VIETNAM NATIONAL UNIVERSITY

HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY

FACULTY COMPUTER SCIENCE AND ENGINEERING

ASSIGNMENT REPORT

Subject: Game Programming

Archer's Quest

Class: CC01

Student Name: Ngô Bảo Ngọc - 2252536

Ho Chi Minh City, December 2024

Gameplay Overview:

Archer's quest is a fast-paced 2D adventure game where players control an archer named **Aerin** who must traverse dangerous terrain, climb towering obstacles, and fend off different kind of enemies using a bow with shooting mechanics. The game blends platforming elements, dynamic combat, and environmental hazards that test both timing and strategy. As players explore, they'll encounter tricky climbing sections, spikes, and enemies that require jumping over or using different ways to get by.

Genre: Single player 2d Adventure Platformer

Storyline: In *Aerin's Quest*, you play as **Aerin** - the last protector of your land, which has been taken over by dangerous creatures. These enemies have stolen important treasures that keep your kingdom safe and peaceful. Without them, chaos has spread everywhere.

Your mission is to travel through dangerous places, defeat enemies, and collect the lost treasures. Each treasure you recover weakens the invaders and helps bring peace back to your home. If you achieve enough treasures, your land will be free, and peace will return to your people.

Visual Style:

- **Hand-drawn 2D pixel art** with animation for running, idling, shooting and climbing.

State-driven cameras:

- When **idling for 5 seconds** the camera will **slowly zoom in** the character.
- When **shooting or moving**, the camera will **zoom out instantly** for a better view of the environment for the character.

When start **climbing**, the camera will **instantly zoom in** the character.

Gameplay Mechanics:

Interaction and Solo Play:

The game is **single player** focused, with interactive elements that allow players to explore at their own pace and tackle challenges in various ways.

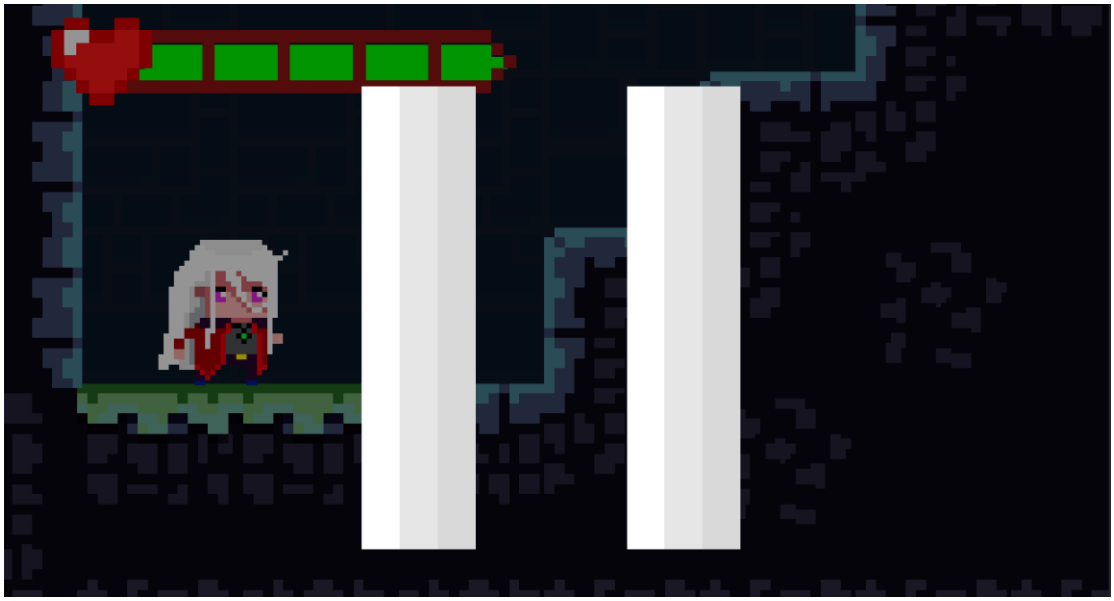
Controls:

- **Input device**: Keyboard only

- The player can press **ESC** key to open the menu settings.

