1. Title Page

1.1. Game Name – Kaboos.

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2. Table of Contents – Make sure this includes all the subsections to make finding material. If practical, hyper linking the document will help here.

4. Section I - Game Overview

4.1. Game Concept: A 2D top-down game where the player progresses through rooms that are randomly generated to give the player a different experience each time, the player chooses a unique character with different attacks and abilities and progresses through rooms with the difficulty at room 5 and room 10, the game ends when either the player dies or finished room 15.

4.2. Feature Set:

* Player can move in 8 directions based on directional inputs.
* Players and enemies have a visible health bar to keep track of a character’s health and provide visual feedback to damage taken.
* Players have a resource bar underneath their health bar that is used to track when they can use their ability.
* Player cannot move through enemies or walls.
* Enemies cannot move through players or walls.
* Player can attack at melee range/fire projectiles depending on the player type.
* There are health potions in the game that have a percentage chance to drop from enemies.
* Maps will be randomly generated for each room.
* The player can choose a playable character, each with their own attack methods and abilities.
* The player has a selection of difficulty settings to choose from based on their skill level and the level of challenge desired.
* The player can control the volume of sound and music before entering the game and during the game.
* Enemies use indexed A\* path finding to chase the player down.

4.3. Genre: Dungeon Crawl with Rogue-like inspired elements.

4.4. Target Audience: 8+

4.5. Game Flow Summary – The player moves around in the room, navigating objects that can be collided with, avoiding enemy attacks, and trying to defeat enemies in a room/level before advancing to the next room.

4.6. Look and Feel – The basic look and feel is an old school 16-bit dungeon crawler but with animations and modern video game tropes implemented.

4.7. Project Scope – A summary of the scope of the game.

4.7.2. Number of levels/rooms: 15 per run, potentially infinite number of potential rooms due to procedural generation.

4.7.3. Number of NPCs (Non-Player Character): 3.

4.7.4. Number of Player Character: 3.

4.7.5 Number of Items: 1.

5. Section II - Gameplay and Mechanics

5.1. Gameplay

5.1.1. Game Progression: The player will be spawned into a room and must defeat every enemy that spawns in waves with a total of 3 waves, after defeating all 3 waves the player can press space to advance to the next room. The player progresses like this all the way up to room 15.

5.1.4. Objectives – The objective of the game is to survive and defeat all enemy NPC’s, progressing through the game and facing more challenging threats until they reach the final room.

5.1.5. Play Flow – Player spawns into a room, fights off the enemies and has small breaks in between wave spawns, allowing them to adapt to enemy spawns without giving them too much time so as to keep the game engaging.

5.2. Mechanics – What are the rules to the game, both implicit and explicit. This is the model of the universe that the game works under. Think of it as a simulation of a world, how do all the pieces interact? This actually can be a very large section.

5.2.1. Physics – Using Box2d to emulate a physics system without gravity (Due to the fact that the game is top down), rotations are disabled for the sake of game clarity.

5.2.2. Movement

5.2.2.1. General Movement: The player can move in any direction. In the physics system, this is done by applying velocity to the player character based on their inputs. Enemy movement is handled based on a path created by a path finder, their movement is based on the application of force in box2d to give the illusion of 8-directional movement even though enemies only move in 4 directions (up, down, left and right)

5.2.2.2 Other Movement: The knight player type’s ability is a movement based ability that lets them dash a set distance towards the direction clicked by a player, functionally this is done by applying a force to the player, this dash can be interrupted at any point by the player inputting a movement key.

5.2.3. Objects: There are interactive health potions that health the player for 50% of their maximum health when the player character comes in contact with them. There are a variety of walls and pillars in the game that are used to keep enemies at bay and hide from enemy projectiles.

5.2.4. Characters: Each character has an attack type and one unique ability; each player character has a cool down to their abilities that is represented by a blue resource bar underneath their health bar.

5.2.4.1. Wizard

* Uses Spells: Main Attack shoots fireballs
* Ability: Fires an icicle freezing an enemy in place that slows down enemy movements while tinting the enemy hit blue to make it clear that the enemy is being slowed.

5.2.4.2. Archer

* Uses Bow and arrow: Main Attack shoots arrows
* Ability: Shoots a slower, more powerful arrow that has the same dimensions as the main attack.
* Resource: Energy

5.2.4.3. Knight

* Uses Sword: Main Attack stabs with a sword, functionally a short lived projectile.
* Ability: Allows the knight to dash a set distance in the direction clicked.

5.2.5. Combat – Combat is modelled through collision detection; player attacks create a collision box that is used to check which enemies are hit. Enemies will have a similar system; the player will have to avoid getting hit while also damaging enemies to succeed. All attacks can be fired in any direction, the direction of the attack itself is determined by subtracting a click direction from the center of the player character.

5.3. Screen Flow

5.3.1. Diagram

Description automatically generated

5.3.2. Screen Descriptions (Every screen except the main menu screen and the game screen will have a button to return to the previous screen)

5.3.2.1. Main Menu Screen: Has the options:

* Start Game: Starts the game
* Character Select and Controls: Changes to a screen to allow character selection and can link further to the Controls screen.
* Options: Allows the player to adjust options for the game.
* Exit Game: Exits the game

5.3.2.2. Options Screen: Options included are (in this order):

* Turning Sound effects on/off using a check box
* Turning Music on/off using a check box
* Adjusting Sound effect volume using a slider
* Adjusting Music volume using a slider
* A drop-down box for selecting difficulty between (Easy, Medium, Hard and Kaboos)

5.3.2.3. Character Select & Controls Screen:

* A drop-down box for selecting the player type between (Wizard, Archer, Knight)
* A button to navigate to the controls screen

5.3.2.4 Controls Screen: Provides a graphic for basic controls depending on the chosen player type as it each player type has the same controls but a different description for attacks and abilities, this screen’s purpose is to teach the player how to ‘play’ the game.

5.3.2.5 Story Screen: Provides a short description of the game’s story with changes in the text depending on the player’s selected type. Also contains a start button to navigate to the Game Screen.

5.3.2.6 Game Screen: This is the where the gameplay resides, containing the player, the environment, the enemies, and a user interface to display the player’s important statistics (Such as health, lives and their respective secondary resource and a level + wave number counter) as well as enemy health.

5.3.2.7 Pause Screen: A variation of the options screen, containing buttons for (in this order):

* Resuming the game
* Turning Sound effects on/off using a check box
* Turning Music on/off using a check box
* Adjusting Sound effect volume using a slider
* Adjusting Music volume using a slider
* Exiting to the main menu

5.4. Game Options:

* + 1. Adjusting Sound effect volume using a slider
    2. Adjusting Music volume using a slider
    3. Turning Sound effects on/off using a check box
    4. Turning Music on/off using a check box
    5. Difficulty choices that cycle through 4 different difficulty options (Easy, Medium, Hard, and Kaboos).

5.5. Replaying and Saving: Since the game is created to be a roguelike, replaying the game is part of the main gameplay loop, saving the game is not applicable as each run is separate.

6. Section III – Story, Setting and Character