

HO CHI MINH UNIVERSITY OF SCIENCE - VNU  
FACULTY OF INFORMATION AND TECHNOLOGY

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# GAME PROPOSAL

Subject: Game development

Ho Chi Minh city, November, 2022

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# 1. Title Page

**Game name:** Dinosaur Slayer

**Game proposal:** [19KTPM1-PTGame-Nhom03- Proposal](#)

**Tag line:** jurassic shooting dinosaur

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## 2. Game overview

**Game concept:** Dinosaur Slayer is like a Rambo game but in the Prehistoric age.

**Description:** Players take the role of character, travel through space to prehistoric times, hunt dinosaurs to get material for making medicines to cure diseases of the whole world.

**Target Audience:** kids 12+

**Genre(s):** side scroll shooting

**Platform:** PC Mobile

### Game Flow Summary

- Joystick (left side) to movement
- Button (right side) to functional skill
- Only move forward (right side)
- Players clear the map, get items to craft equipment and rescue Princess.



Figure 1: Rambo Game

### Look and Feel

- Look and feel:
  - Light theme, attract
  - Funny with sound effects.
  - Mellow but sometimes there will be a climax with intense combat.
  - Exciting when craft equipment, paint gun, trace equipment.
  - You can learn knowledge about dinosaurs
  - Creativity
- Visual style: cartoon 2D

## 3. Gameplay

### 3.1. Objectives

The game has a single objective which is to complete each level. Players can try to clear each level faster to gain more bonus items. The most important goal is to **find an antidote to the virus** that is prepared from a rare plant called Hitocisin and **return to the future to save the world**.

## 3.2. Game Progression

The game starts with the player using a basic gun to eliminate the enemy. However, later on, players will be able to create more diverse, stronger and more destructive guns. And in the end will find the plant that the player needs to find to make an antidote to a serious disease.

## 3.3. Puzzle Structure

- Game has simple puzzles like **pushing a log** for players standing on it to have higher ground.
- Players **use a musical instrument** to wake up dinosaurs blocking the road.
- **Shooting a bullet to a tree** to drop items on the tree.

## 3.4. Strategic versus Tactical

- **Elemental advantage:** The player can fire different kinds of bullets to deal more damage to a certain enemy.
- **Pick-up:** The player can pick-up supply items on each level, or health pack to recover your life point.
- **Drop:** When player kill enemy, its will randomly drop item
- **Eat:** Eat food to recovery health
- **Update:**
  - Range, power,... of weapon
  - Ability power
  - Player's information: health, speed, power,...
- If do not have **Bullet**, player can not use **Gun**, beside player can use melee weapon

## 3.5. Supporting Investments

Besides the goal itself is to get to the end of the map, the game may ask the person in charge of side quests.

Example: Game can give the player a quest to eliminate a specific enemy, or collect some specific material on the map.

## 3.6. Shadow cost

- Use `coin` to buy item
- Use `Experiment` to update player's level -> update damage, health, life,....
- Complete mission to reward prize (Food, Wood, Coin,...)
- Prehistory has wood, iron, charcoal, and food.
  - Early on, Food, Wood and Coin hard to find
  - Mid-game, Food and Wood easy to find
  - End-game, no Food
- Find `Hitocisin plant` to come back future for rescue world

# 4. Mechanics (Key Section)

## 4.1. Rules

Rules described in: `start menu`, `pre-game`, `mission`, `instruction`,...

FIELD	RULE
Requirements	<ul style="list-style-type: none"><li>• Number of players (1-2 Players)</li><li>• Playing time (approximate 10-15 mins/round)</li><li>• Age (12+)</li></ul>
Win	<ul style="list-style-type: none"><li>• Mission: through the map with the allotted <code>time</code> and <code>mission</code></li><li>• Game: preparation of <code>antidote</code></li></ul>
Lose	Over <code>life</code> , over <code>health</code>
Choose character	<ul style="list-style-type: none"><li>• At initialization account</li><li>• Choose 1 in 2 characters:<ul style="list-style-type: none"><li>◦ Male</li><li>◦ Female</li></ul></li></ul>