⇨ The player can press "**Main Menu**" to go back to the main menu screen or "**Quit Game**" to quit the game completely (Both options will automatically save the game)

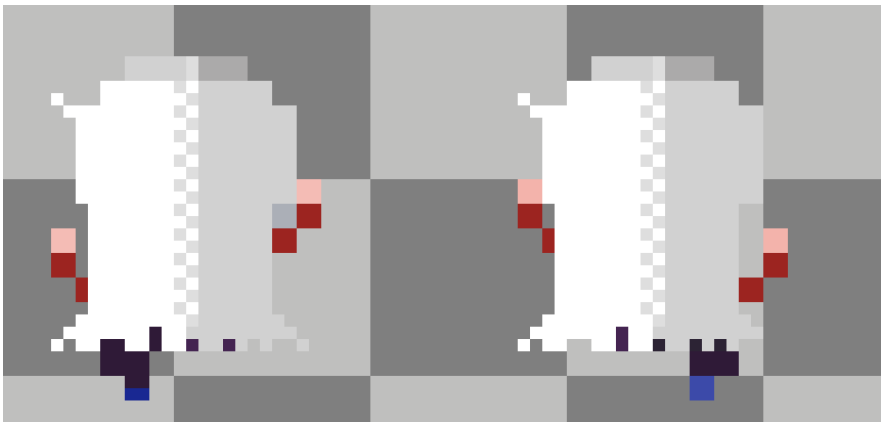
- The player can press **P** to pause the game.



⇨ This will pause everything, including the character's movements, enemies, won't be able to click anything until pressing "**P**" again to unpause.

- **Movement System**:
    - Players can run (**automatically**)
    - Jump (pressing **space**)
    - Go left (pressing "**A**" or "**Left**" arrow key)
    - Go right (pressing "**D** or "**Right**" arrow key)

    - Climb ladders (holding up or down arrow key ("**W**" key or "**S**" key)

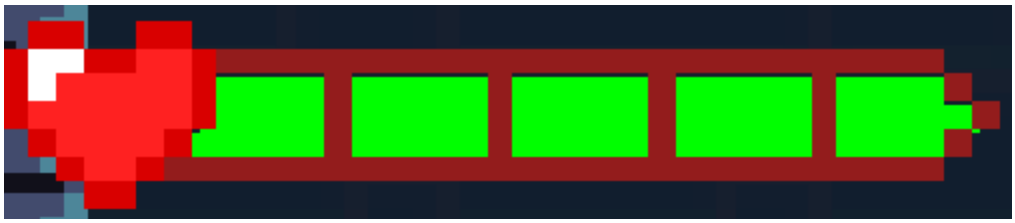


- **Combat System with Bow**:
    - The player can hold the bow (**Shift**) and enter aiming mode (**X**).
    - Releasing the **X** key triggers the shooting action.
    - Arrows will be generated and fly in the direction the player is facing.

- **Collecting coins and treasure chests**:
    - Each level will have **multiple** treasure chest. Running through the coins will automatically collect them.
    - Each level will have **one** treasure chest. Running through the chest will automatically open them.

Health and Damage System:

- **Health Management**: The player starts with 100 health points, which can be reduced by enemy attacks and environmental hazards (like spikes).
- **Condition System**:
    - A **HUD** displays the player's health, updating in real-time. **If health reaches zero, the player dies immediately**.
- **Full HP bar (100 HP):**

