

Hello Reaper

Game Design Document

GAM150S17KR Spring 2017



Producer
Cho, Yong Won

Lead Designer
Lee, Gyu Hyeon

**Technical
Director**
Hwang, Chan Ill

TABLE OF CONTENTS

Executive Summary	3
High Concept	3
Expanded Concept	3
Key Features	3
Target Audience	3
Target Platform	4
Expected ESRB Rating	4
Story	5
Game Flow	5
Game Mechanics	5
Object for the game	5
Tile-based Map	6
Resource based movements and attacks	6
How to win	7
How to lose	7
Game Characters	7
Reaper	7
Shop Owner	7
Enemies	7
Game Resources	8
Energy	8
BULLET	8
SHIELD	8
Money	8
Game Environment	9
Levels	9
Time Limit	9
Loading Screen	9
Special Tiles	9
Game Control	9
Component Design	10
Visual Design	10
Level	10
Player Character	10

Animations	10
Audio Design	10
Soundtracks	11
Player	11
Enemy	11
Etc	11
Behavior Design	11
Enemy	11
Physics Design	12
General	12
Multiplayer Design	12

※ *Contents leaned are not critical for the first playable.*



The Reaper.

Executive Summary

High Concept

'Hello Reaper' is a post - apocalypse themed fast - paced 2D top down action shooter game where the player can only move based on tiles while the enemies ignore the tiles. Use DASH to avoid enemies and SHOOT pistols or shotgun to kill enemies within the given time limit.

Expanded Concept

Where all the civilizations had fallen, powerful and dangerous machines started to have intelligence. Before the player plays the actual level, he or she should plan wisely how to move and when to attack. Prepare as much as you can with the given money by buying shields or special bullets. Keep your cool and just do as you planned - or die, die, and **DIE** until you finally take your sweet victory.

Key Features

- *Plan with given money each level.*
 - *The player can see how the level looks like, including the enemy locations before they play the level.*
 - *Buyable item BULLET allows the player to use powerful guns or attack skills .*
 - *Buyable item SHIELD protects the player from one extra hit per each.*
- One life for each level for the player.
 - The player dies in one hit, unless they bought a shield.
- Time limit for each level.
 - The amount of time limit will be shorter than there should be.
Thankfully, the player can gain extra time by killing the enemies.
 - The amount of time limit also indicates how hard the level is.
- Tilemap fixed movements and attacks for the player.
 - Player can only move 1 tile or 2 tiles ahead for each input(WASD).
- Tilemap free movements and attacks for the enemies.
- Energy based movements. Recharge energy cells by damaging the enemies.
- Multiple ways to beat each level - How will the player move and when will he or she shoot?
- Soundtracks packed with heavy beats, EDM sounds and interesting pixel arts to improve the player experience .

Target Audience

- Gamers who like fast-paced action games.
- Gamers who don't care about few trials until they beat the level.
- Gamers who love pixel arts combined with low pitched EDM music.

Target Platform

- Windows
- 1280 * 720 minimum display resolution.
- *Fullscreen is always being considered.*

Expected ESRB Rating

- "E(10+)" for Everyone 10+
 - Thanks to the enemies for being machines, they will display minor violence and animations.
 - However, action packed gameplay including realistic gunfires raised the ESRB Rating from "E" for everyone to "E(10+)" for everyone 10+.

Story

The end of the world had come. You are 'Reaper', a girl who can shoot and dash without using her own body, but using the powerful modules instead. Play through multiple levels while wiping out the machines in the remaining of fallen civilizations. Talk to shop owner and gain information about this world. Find out why she is 'Reaper' and what made her to kill these machines. Will you be able to figure out the bittersweet truth lurking in this wretched world?

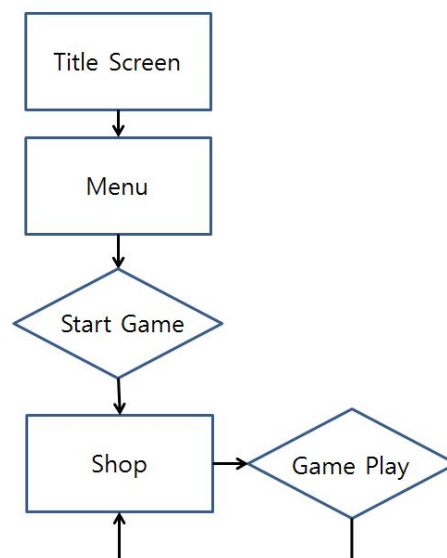
Game Flow

Before playing each level, the player will go into the shop and plan his or her moves while seeing the next level's tile map and enemies' locations as well. The player can also buy useful items with the given money .

While the player plays the actual level, his or her skills will be harshly tested as the player should kill all the enemies within given time limit without being hit once or twice.

