoothly. There should be a “free area” where the camera does not move. If the player reaches one of the borders of the area, the camera should start moving smoothly toward the player.



On the image above the red border is just the “free area”, the camera doesn’t move as long as the player stays in the red area. Between the red and the black, the camera starts to move. The player should never leave the black area.

**Important:** the black area is not the world border nor the window border. It is just a rectangle in the middle of the window used for the camera system.

**Conditions of satisfaction:**

* Create a “free move” area (the camera does not move)
* Have a smooth camera movement (according to the delta time)

### **Feature 8 –** Animations

Characters and some items must have animations. The game will use sprite sheet animation to do so.

**Conditions of satisfaction:**

* Have an Animation class
* Can control the playtime of the animation (loop, time of each frame, …)
* Should use the default sf::Sprite of SFML
* Can be used for every element (sprites) of the game

### **Feature 9 –** Level Builder

Use to make building levels an easier experience

**Conditions of satisfaction:**

* Draw the Builder
* Select objects
* Add/Remove/Modify objects from the map
* Export object data to a Json file

### **Feature 10 –** Menu & UI

Use to make building levels an easier experience

**Conditions of satisfaction:**

* Allows player to navigate through the game
* Gives players information on what’s happening

### **Feature 11 –** Sound

Use to make building levels an easier experience

**Conditions of satisfaction:**

* Play Music for the game
* Add Dynamic Sounds e.g. player footsteps, zombie growling, bottle breaking

# **Game World**

# Game Geography

The game's geography is an island, so water will be used as a “border-limit” all around the map at each level. To highlight the fact that we are on an island, “beach” tiles will be used around the map and grass closer to the center of the island. The geography of the level must also be like “post-apocalypses” so ruined roads and wrecks will be used all around the map.

# Game World Elements

# Characters (Player and Enemies)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description & Appearance** | **Abilities** | **Strengths** |
| Survivor (Player) | The survivor (which is the actual player) looks like a surviving soldier.  A picture containing text  Description automatically generated | Can sneak, walk, and run. Each move can make noises depending on its type.   * **Sneak:** do not make noise, but is slow * **Walk:** do small noises * **Run:** do a lot of noises |  |
| Blind Zombie | This type of zombie is blind. He can’t see the player; however, he can hear the player by having good ears.  A picture containing text  Description automatically generated | Can run quickly towards a noise. | Can hear the player from far away. Do not see the player but run quickly towards any noises. |
| Deaf Zombie | This zombie is deaf but can see. So, if the player is in the field of view of this zombie, it will run after the player and start making noises. | Ability to make noise while running after the player, which will attract the other zombies. | Can see and make a lot of noises to attract the blinded zombies. |

# Items

|  |  |  |
| --- | --- | --- |
| **Name** | **Description & Appearance** | **Abilities** |
| Rock | A throwable object that you can throw on the ground for attracting the blinded zombies.  The appearance of this item is like a little rock that you can find naturally on the ground. | Can be found on the map and thrown towards any direction and to create noises. |
| Can | A throwable object that can be found on the ground. | Can be found on the map and thrown towards any direction and to create noises. |
| Glass bottle | A throwable object that can be found on the ground. | Can be found on the map and thrown towards any direction and to create noises. |
| Boat part | Boat parts are the main objective of the game. The player must collect all the boat parts to be able to build a boat and escape the Island. The boat parts can be found at each level. The player has a time limit to get the boat part. | Can be used to craft a boat. Need X (variable) numbers of parts to build the boat. |

# **Levels**

# Level description

* Level 1: This Level is designed primarily to show off all the mechanics, varying sound, throwing pickups, zombie triggered by noise and a goal
* Level 2: This level highlights the level of detail can be added to a level, there’s 2 zombies and 2 pickups along with lots of objects and walls obstructing movement

