GRAPHICS UNITY PROJECT 2024

3D Puzzle Adventure Game

ECE TUC

PROJECT REPORT

Student: KARALIS ASTERINOS

AM: 2020030107

Project name: Legend of Aria

Google Drive link:

https://drive.google.com/file/d/1guVdqSYUi3NnuwiCMWxWuR47gPu7qur0/view?usp=drive_link
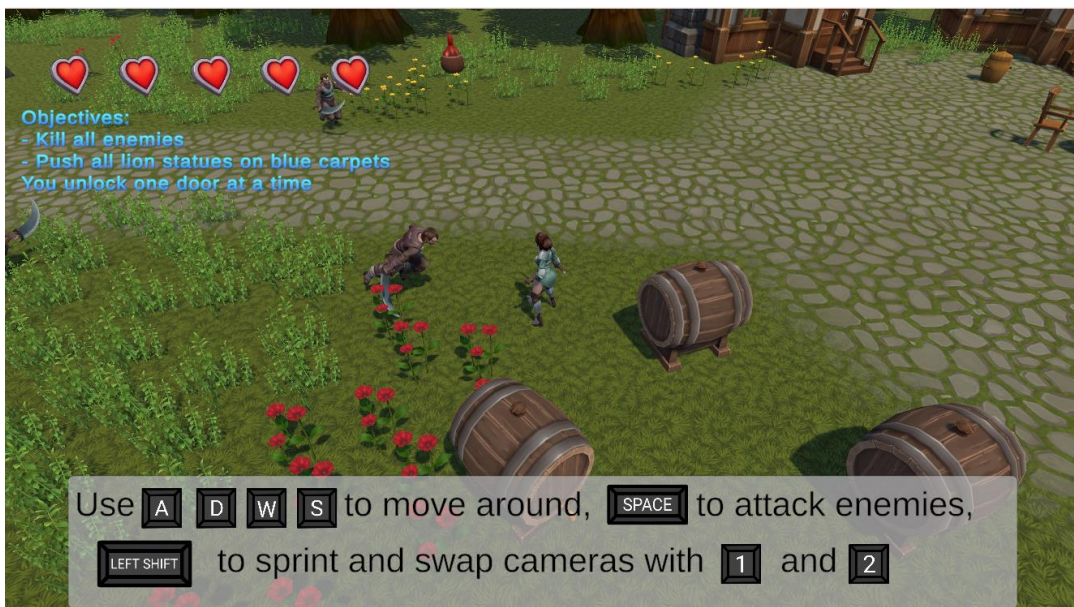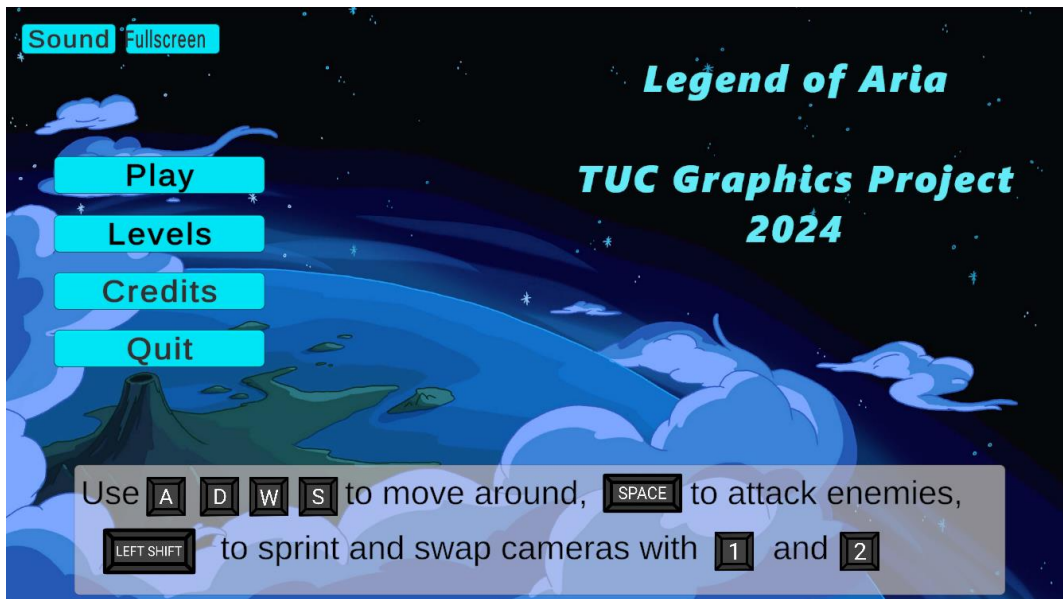
Github link:

https://github.com/Asterinos1/Graphics-Unity-Project

Game Design:

- **Playable Character**: The play controls Aria, a female warrior in a cartoon theme fantasy world.
- **Setting**: Medieval period village, mountain, castle.
- **Goal**: The player moves from left to right on each level, where they must eliminate all enemies and push all lion statues on top of the blue carpets to unlock doors to proceed.
- **Scenario**: Aria must fight all enemies (Hostile NPCs who chase and attack her) and push all lion statues on the blue carpets to advance through the level. Aria can suffer damage from the enemies but she can regain health by picking up health potions scattered around the level. If she dies either by getting killed or falling off the map (level2) the level restarts. Each level is different, and no items/stats are transferred from one to another. Each level is split into 2 parts.

There are 3 playable levels in the game:
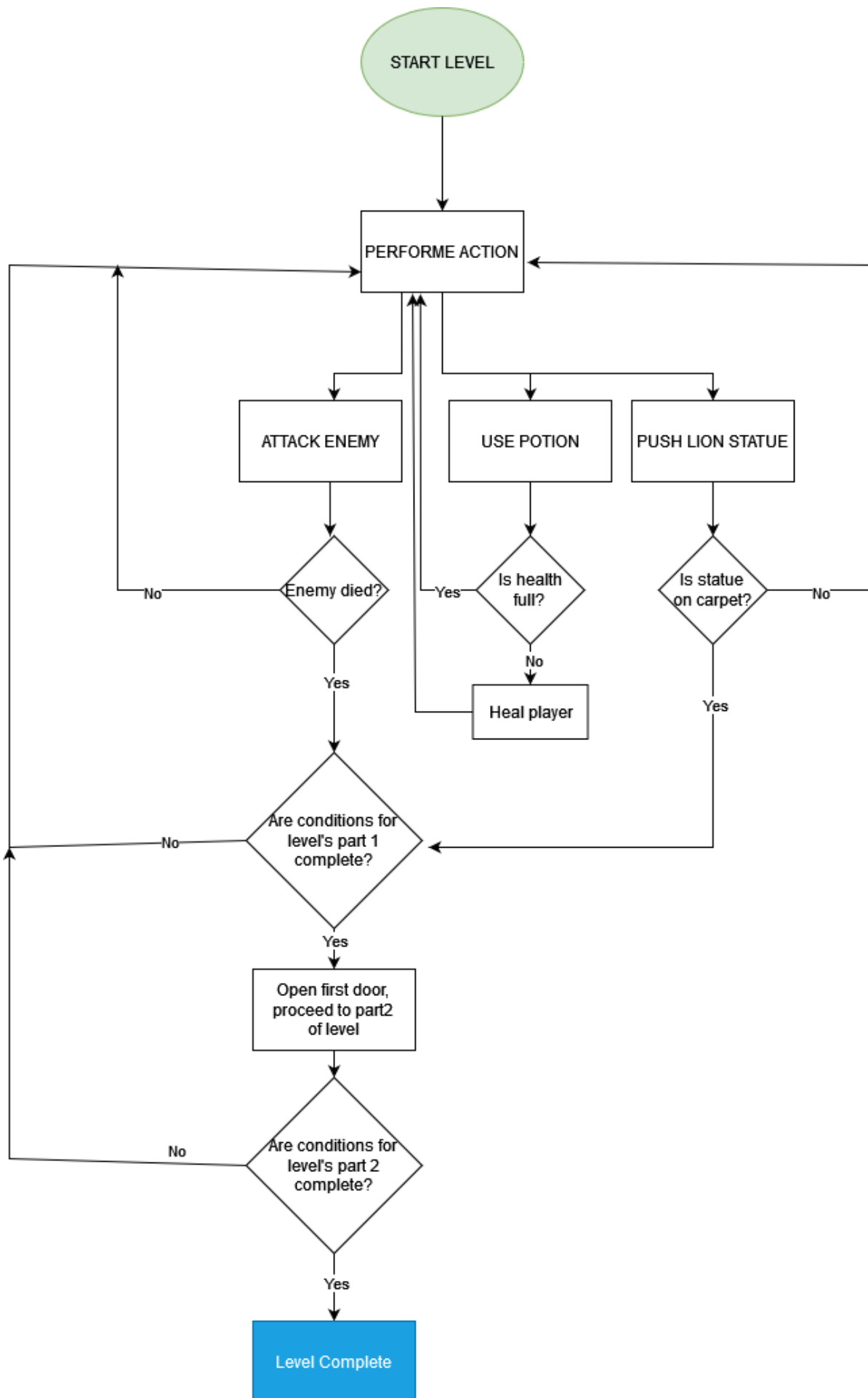1. Village: This is the introduction level showcasing combat and the lion statues puzzle.
2. Mountain: This level features 2 new simple mazes the player must navigate but also has to be careful not to fall.
3. Castle: This level is similar to level1 but with increased difficulty both in enemies and lion statues puzzle.