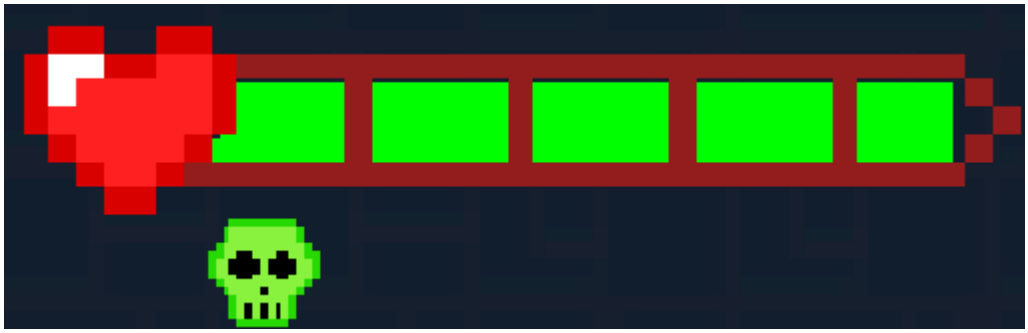


- **Average HP bar (40<Hp<60Hp):**

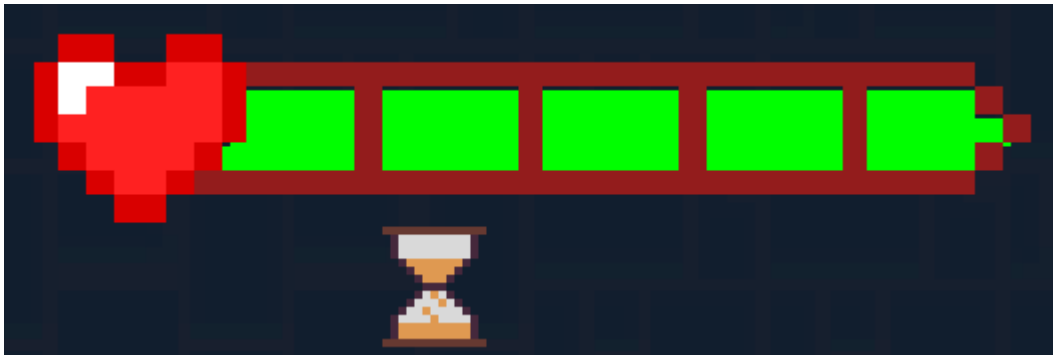
- **Low HP bar (<= 40 Hp):**

  - Sprite components display whether the character is poisoned or slowed by the enemies.

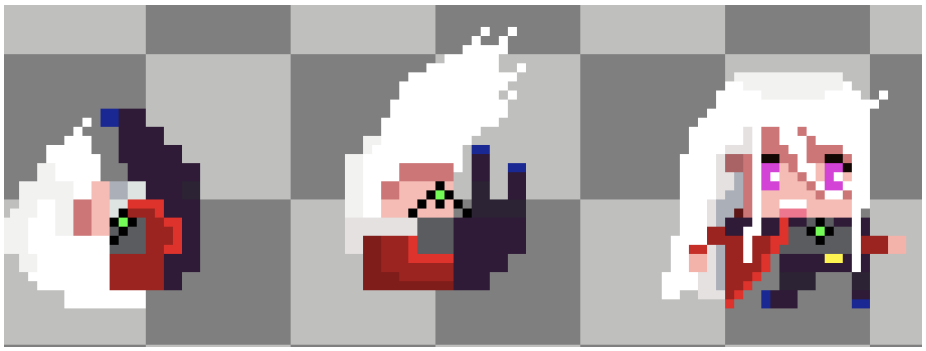
- **Affected by the poisoned state:**



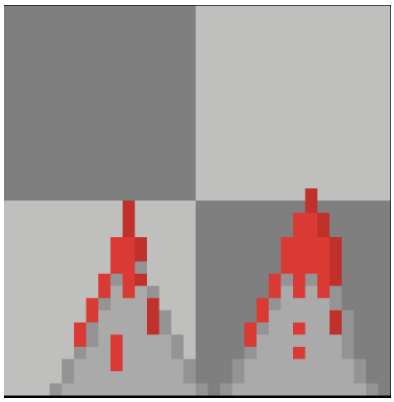
- **Affected by the slowed state:**



- **Death sprites animation:**



- **Environmental Dangers**: Touching spikes results in instant death, encouraging careful movement through hazardous areas.