When the player dies, he or she will come back to the shop so that the player can prepare for the level and rethink his or her strategy. *As the money that allows the player to purchase useful items is specified for each level, so the player can try as many times as he or she wants.*

Player may progress only if the player beats the previous level.



Game Mechanics

Object for the game

The object of the game is to kill all enemies within given time limit without dying.

Tile-based Maps

Each level is composed of several tiles that critically influence the gameplay. Player can only move from tile to tile while the enemies can chase the player while absolutely ignoring the tiles.

Resource based movements and attacks

Different from other existing real-time games, player can only move and attack based on fixed tiles.

- **Movements**

Based on limited but rechargeable energy cells, the player can move 2 tiles or 1 tile. Energy cells can be recharged by successfully hitting the enemies.

- Basic Dash
 - WASD Keys.
 - Move 2 tiles from the initial tile.
 - Drains 1 energy cell.
- Special Dash
 - SHIFT + WASD Keys
 - Move 1 tile from the initial tile.
 - Drains 2 energy cells.

- **Attack Skills & Weapons**

Based on limited BULLETS, the player can use special attack skills and different weapons. All successful attacks will recharge 1 energy cell.



- Pistol
 - Direction keys when the number 1 was pressed.
 - 1 damage for each projectile.
 - Doesn't use BULLET.
- *Double Tap*
 - *SHIFT + Direction keys when the number 1 was pressed.*
 - *Shoot twice, 1 damage for each projectile.*
 - *Use 1 BULLET.*



- Shotgun
 - Direction keys when the number 2 was pressed.
 - Shoot 3 projectiles, 1 damage for each projectile.
 - Use 1 BULLET.

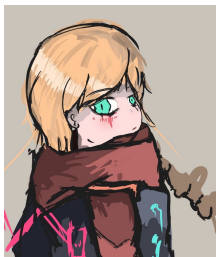
How to win

Kill all enemies within given time without dying. Completing the level will open next level.

How to lose

The player dies before killing all enemies, or time goes beyond the limit. At which point player will be send back to the shop so that they can restart the level.

Game Characters



The Reaper

The Reaper is the main character of the story who is determined to destroy all the machines in this wretched world. Her red scarf and crystal-looking eyes will shine in this bloody battlefield, making her presence as a reaper known once again.

Shop Owner

- *Half human and half machine, he is the only one who can help Reaper with his supplies. He is also a storyteller of this game as he sometimes talk about what happened to this world and what is happening. Of course, nothing is free.*

Enemies

All enemies are machines. After the apocalypse, they suddenly started to group with other machines and live on their own.

- **Enemy_Chaser**
 - Cute little modules that float around the space. Don't be fooled by their appearance - they are pretty dangerous.
- **Enemy_Turret**
 - Shaped like tower, these things protected this world for over than 100 years with their trusty guns. In other words, they are extremely dangerous now.
- **Enemy_Guard**
 - *Clearly not invented for domestic use. Their steel-plated armors protect them for three different directions. Moreover, they have small rocket engines attached to them, which allow them to dash a small amount of distance.*

- *02SUCCUBUS32b*
 - *One of the most powerful and dangerous robots in this world. Called by the remaining readable model numbers written on her body, she is known as the one who are controlling other robots.*

Game Resources

Energy



Energy cells that people used to run their civilizations before the apocalypse. Rechargeable with other source of energy(For instance, another energy cell).

- Limited but rechargeable resource.
- The player starts with 5 energy cells and will use 1 for each basic move(which goes 2 tiles) or 2 for each special move(which goes 1 tile).
- If there is no energy cell left, the player cannot move.
- This resource can be recharged by damaging the enemies. Each successful hit will recharge 1 energy cell.

BULLET

Small and very rare module. People started to call it just 'BULLET' as it looks like one.

- *Limited and purchasable resource.*
- *The player starts with 2 BULLETs and will use 1 or 2 BULLETs per each special attacks.*
- *This resource can only be increased by purchasing it in the shop.*

SHIELD

Hexagon-formed module that created powerful anti-magnetic field, deflecting most metals. Not recommended for normal people.

- *Purchasable resource.*
- *Each shield can prevent attack from enemy once.*
- *The Player starts with no SHIELD at all, but he or she can buy up to 2 SHIELDS at the shop.*

Money



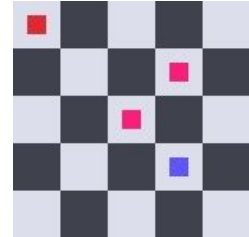
One of the most popular currency units in the world before the apocalypse. Now, no one understands why these papers were so valuable and popular. However, the shop owner still seems to accept them.

- *Limited per each level. Even if the player fails to beat the level, this value is always constant.*
- *Player can buy either SHIELD or BULLET, as long as the budget allows.*

Game Environment

Levels

Each level has own unique tile map, allocated enemies in the tile maps, time limit, and *assigned money*. The player will get better and better to plan their strategy and execute with skills to kill all the enemies within given time limit as they replay the level over and over.