Screenshots:

Below is the flowchart of the game's logic

```
                    START LEVEL


                    PERFORME ACTION


        ATTACK ENEMY      USE POTION      PUSH LION STATUE


                                            Is statue
No      Enemy died?    Yes   Is health      on carpet?    No
                             full?

              Yes                 No           Yes
                                Heal player


        Are conditions for
No      level's part 1
        complete?

              Yes

        Open first door,
        proceed to part2
        of level


        Are conditions for
No      level's part 2
        complete?

              Yes

        Level Complete
```

Scripts (Total 26):

- Enviroment – **CarpetTrigger.cs** : Checks if Lion Statue is placed on it and signals the corresponding level manager.
- Enviroment – **Door.cs** : Checks if the player touches its collider and plays its animations.
- Items – **FloatingPotion.cs**: Checks if the player touches the health potion and if it has less than full health it heals him.
- LevelScripts – **FirstLevelManager.cs, SecondLevelManager.cs, ThirdLevelManager.cs** : They monitor the level's state and winning conditions
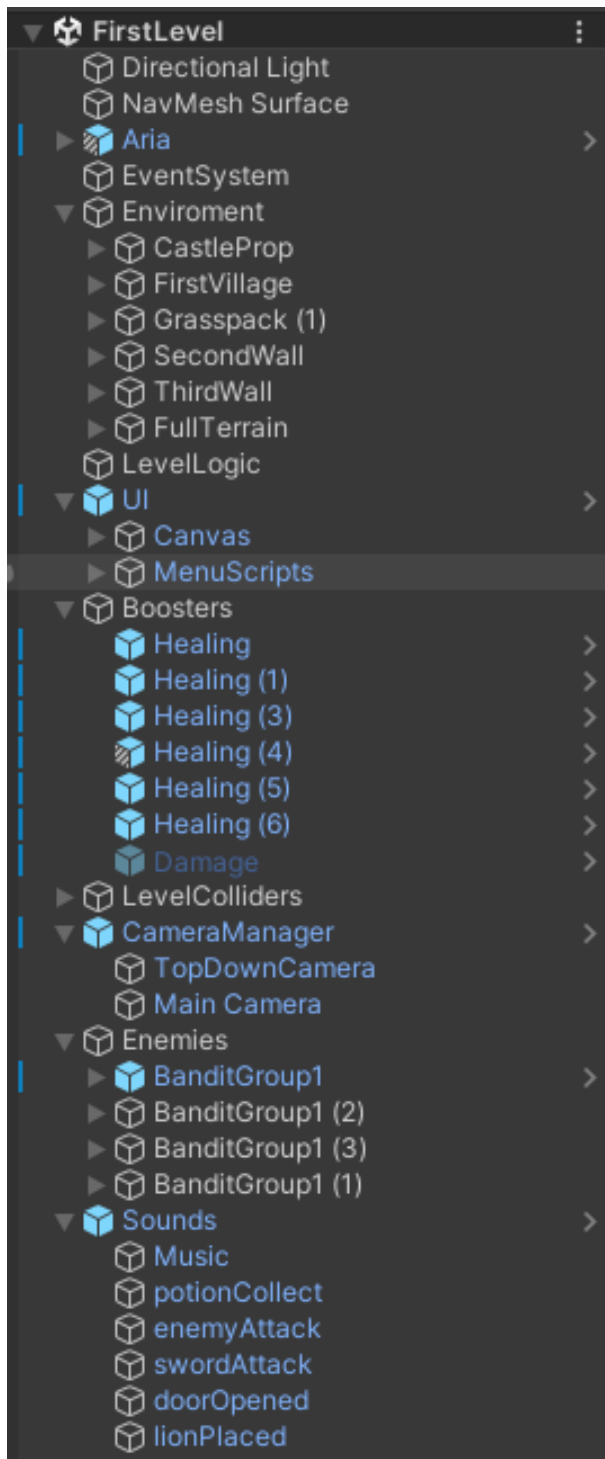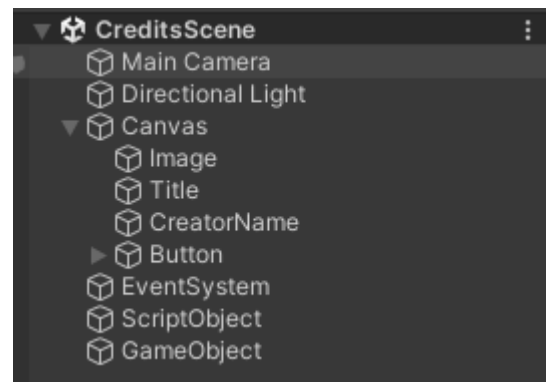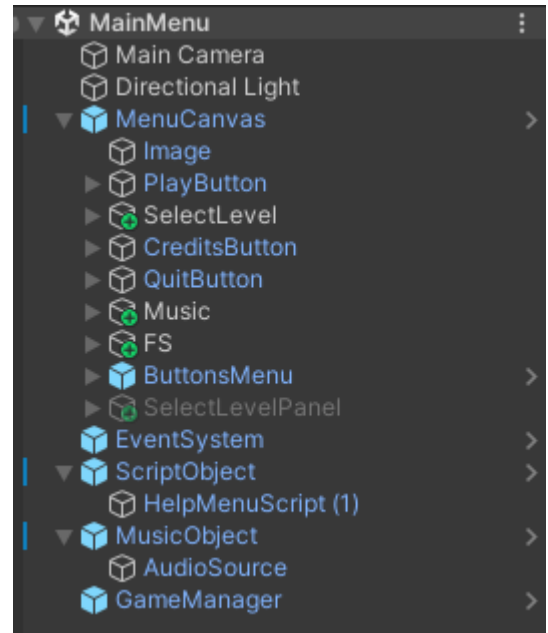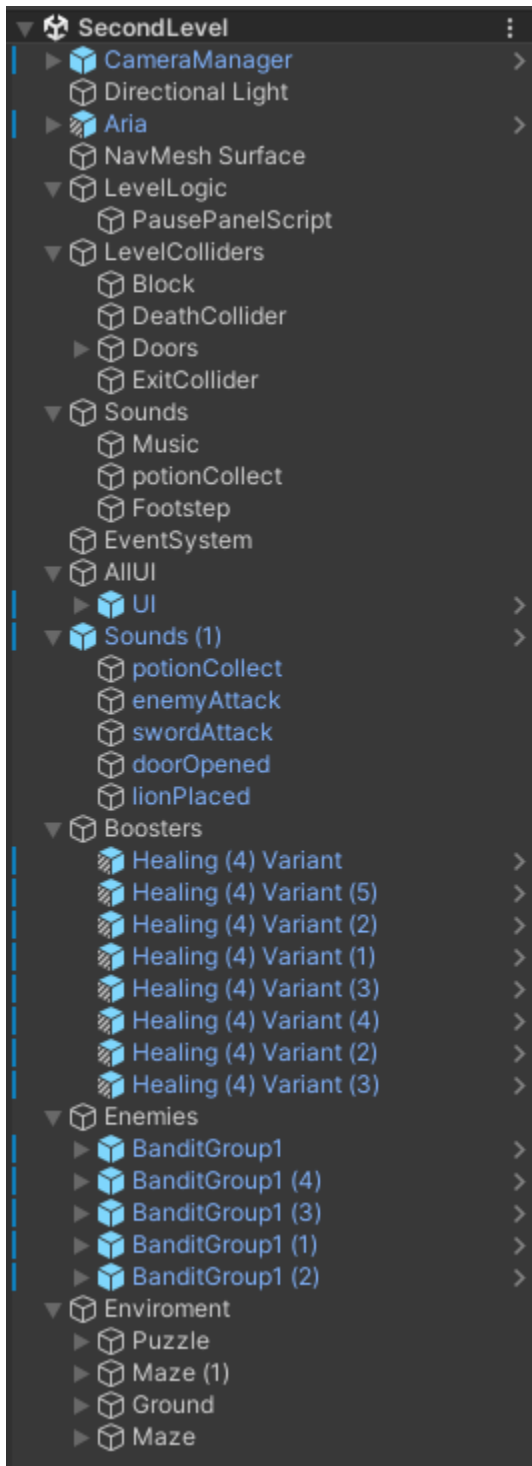- LevelScripts – **DeathCollider.cs**: Applied to the death collider on level2, resets the level if the player touches the collider.
- LevelScripts – **ExitCollider.cs** : Placed at the exit collider of the level. If the player touches the collider it loads the next level.