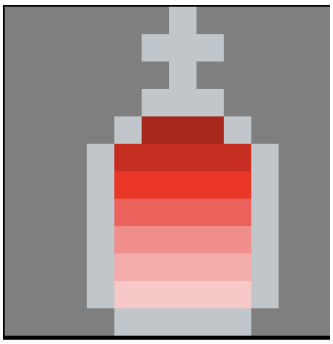


- **Enemies effect**: Different enemies will patrol around each level and touching them will have different effect on the player.
    - **Red enemies**: Touching it take damages **(5/100) points**

- **Green enemies**: Touching it slowly drain the player's health bar (**2 health points per 2 seconds**) until the player find a potion to treat it, which also automatically heal back to **100 health points.**

- **Blue enemies**: Touching it **slow players down for a period of time.**

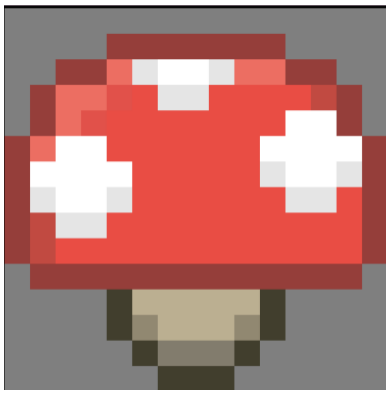
- **Potions:** Different potions have different cure and effect on the player (will automatically pick it up by running through)
  - **Red potion:** Give the player **50 health points** (1/2 the health bar)

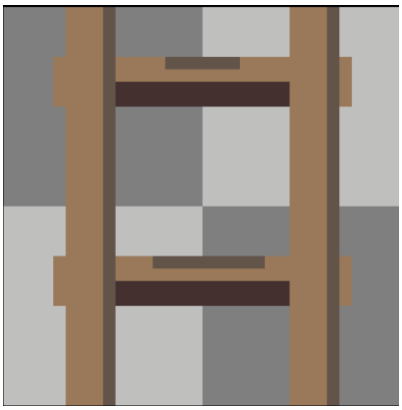


  - **Green potion**: Cure the player **poisoned** state (which is caused by the **green enemies**)

Navigate to higher platforms by ladders:

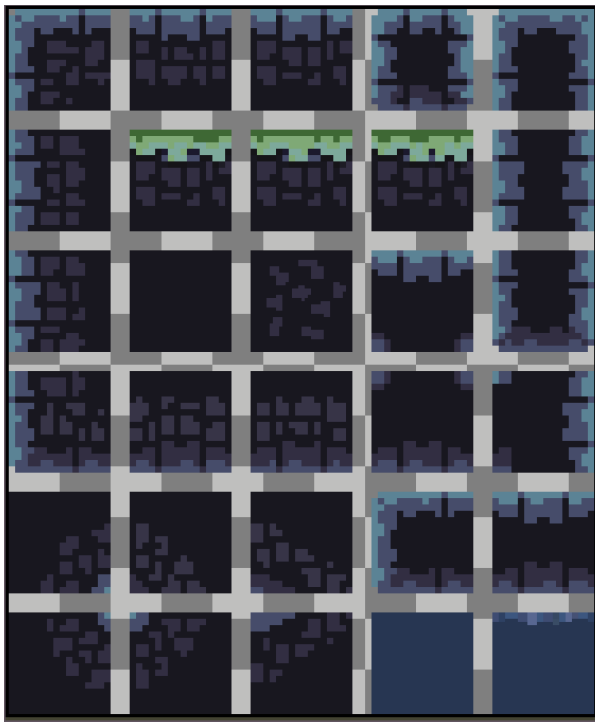
- **Navigate to much higher platforms**: The player can navigate up much higher platforms by **climbing ladders**, **jumping on the bouncy mushrooms**.



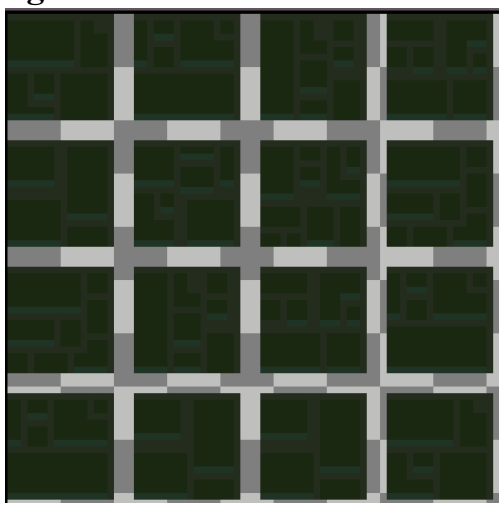


- **Other platforms**: The player can walk on it like normal
    - The platforms and background sprites are from https://assetstore.unity.com/packages/2d/environments/super-platformer-assets-42013?srsltid=AfmBOop-4YAGzixBpBldReUy4Bp9qlIUQ6yzv0hRQdEXfNvCfPuCMWu3