Health and life	<ul style="list-style-type: none"> <li>• Each game have 3 life</li> <li>• If health become 0, you will death and lost 1 life</li> <li>• If over life and health become 0, you will <b>Lose</b></li> <li>• Health can be recovered by <b>medicine</b> or <b>apple</b> (food)</li> <li>• Life can be recovered by <b>item drop</b> while playing or <b>complete mission</b></li> </ul>
Movement	<ul style="list-style-type: none"> <li>• Basic (Left, Right, Up, Down)</li> <li>• Move forward (right side)</li> <li>• Can not back to previous (left side)</li> </ul>
Mission	<p>Complete to:</p> <ul style="list-style-type: none"> <li>• Pass the map</li> <li>• Get experience, items, coins,...</li> </ul>
Action	<ul style="list-style-type: none"> <li>• Climbing vines, rope, ladder,...</li> <li>• Push Box, Rock,...</li> <li>• Damage to enemy</li> <li>• Pick-up/Drop item</li> <li>• Craft equipment, skin, painting color,...</li> </ul>
Craft	<p>Use specific items to craft equipment, painting color,... (Base on <b>Craft instruction</b>)</p>
Trade	<ul style="list-style-type: none"> <li>• Trace anything Player have with another Players</li> <li>• Player can view another Player's inventory, then send request to trace theme</li> <li>• Tracing form: <ul style="list-style-type: none"> <li>○ Item → equipment</li> <li>○ Equipment → equipment</li> <li>○ Coin → equipment</li> </ul> </li> <li>• No limit of trade, player can trace anything as long as they accept (eg: banana → gun)</li> </ul>

## Shopping

- Buy: item, character, equipment, painting color
- Sell: anything item user own

## 4.2. Model of the game universe

- Player can kill monsters
- Monsters can damage and kill the Player
- Combined items can create weapons, skins, etc.
- Weapons that deal damage to monsters
- The character has a health bar that shows the current health status.
  - Health to 0, character loses life
  - Life shows the number of chances that the player can continue to play, the life is over, the player has to play from the beginning (reset all data)

## 4.3. Physics

- Gravity: low jump, but when use skill, you can resist gravity and jump very high
- Collisions: you are pushed back after being hit
- Velocity: speed of enemy up to chase and catch you when they see you
- Momentum: when you run so fast and stop at slippery floor, you need some space for completely stop

## 4.4. Economy

- Use coin to buy item in shop
- Use anything user have (coin, item, equipment, material,...) to trade with another player

## 4.5. Movement

- Movement:
  - Players only move forward (right side) map. They control allow them to move slowly or quickly either forwards or backwards.
  - Player can push to move box or rock

- Players can climb ropes to climb up
- Pick-up/drop:
  - The user can choose to pick up any item that they are standing near. This item will appear between their mandibles on the screen to indicate that the user is holding something.
  - The user automatically pick-up coin when passing by it.
  - If inventory is full, players can drop any item to clear 1 slot, then allow the user to pick-up another item on the map.
- Fighting:
  - Use equipment to attack the enemy.
  - Use skill in emergency cases.
  - Drink water or eat apples to recover health.
- Communication:
  - Can talk to another Player by `mic` or `chat`

## 4.6. Objects

- Use can move `box` or `rock` by push them
- Players can `climb` `ropes` to climb up

## 4.7. Actions

- Joystick (movement)
  - `Left`, `Right`: move left, right respectively (auto push Box, Rock,... when touch it)
  - `Up`, `Down`: climb up/down rope, ladder,...
- Button (function)
  - `Shoot`: shoot (only shoot in a straight line)
  - `Communicate`: hold and pull to select signal
  - `Jump`: Jump
  - `Skill`: hold and pull to select skill
    - `Hold`: this button will expand to specific skill button
    - `Pull`: to select specific skill



Figure 2: Pull



Figure 3: Skill expanded

## 4.8. Combat

- The player has a visible HP bar, while the enemies' are invisible
- For each time the player's bullet hits an enemy, they (the enemy) lose an <TBD> amount of HP.
- The player's weapon takes effects on the damage and the damage deal rate (DMG, ASPD) to the enemies.
- The same is applied to the player.
- When either the player's or the enemy's HP reaches 0, they die. The game moves to Lost State once the player dies.