- LevelScripts – **GameManager.cs**: Not utilized in the end, only for the menu. Its functionality was replaced by the managers above.
- LevelScripts – **CreditsMenu.cs** : Gives functionality to the Credits Menu back button that goes back to the main menu.
- LevelScripts – **MainMenuMusicManager.cs**: Was replaced by AudioManager.cs
- Mechanics – **Health.cs**: Manages health for the object it is attached to (either the player or an enemy)
- Mechanics – **EnemyAI.cs**: Manages the enemies behavior (patrol the area, spot and chase the player, attack him)
- Mechanics - **CameraSwitcher.cs**: Used to switch between the different cameras in the game
- Mechanics **– chasePlayer.cs**: Was replaced by EnemyAI.cs
- Mechanics- **PlayerController.cs** : Controlls player movement and attacks
- Mechanics – **mainCameraController.cs** : Controls how the camera is position relative to the player, used in every camera object.
- Mechanics – **animationStateController.cs**: Manages the parameters of the animator that handles the different animations for the player's model
- MenuScripts – **AudioManager.cs**: Manages the music for the Main Menu and Credits Menu
- MenuScripts – **HelpMenuManager.cs** : Manages the functionality of the help menu (the little menu on the bottom that shows the buttons)
- MenuScripts – **MainMenu.cs** : Manages the functionality of the Main Menu
- MenuScripts – **PauseMenu.cs**: Manages the functionality of the Pause Menu
- MenuScripts – **SecondPauseMenu.cs**: Same as PauseMenu.cs, it was created because of some bug issues.