- The sprites of the **platforms**:



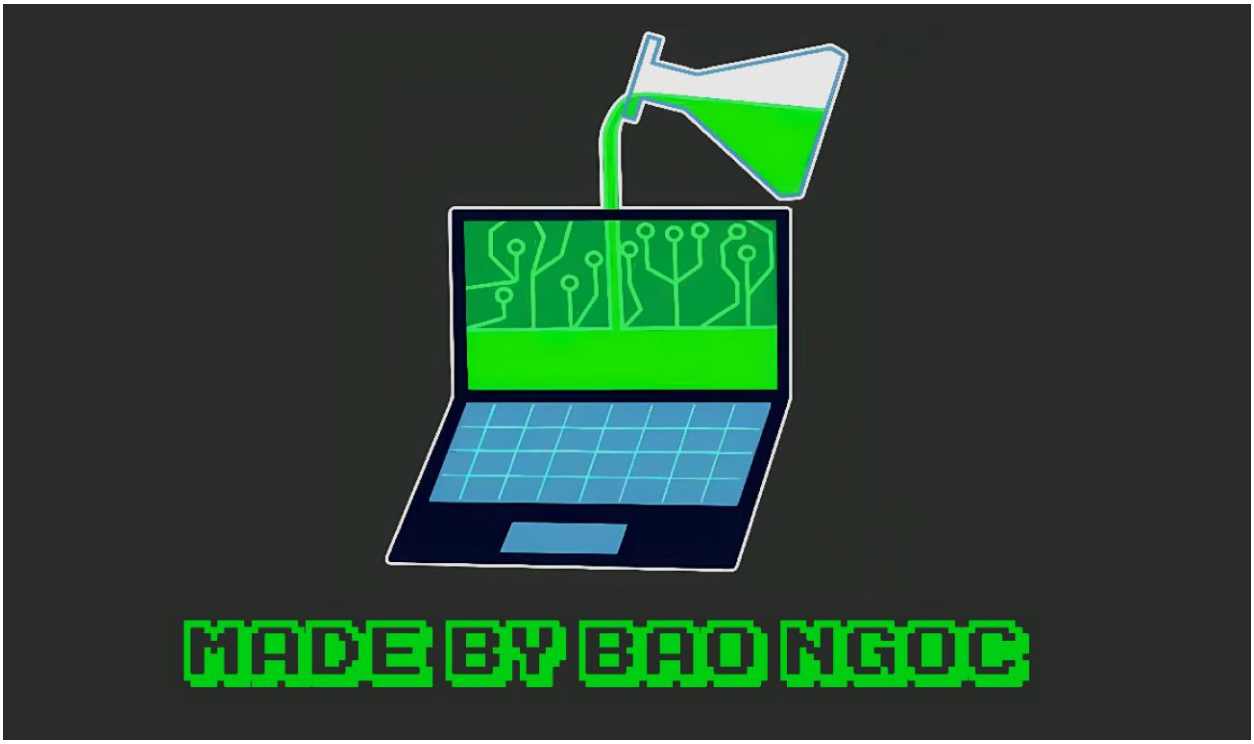
- The sprites of the **background:**



Going through each level:

- The player **can only** go to the next level when they have opened the **treasure chest** of that level.
- **Going to the corner of the other side** of the level will automatically go to the next level.
- **Dying** will **reset everything** and go directly back to the start screen.