## 4.9. Replaying and saving

- Each level have checkpoint → You can respawn at checkpoint when you die
- Save game progress at checkpoint.
- Save parameter: Life, Health, Item, Coin, Skill,...
- Endgame, save Player's Name, Score

## 4.10. Game Options

- Pause/Resume
- Music
  - Mute/Unmute
  - Change background music
- Quit: Leave game, when you continue the game, you must play at the beginning of this level

## 4.11. Screen Flow

Diagram: [Screen flow diagram - FigJam](#)

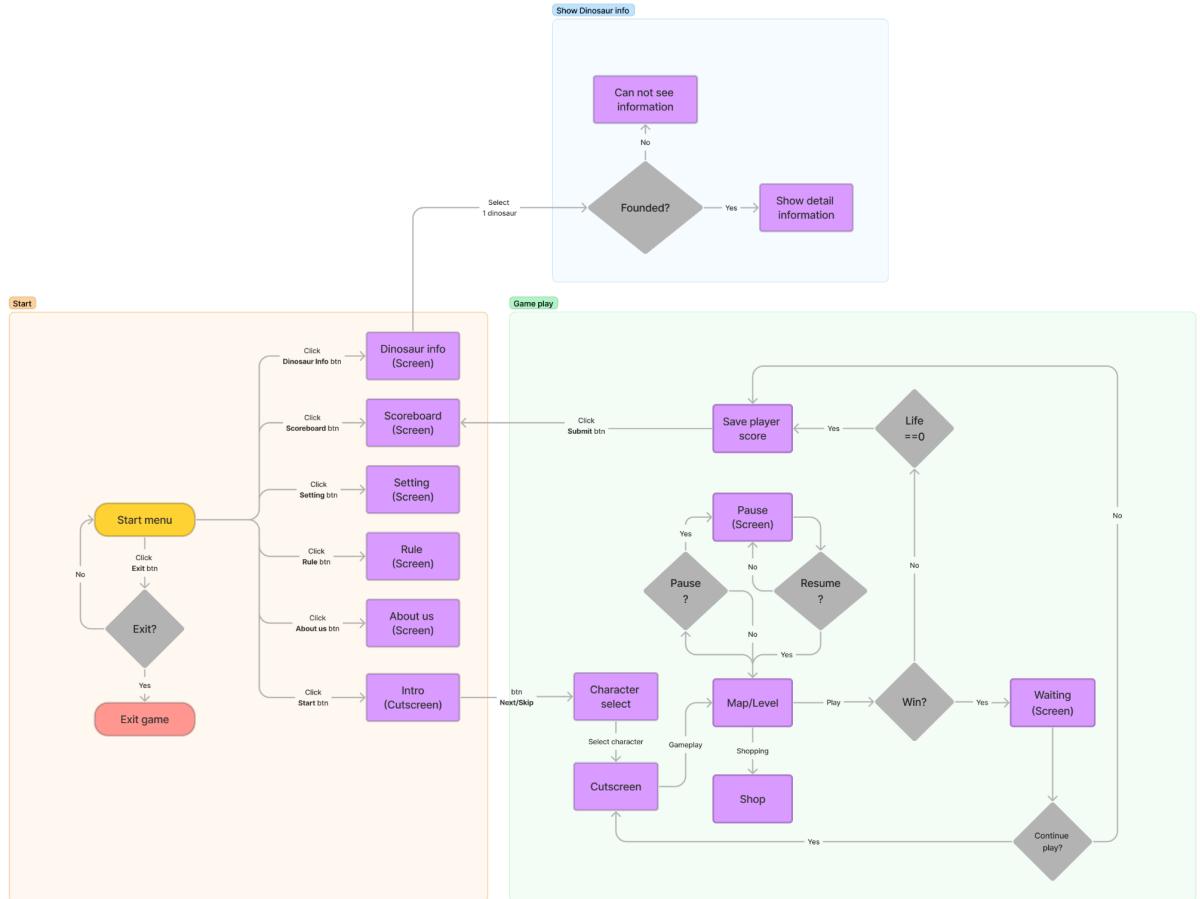


Figure 4: Screen flow diagram

## 5. Story and Narrative

### 5.1. Backstory

In 2300, appear new virus called **Rusvi**, Rusvi's appearance make the world chaotic because this is a completely new virus. Scientist is hard working with 200% power but still can not preparation of antidote due to the lack of preparation materials, this material can only be found in Africa during the Stone Age (2 million years ago). With the danger of going back in time to the past and the danger of confronting the dinosaurs, no one will go, except you. You are solider, the chosen one, who can save the world by find material to cure diseases of the whole world. Let's save the world!!