- MenuScripts **– ToggleButton.cs**: Was created for the main menu's sound mute button, not used in the final build.

Hierarchy screenshots:

FirstLevel
- Directional Light
- NavMesh Surface
- ▶ Aria
- EventSystem
- ▼ Enviroment
  - ▶ CastleProp
  - ▶ FirstVillage
  - ▶ Grasspack (1)
  - ▶ SecondWall
  - ▶ ThirdWall
  - ▶ FullTerrain
- LevelLogic
- ▼ UI
  - ▶ Canvas
  - ▶ MenuScripts
- ▼ Boosters
  - Healing
  - Healing (1)
  - Healing (3)
  - Healing (4)
  - Healing (5)
  - Healing (6)
  - Damage
- ▶ LevelColliders
- ▼ CameraManager
  - TopDownCamera
  - Main Camera
- ▼ Enemies
  - ▶ BanditGroup1
  - ▶ BanditGroup1 (2)
  - ▶ BanditGroup1 (3)
  - ▶ BanditGroup1 (1)
- ▼ Sounds
  - Music
  - potionCollect
  - enemyAttack
  - swordAttack
  - doorOpened
  - lionPlaced

ThirdLevel
- Directional Light
- ▶ Aria
- ▼ LevelColliders
  - NorthBound
  - SouthBound
  - ExitCollider
  - DoorCollider1
  - DoorCollider2
- ▼ LeveLogic
  - PausePanelObj
- ▼ Enemies
  - ▶ BanditGroup1
  - ▶ BanditGroup1 (2)
  - ▶ BanditGroup1 (3)
  - ▶ BanditGroup1 (1)
- ▼ Boosters
  - Healing (4) Variant
  - Healing (4) Variant (1)
  - Healing (4) Variant (2)
  - Healing (4) Variant (3)
- NavMesh Surface
- ▼ CameraManager
  - TopDownCamera
  - Main Camera
- ▼ Sounds
  - Music
  - potionPickup
- EventSystem
- ▼ AllUI
  - ▶ UI
  - ▶ PausePanel1
- ▼ Sounds (1)
  - potionCollect
  - enemyAttack
  - swordAttack
  - doorOpened
  - lionPlaced
- ▼ Enviroment
  - Lions
  - ▶ Decoration
  - Terrain_(0.00, 0.00, -20.00)
  - ▶ Terrain

SecondLevel

- ▼ SecondLevel
  - ▶ CameraManager
  - Directional Light
  - ▶ Aria
  - NavMesh Surface
  - ▼ LevelLogic
    - PausePanelScript
  - ▼ LevelColliders
    - Block
    - DeathCollider
    - ▶ Doors
    - ExitCollider
  - ▼ Sounds
    - Music
    - potionCollect
    - Footstep
  - EventSystem
  - ▼ AllUI
    - ▶ UI
  - ▼ Sounds (1)
    - potionCollect
    - enemyAttack
    - swordAttack
    - doorOpened
    - lionPlaced
  - ▼ Boosters
    - Healing (4) Variant
    - Healing (4) Variant (5)
    - Healing (4) Variant (2)
    - Healing (4) Variant (1)
    - Healing (4) Variant (3)
    - Healing (4) Variant (4)