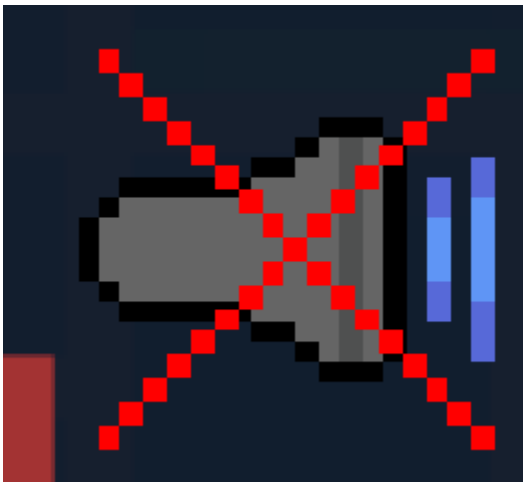
Intro screen:



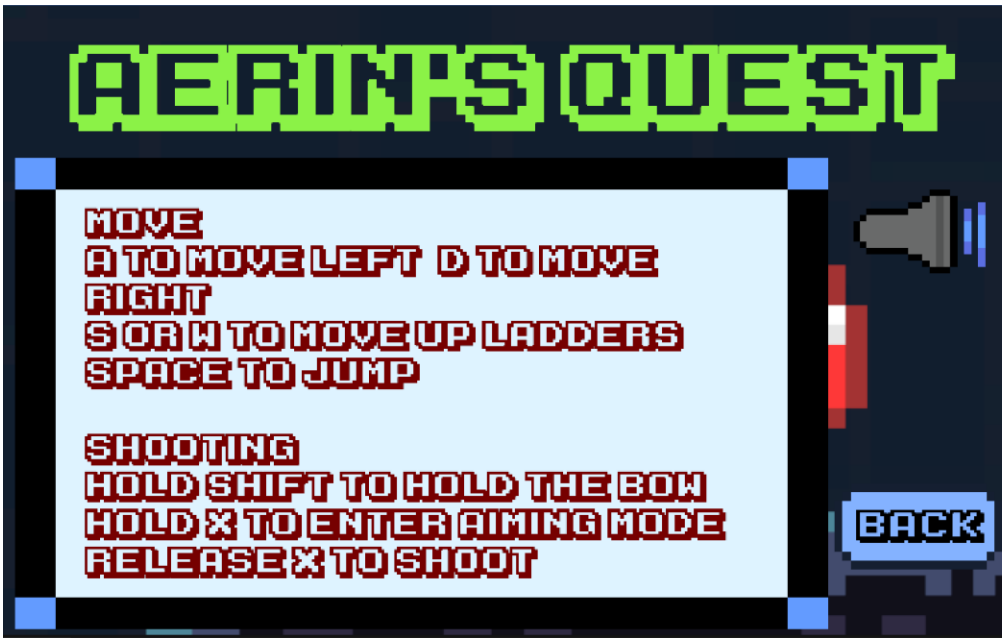
Start screen:

- The player can see **the controls**.
- The player can **continue their last save point** (save points are **after** losing hp, getting affected by the enemies or beginning a new level)
- The player can **start the game** (which **reset everything**)

When pressing the speaker to mute the sound:



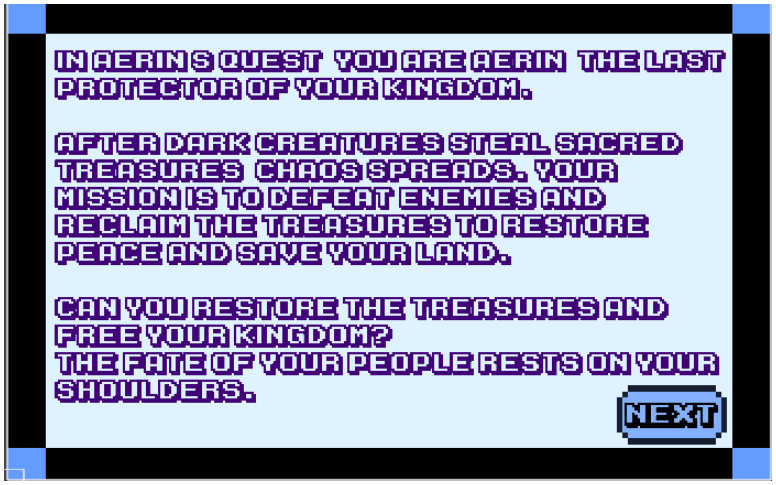
When pressing the controls:



⇨ Clicking **Back** will go back to the **start menu screen**

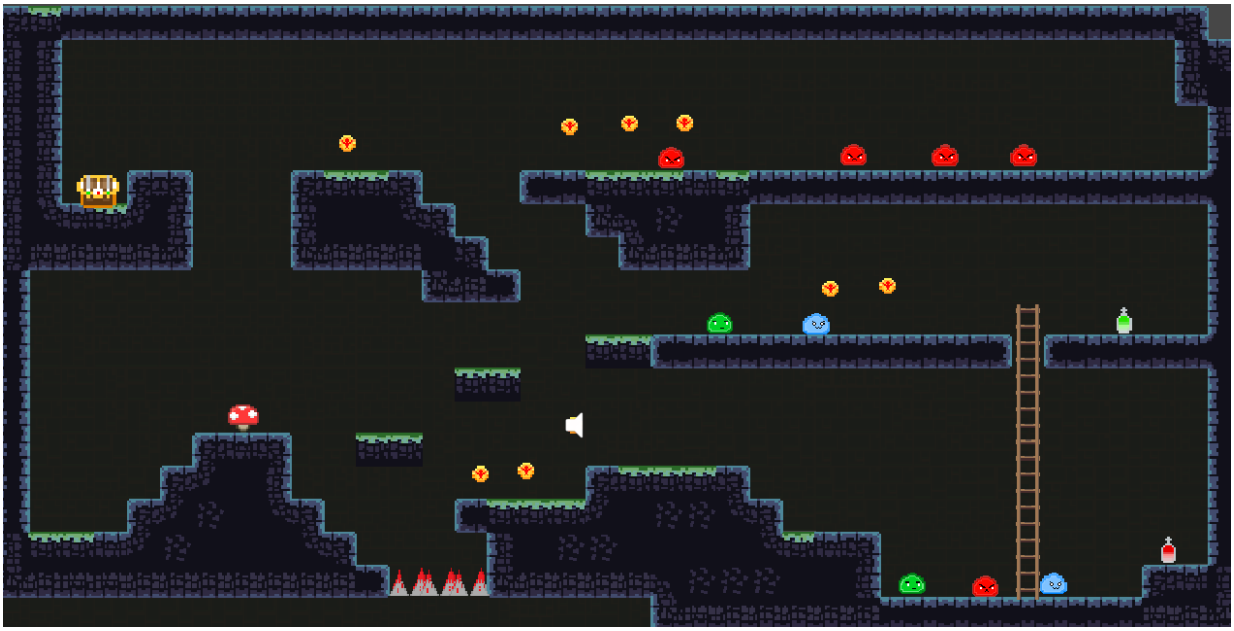
Storyline Screen:

After clicking **New Game**, we will be directed to the **storyline screen**



⇨ Clicking **Next** will lead to **Level 1**.

Level 1:



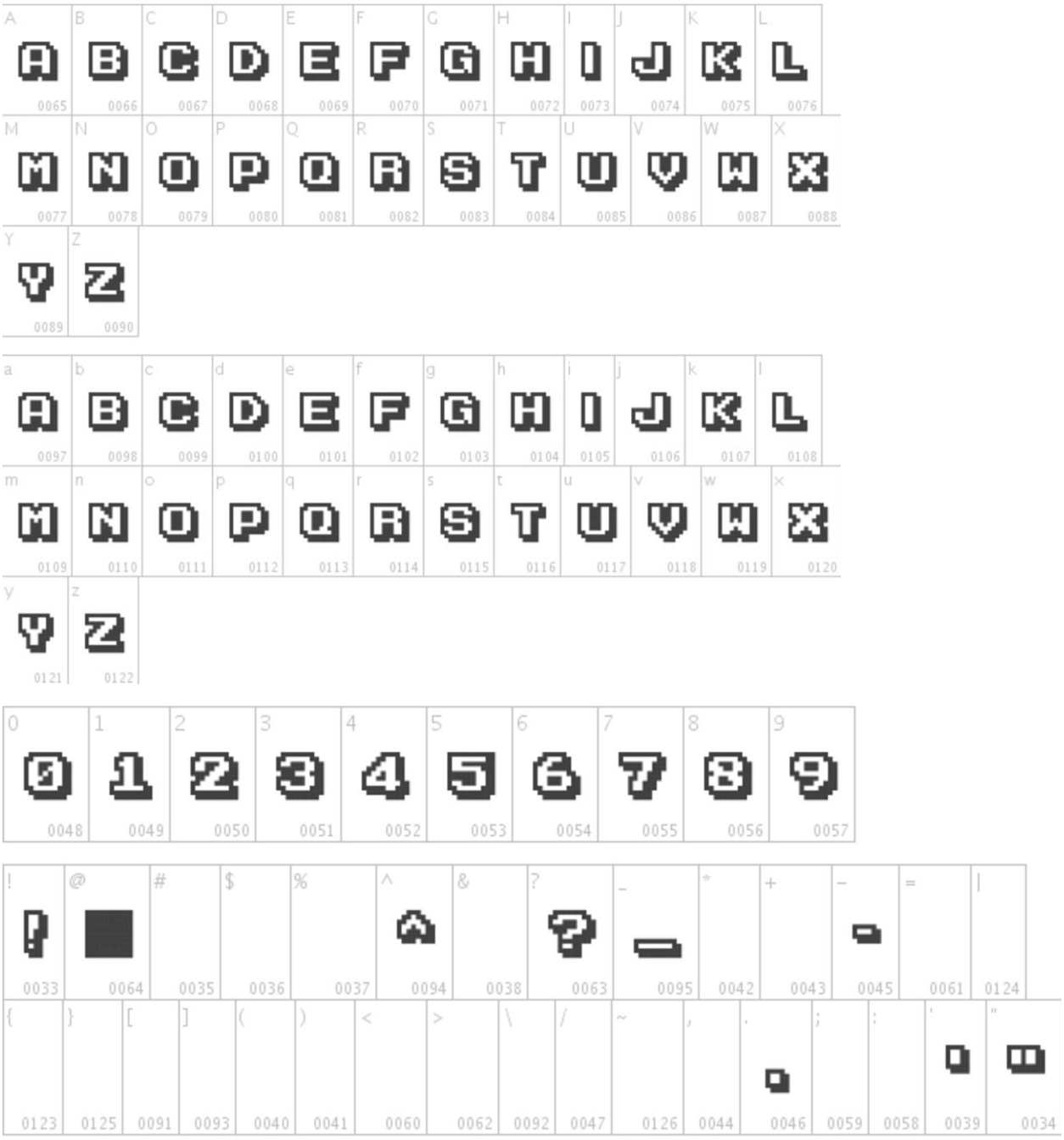
Level 2:

End screen:

- The player will see the **number of coins** they collected and the **number of enemies** they defeated and **how many they are left**.

- The player can **play again** (equivalent to **starting a new game**) or go to the **main menu** (which is the **start screen**)

The fonts:



The font is called Karmatic Arcade is from this free source for **Personal & Commercial Use**: https://www.fontsc.com/font/karmatic-arcade

Sound effect:

I do not have the music, but I do have the sound effect for some actions in the game, the sound effect I got it from the online free source:

Coin pickup: https://pixabay.com/vi/sound-effects/coin-recieved-230517/

Bow loading: https://pixabay.com/vi/sound-effects/bow-loading-38752/

Arrow shooting: https://pixabay.com/vi/sound-effects/bow-and-arrow-shoot-sound-effect-1-239700/

Game Start: https://pixabay.com/sound-effects/game-start-6104/

Enter new level: https://pixabay.com/vi/sound-effects/new-level-142995/

Game Over: https://pixabay.com/vi/sound-effects/game-over-arcade-6435/

Mushroom Bounce: https://pixabay.com/vi/sound-effects/retro-jump-3-236683/

Drink Potion: https://pixabay.com/vi/sound-effects/glug-glug-glug-39140/

Climb Ladders: https://pixabay.com/vi/sound-effects/ladder-82581/

Opening Chests: https://pixabay.com/vi/sound-effects/90s-game-ui-6-185099/

Game Win: https://pixabay.com/vi/sound-effects/8-bit-victory-sound-101319/

Game technical:

Coding languages: C#

Game engine: Unity

Target audience: Suitable for players of all ages

Device(s) support: PC (Windows, Mac, Linux)

Pricing: Free-to-play