## 5.2. Game story progression

### Chapter 1: Pandemic

- In 2300, World appear pandemic - Rusvi virus
- Player time travel back to prehistory
- Player fight enemy
- Obtain the material

### Chapter 2: Save the world

- Back to present.
- Beat the Final boss. (Doctor .F who create Rusvi with fantastic skill)
- Preparation of antidote.
- The world is saved.

# 6. Game Worlds

## 6.1. General look and feel of the world

In the early chapters, the player is put in an antiquity atmosphere. There are volcanoes and forests in the background, sometimes with dimorphodon flying above the sky.

Right behind the player are trees, bushes, and stones, sometimes with signs of human livings such as torches, campfires, and a few broken time machines, dedicating that this place has been time traveled before (or after?).

The world is in a modernized, sci-fi environment but is contaminated by the Rusvi virus in a poisonous atmosphere.

Far away are collapsing buildings that were mostly musty and mold due to the abandonment.

## 6.2. Areas

- **Forest (prehistoric):** The first area where the player is time-traveled to. The player then gathers around this area to find the said material. Finishing this area progresses the story, making them time-traveled back to the present, which is the last level.

- **Collapsed buildings:** This is the final boss area where the Rusvi had already contaminated the world. Killing the Rusvi creator here will progress to the final cut-scene area.
- **Modernized city:** Are the present where Rusvi had not happened. This is the game's last cutscene.

### 6.2.1. How relate to the rest of the world

- **Forest (prehistoric):** This area is used throughout the whole game, except for the last chapter.
- **Collapsed buildings:** This area only showed after the player obtained the material from the past (the prehistoric). Clearing this area shows the modernized city cutscene..
- **Modernized city:** Last cutscene. No further information is specified.

## 7. Character

Character	Backstory	Appearance
Main character	<p><b>Name:</b> Fuka</p> <p><b>Back story:</b> The soldier, who come back to prehistory to find medicine's material to save the world</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Close combat ability, high endurance</li> <li>• Weapon: sword</li> <li>• Attack range: 2m</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Attack skill:</li> <li>• Support skill: <ul style="list-style-type: none"> <li>○ Health recovery</li> <li>○ Speed increase</li> <li>○ Defend increase</li> <li>○ High jump</li> <li>○ Special: Lava rain (clear all enemies)</li> </ul> </li> </ul>	

Enemy	<p><b>Name:</b> FlyDragon</p> <p><b>Back story:</b> a king of the sky</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Agile, nimble</li> <li>• Attack from the sky</li> <li>• Height: 4m</li> <li>• Power: medium</li> <li>• Attack range: 30m</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Attack from long distance</li> </ul>	
	<p><b>Name:</b> T-Blue</p> <p><b>Back story:</b> a king of the ground</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Slow attack, great power</li> <li>• Height: 4m</li> <li>• Power: High</li> <li>• Attack range: 10m</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Powerful bite</li> </ul>	

	<p><b>Name:</b> Velociraptor</p> <p><b>Back story:</b> a genus of small dromaeosaurid dinosaur.</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Quick attack, small power, hunt in group</li> <li>• Sickle-shaped claws</li> <li>• Height: 0.5m</li> <li>• Power: Low</li> <li>• Attack range: 2m</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Quick bite</li> <li>• Group hunting</li> </ul>	
Middle character	<p><b>Name:</b> Bill</p> <p><b>Back story:</b> Dinosaur traitor, for money selling out teammates</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Smart, Funny.</li> <li>• Own fantastic store</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Sell: all item you need</li> <li>• Buy: all item you do not need</li> </ul>	

