Blast Those Bugs!

Spring 2021 | Kevin Slackie

DESIGN FUNDAMENTALS

The main purpose of this game is to make a basic side-scroller that utilizes many of the lessons learned in this class and ones before it. Thus the premise is silly, the gameplay is simple, and the initial goals aren’t too difficult. Should all these things be properly implemented then other stretch goals can be attempted.

The design philosophy here is “easy to understand at a glance.” For instance, all the enemies are bugs, since they are a (mostly) universally reviled monster. The protagonist is a one-dimensional character whose personality is conveyed the moment he appears on the screen. Finally, the actions the player can take are simple too, with movement, jumping, and shooting being self-explanatory.

The complication here is all on the development end. I plan to have various things I haven’t been taught in class implemented into the game, such as changing sprites with the Unity Animation Controller and implementing an enemy A.I. I believe the simplicity in concept will allow me to better push myself in areas more ripe for improvement.

## Player Motivation/Experience:

Players will be challenged to navigate mild platforming elements while exterminating the bugs. This should give players a sense of power, with challenge progressing as the level reaches its climax

## Game Structure:

Single-player platformer with shooting elements. Players start on the left side of the screen with 10 health and move toward the right while fighting pre-determined enemies and navigating light platforming puzzles. The game will calculate the damage and enemy reactions. Players will only have 1 jump and falling down a hole will cause damage. If they touch an enemy the player will receive 1 point of damage. The boundaries of the screen will guide players to the goal of fighting the bug queen, defeating her and finally getting the ranch back

## Narrative:

Mad Man Mike is mad that alien bugs have invaded his farm. With rage in his eyes, Mike takes his trusty shotgun to rid this infestation and save his farm!

## Core Mechanic:

The core mechanics includes jumping and shooting the alien scourge!

## Other mechanics:

There are no secondary mechanics currently planned

# GAME SYSTEMS OVERVIEW

* **Mad Man Mike** 
  + **Attributes:** 
    - **Sprite:** Mike is the only human in the game, giving him a distinct shape language
    - **Colors:** Lots of brown, blue, and gray to emphasize the cowboy aesthetics
    - **Health:** Mike has a pre-determined amount of health, which is lost upon contact with an enemy
    - **Animations:** Mike has some rudimentary animations that convey his actions to the player
  + **Behaviors:** 
    - **Movement:** Can move left or right, one single jump for minor vertical control.
    - **Shooting:** Shoots a single bullet upon button followed by a slight cooldown period
    - **Death:** Mike dies upon receiving more damage than his current health
* **Alien Grunt**
  + **Attributes:** 
    - **Sprite:** Smaller sprite than the player
    - **Colors:** Greens, yellows, and red for the eyes give these enemies an alien, grotesque feel
    - **Health:** Grunts have a small amount of health to pose an obstacle for the player, but never more than that
    - **Animations:** Grunts have 3 animations: idle, move, attack
  + **Behaviors:** 
    - **Movement:** Move on a pre-determined path set by the programmed A.I.
    - **Attacking:** This weaker enemy has a simple, easy to read attack so the player can use it to understand the systems of the game
    - **Death:** Grunts die upon taking damage from the player
* **Alien Boss**
  + **Attributes:** 
    - **Sprite:** Made to look like a natural evolution of the Grunt sprite
    - **Colors:** Deeper colors than Grunt, so darker greens, brighter yellows
    - **Health:** The boss will have the most health of any enemy in the game.
    - **States:** The boss will have 3 states: Attacking, Movement, Death
  + **Behaviors:** 
    - **Movement:** Relentlessly pursues the player
    - **Attacking:** The boss bumps into the player for damage
    - **Death:** Once the boss dies it’s the end of the game

## Systems Diagram

Diagram

Description automatically generated

ADDRESSING PROJECT REQUIREMENTS

!! This section should be no more than one page.

## Physics:

The unity physics systems will mostly be utilized for collision detection aka when a bullet hits an enemy or the player collides with an enemy. Also for player movement in general.

## Animators and Animations:

The animation system will be used to not only change GameObjects and their states but also their current sprites in order to match those states. The animator will also control the general movements of the various objects, like when enemies “patrol” for the hero.

## C#, Algorithms, & Complexity:

The code will go beyond the confines of this class in order to mimic a moving camera, enemy A.I. and more advanced Animation Controller usage. The Enemies will have to understand where they’re allowed to be, as well as attack and be defeated by the player. If time permits a final boss with extra attacks will be implemented as well.