1. **Interface**

### Controls

Mouse – navigate menus

Arrow Keys – move

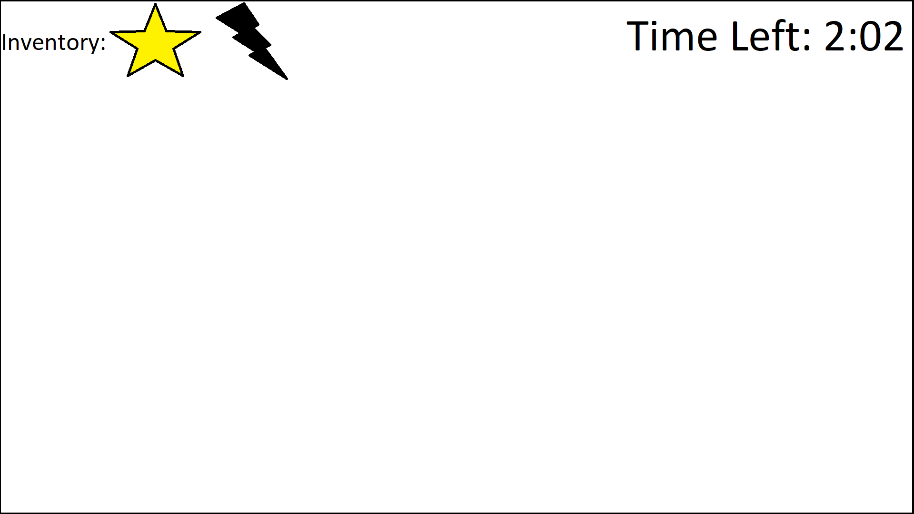
Ctrl – slower speed

Space – faster speed

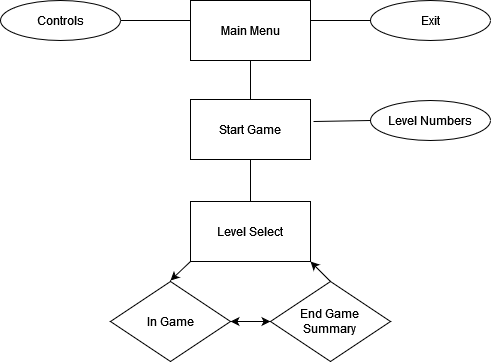
P – pause menu

D – toggle debug mode

### HUD



### Screenflow



### Control system

*A mouse is used to navigate menus using buttons*

# AI

### Opponent AI

The game uses a very simple AI, one enemy keeps following the player if it can see the player and the other one just simply uses the pathfinding to get to the player`s location.

# **Game Art & Audio**

### Audio

* + 1. **Background music**

We are going to use a simple white noise for background music.

* + 1. **Audio effects**

For audio effects we are going to have simple footstep audio for player walking, we will play it faster and slower for running and crawling.

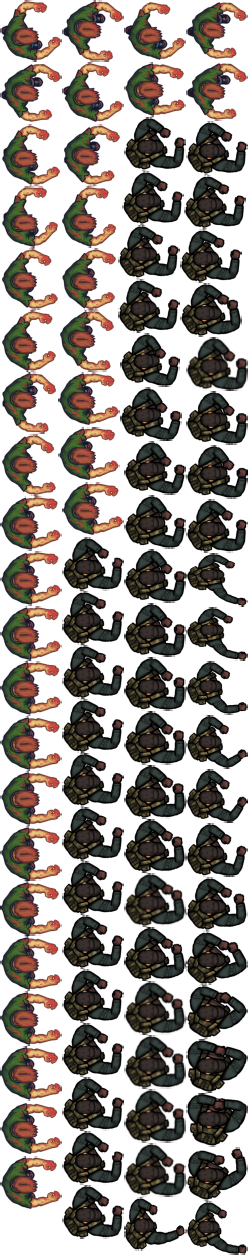
We will have random zombie noises. As soon as a player is seen by the scouting zombie that zombie will do start making loud screaming noises to attract the other zombie.

We will have glass noise and can noise for throwables.

### **Art assets**

##### **Characters/ animation frames**

For our character, we surfed the internet and borrowed a free sprite for different states of players and zombies and animated them.

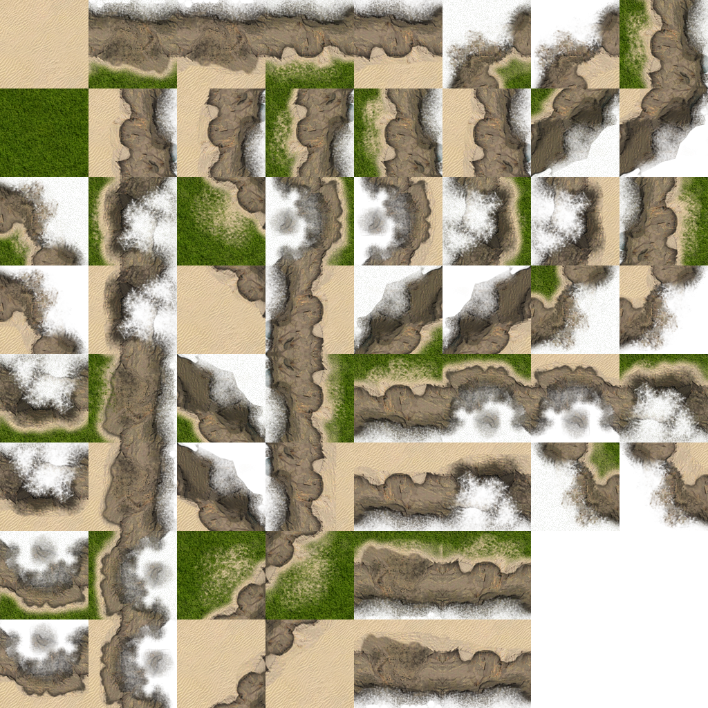


##### **Items (in-game & icons)**

For in-game items, we are going to have a glass bottle and a can for the player to collect and throw them.



##### **Level backgrounds/maps/environment textures**



##### **Visual effects**

##### **Particles**

We are going to use a particle system for creating semi-foggy weather for our level and the blood effect of getting attacked by the zombies.

##### **HUD graphics, typeface**

Our Hud will be a simple rectangle shape on top of the window (please check the interface)

##### **Controls screen/menu/dialog backgrounds/borders/typefaces**

# 

Menu background with a simple multiple button function for the beginning of the game and a simple pause menu for in-game.