	<p><b>Name:</b> Brachiosaurus</p> <p><b>Back story:</b> a genus of small dromaeosaurid dinosaur.</p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• Gentle, slow, huge, long neck</li> <li>• Not attack anything</li> <li>• High: 30m</li> <li>• Power: none</li> </ul> <p><b>Abilities:</b></p> <ul style="list-style-type: none"> <li>• Provide Health for player recovery</li> </ul>	
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## 7.1. Artificial Intelligence Use in Opponent and Enemy

- Dropped item (health,...)
- Enemy behavior: the enemy will follow and choose the correct behavior against the player (attack/defend)

## 7.2. Non-combat and Friendly Characters

- Shop owner (friendly Bill)
- Brachiosaurus dinosaur

# 8. Levels

## 8.1. Level 1

### 8.1.1. Synopsis

The player's focus in this level is to clear the hostility around the starting area. Then, take control of the surrounding area to build tents or resting areas for the expedition team. At the end of the stage, the player must kill the Boss Hermit crab, an enormous crab.

## 8.1.2. Objectives

### Main Objectives

- To kill the Hermit Crab
- Solve Puzzles

### Secondary Objectives

- To collect food for the expedition's team
- To collect wood for campfire

## 8.1.3. Details of what happens in the level

- Starting the level, the Player and the expedition team start at a beach.
- Players explore the surrounding area and encounter a group of **Velociraptor**.
- Players can choose two ways to reach the end of the level. One way is through a forest, another is through the cave.
- Each route has a different kind of entity for the player to encounter.
- In the forest, the most common enemy is **FlyDragon**.
- In the cave, mutant crabs will crawl around the cave.
- At the end of the level, there is the boss, the big hermit crab.

## 8.1.4. Map

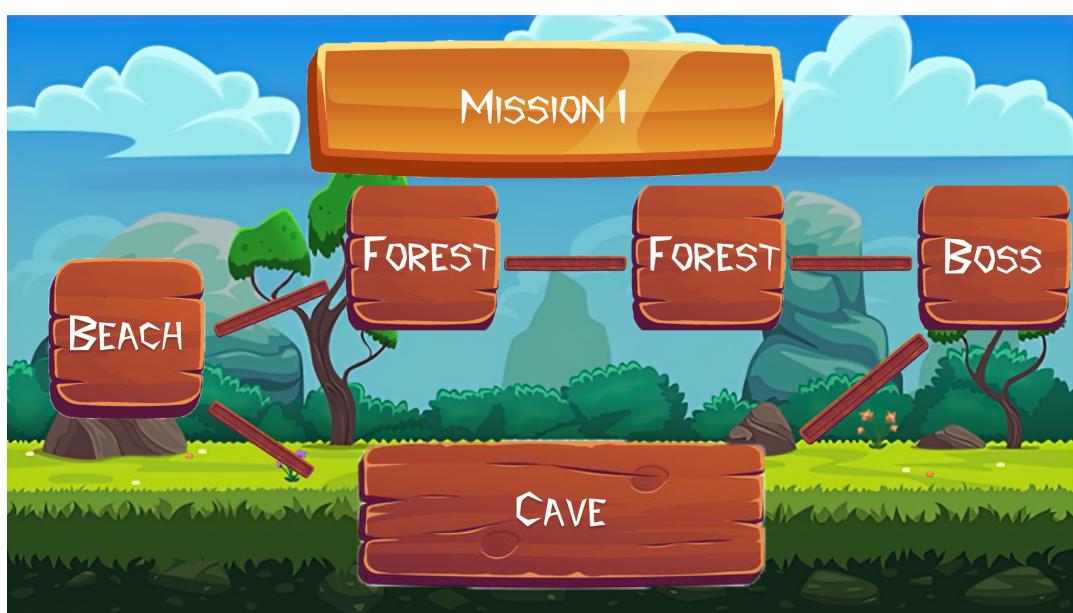


Figure 11: Mission 1

## **8.2. Level 2**

### **8.2.1. Synopsis**

After the Player secures the safe base, the Player continues to explore the surrounding area and book a water source for the expedition's team. Finally, Players make their way to the ice mountain. At the end of the level, the Player confronts Mono-eyes, which is a Triceratops that has lost one of its eyes.