    - Healing (4) Variant (2)
    - Healing (4) Variant (3)
  - ▼ Enemies
    - ▶ BanditGroup1
    - ▶ BanditGroup1 (4)
    - ▶ BanditGroup1 (3)
    - ▶ BanditGroup1 (1)
    - ▶ BanditGroup1 (2)
  - ▼ Enviroment
    - ▶ Puzzle
    - ▶ Maze (1)
    - ▶ Ground
    - ▶ Maze

MainMenu

- ▼ MainMenu
  - Main Camera
  - Directional Light
  - ▼ MenuCanvas
    - Image
    - ▶ PlayButton
    - ▶ SelectLevel
    - ▶ CreditsButton
    - ▶ QuitButton
    - ▶ Music
    - ▶ FS
    - ▶ ButtonsMenu
    - ▶ SelectLevelPanel
  - EventSystem
  - ▼ ScriptObject
    - HelpMenuScript (1)
  - ▼ MusicObject
    - AudioSource
  - GameManager

CreditsScene

- ▼ CreditsScene
  - Main Camera
  - Directional Light
  - ▼ Canvas
    - Image
    - Title
    - CreatorName
    - ▶ Button
  - EventSystem
  - ScriptObject
  - GameObject

Credits for the things I used and I didn't create:

Keyboard sprites:

https://assetstore.unity.com/?q=keyboard%20ui&orderBy=4

Fantasy Town Models:

https://assetstore.unity.com/packages/3d/environments/fantasy-landscape-103573

Cartoon Wooden Box:

https://assetstore.unity.com/packages/3d/props/furniture/cartoon-wooden-box-242926

Fantasy Skybox:

https://assetstore.unity.com/packages/2d/textures-materials/sky/fantasy-skybox-free-18353

Lion Statue:

https://assetstore.unity.com/packages/3d/props/exterior/lion-statue-34247

Characters:

https://assetstore.unity.com/packages/3d/characters/medieval-cartoon-warriors-90079

Terrain Textures/Materials:

https://assetstore.unity.com/packages/3d/environments/fantasy/fantasy-forest-environment-free-demo-35361

Music:

Main Menu: https://uppbeat.io/track/aaron-paul-low/open-fields

The rest here: https://uppbeat.io/

Health System:

https://www.youtube.com/watch?v=3uyoIYVsiWc

Animations:

https://www.youtube.com/watch?v=Vsj_UpnLFF8

Main Menu Wallpaper:

https://www.wallpaperflare.com/

Footsteps SFX:

https://www.zapsplat.com/page/2/?s=sword&post_type=music&sound-effect-category-id

UI stuff:

https://assetstore.unity.com/packages/2d/gui/simple-ui-kit-284292

More SFX:

https://pixabay.com/sound-effects/search/notification/

Used Unity's terrain and AI tool