Time Limit

Different time limit is assigned for each level. Player can gain more time by killing the enemies.

Loading Screen

Whenever a loading screen is required, it will show one of the white silhouetted player animations with useful strategy that player can use.

Special Tiles

On the tile maps, there are several special tiles which will disturb or change the player's movement.

- *DEATH TILE will instantly kill the player when the player goes through it.*
- *TRAP TILE will seize the player for a few seconds.*
- *ACCEL TILE will move the player for few tiles with given direction.*

Game Control

Only keyboard is required for character movement and skills.

- Use WASD keys to move the character
 - Use keys while pressing 'SHIFT' key to move a single tile.
- Use ARROW keys to shoot towards 4 directions(up, down, left,right).
 - The player starts with a basic pistol.
 - *Use NUMBER keys to determine what skill to use or weapon to shoot.*
 - *For example, number key 1 sets the player's weapon to the pistol, and number key 2 sets to the shotgun.*

Component Design

Visual Design

Level

Each level consists one tile map and the disintegrating roofs above it.



Player Character

Simplified version of the concept art.



Animations

Game design and character concept significantly decrease the amount of animations needed.

- **Player Character**
 - Idle
 - Attack - Left(Right), Up, Down
 - Dash - Left(Right), Up, Down
- **Weapons**
 - Pistol
 - Shotgun
- **Enemy_Chaser(Enemy_Patrol)**
 - Move - Left(Right)
- **Enemy_Turret**
 - Attack
- **Enemy_Guard**
 - Move - Left(Right)
 - Attack - Left(Right)
 - Guard - Left(Right)
- **02SUCCUBUS32b**
 - Move - Left(Right)
 - Attack(Special Attack included) - Left(Right)
- **Etc**
 - Enemy bullet

Audio Design

Every sounds in this game will help the player to feel the theme of post-apocalypse world. Background musics will be played during the levels, and sound effects will be played whenever the player or the enemies do certain actions such as shooting, dashing and attacking.

Soundtracks

- Almost every soundtracks will contain at least one simple piano melody, keeping the music simple so that not much time will be used to compose one.
- For the battle music, which will be played while fighting with actual enemies, heavy beat and low bass sound will be played as well to keep the player excited and action filled.

Player

- Dying Sound
 - Custom recorded and tuned up, this sound will give the player a creepy feeling when his or her character dies.
- Gunfire Sounds
 - Use high-pitched drum sound for the pistols.
 - *Use low-pitched snare sound for the shotgun.*
- Dash Sound
 - *Sci - fi feeling bass sound combined with wind blowing sound, this sound will give the player the feeling as if they are really moving really fast.*

Enemy

- Turned on(When the level starts.)
- Shooting and melee attacking
- Dying sound

Etc

- *Beep sound will be played when each character of the dialogue is displayed on the screen.*
- *Imitated and simplified sound for the people talking(For example, when the player buys item from the shop owner.). For instance, “hmm” or “ahhh”.*

Behavior Design

Enemy

Every enemy will damage the player when they collide with the player.

- Enemy_Chaser
 - Always chases the player. However, unlike the player, this enemy will ignore the tiles and will go straight towards the player. This type of enemy should be the easiest one in the game.

- **Enemy_Turret**
 - Shoot a bullet to the player periodically. Again, the bullet will ignore the tiles and will go straight towards the player. However, this type of enemy stands it's ground until it dies .
- **Enemy_Patrol**
 - *Patrols between two specified tiles. Formed lines can be diagonal.*
- **Enemy_Guard**
 - *This enemy will ignore the tiles as well and will dash a small amount of distance if the player is close enough.*
- **02SUCCUBUS32b**
 - *Will attack with her huge scythe if the player stays too long in close distance.*
 - *When the player goes too far away, she will either attack certain Rows or Columns of tile map at once(Think it as long lines across the tile map). When her health goes too low, she will attack the whole Row and Column both, creating a huge cross - shaped deadzone .*

Physics Design

Gravity

All game objects will collide using rectangles, but the effects will be decided by a collision table. As this game is 2D top down game, there is no need for gravity. *However, player will feel like there is one as used slugs fall to the ground(there is no actual gravity here).*

Time `PlayerState->PlayerX += Input->dtForFrame*GameState->dPlayerX;`

All motion is frame based, so that every movements performed by the player and the enemies is ensured to be consistent despite of a frame rate change.

Multiplayer Design

'Hello Reaper' is a pure single player game. There will be no multiplayer, not even a local co-op.

Appendices

Tools used.

- **Programming**
 - Visual Studio 2015 for the compiler and debugger.
 - Visual Code for the code editing.
- **Art**
 - Pyxel Edit for the pixel arts.
 - Clip Studio for the concept arts.
- **Music**
 - Auxe for the initial prototype.
 - Logic Pro X for the complete soundtracks.