### **8.2.2. Objectives**

#### **Main Objectives**

- To kill the Mono-eyes
- Secure a water source

#### **Secondary Objectives**

- To collect food for the expedition's team.
- Eliminate rare pink **Velociraptor** to find material for the research team.

### **8.2.3. Details of what happens in the level**

- At the start, players start at the base.
- There is a group of **Velociraptor** which will hinder you.
- Players can find a secret way to enter the cave to find rare items which will help players later.
- However in that secret way, there will be a secret boss pink **Velociraptor**.
- At the end of the stage, the player faces the mono-eyes.
- Players make their way to the next stage.

#### 8.2.4. Map



Figure 12: Mission 2

### 8.3. Level 3

#### 8.3.1. Synopsis

After the player makes their way to a volcanic area, Where Hitocisin plants grow. However, The Jupiter King - A T-Blue dinosaur - lives there. Therefore, players have to eliminate the boss to get the plant.

#### 8.3.2. Objectives

##### Main Objectives

- To kill the Jupiter King
- Find Hitocisin plant

##### Secondary Objectives

- Eliminate the rarest rainbow Velociraptor to find material for the research team.

#### 8.3.3. Details of what happens in the level

- Players start at Volcano foot and process to the top.
- Players eliminate hostile entities on their way.
- Player confronts the boss.

- Players secure plants and brew antidotes.
- Return to the present timeline .
- Everyone got cured.
- Happy ending.
- Credit.

### 8.3.4. Map



Figure 13: Mission 3

## 9. Interface

### 9.1. Visual System

#### 9.1.1. Menus

##### Main menu

Has Play, Settings, Tutorial, Library, About us and Quit buttons.

- Clicking the Play button when there is no saved gameplay in the memory will move the player to the level-select scene, otherwise, a panel is shown up to ask if the player wants to continue from the last checkpoint.

- Clicking **Settings** open the settings panel. Allow the player to adjust game settings likely: background music, music volume,...
- Clicking the **Tutorial** button will show the tutorial panel, which instructs the player to control the character, the game's target and all game's rules.
- Clicking the **Dinosaur Information** button opens an information panel, which shows all the detailed information about the dinosaur the player has met. Information properties include: Height, Weight, Character, Behavior,... (based on [Wikipedia](#)), and Description (fiction).
- Clicking the **About us** button will show EST team, Game project information.
- Clicking the **Quit** button will exit the game.

### **Level-select**

Contains the list of levels, the select button and the back button.

In the list, only the levels that the player has reached so far are unlocked.

When clicking on a level, the player can then press select to start accessing to it

The back button can be pressed at any given time to get back to menu.

### **Library**

Shows the details of the in-game characters. Swiping left and right will move the info to the next character

Also has the back button to go back to menu.

### **9.1.2. Camera model**

The game uses a perspective camera to show the depth in the background. Possibly have a UI camera as well to render particle systems onto the UI screen.

## **9.2. Control System**

### **Gameplay Scene**

The HUD is divided into 4 sections: Top Left, Top Right, Bottom Left, Bottom Right

- **Top Left:** The player HP's bar, ammo, weapon types, etc..
- **Top Right:** currency, Settings Button. This section may have monetized buttons to encourage the player to click in as well if any

- **Bottom Left:** The movement joystick/numpad. Note that the movement area is not restricted to only the joystick/numpad's area itself, which means the player can move as long as their input (finger) are on the bottom left of the screen.
- **Bottom Right:** Shoot, Dash, Jump and Skills. As indicated in Mechanics/Actions, the player can shrink or expand the skills button to use the corresponding skill. The ammunition reloader button may appear here as well.

### **Shop scene**

- Upon clicking on the item with its price, a panel will be shown up to confirm if the player is going to buy this item.
- The back-to-gameplay button will be in the bottom left corner.

## **9.3. Audio, music, sound effects**

The game is intended to use sound effects from [Mixkit](#).

## **9.4. Game Art**

Game has pixel 2D style.

## **9.5. Help System**

- Basic mechanics.
- Keyboard control.
- Advantage system to each kind of enemy.