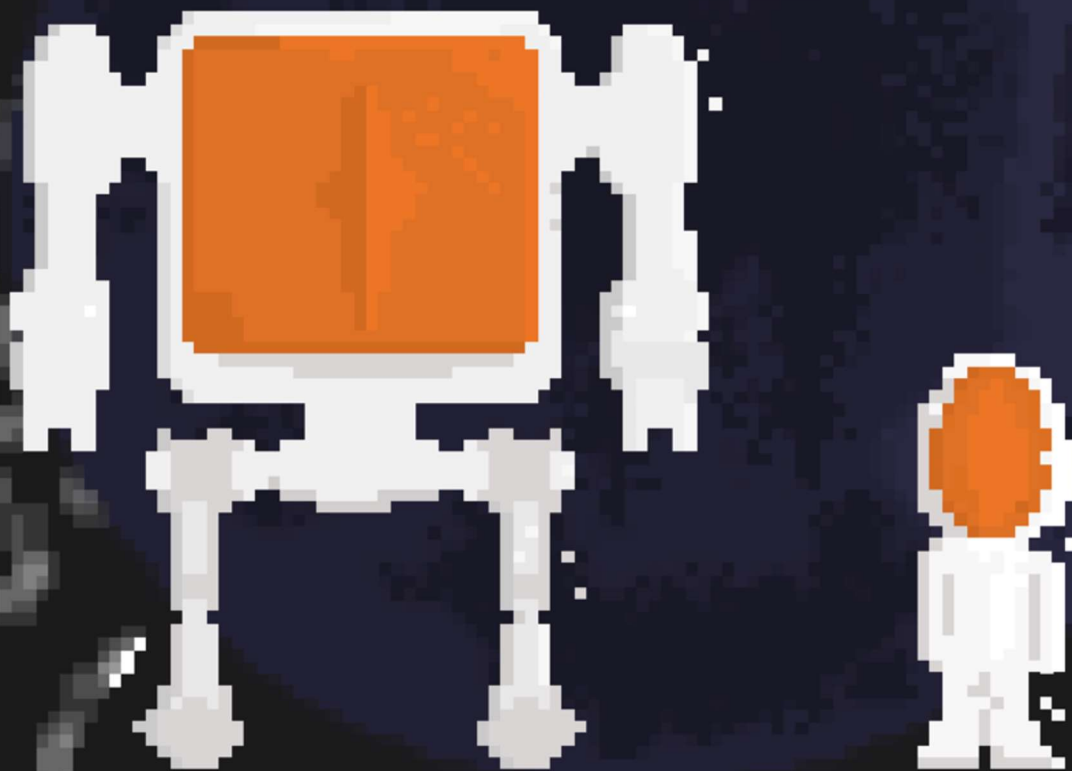


# POPULUS MAGOS



# Technical Design Document for Populus Magos, a god game by Mario Battiston

*Game Title: Populus Magos*

*Document version: v1.0*

*Written by (Mario Battiston)*

*Point of contact:*

Mario Battiston

Contact Details:

Email- [st20234326@outlook.cardiffmet.ac.uk](mailto:st20234326@outlook.cardiffmet.ac.uk)

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# Development Requirements

Development — IDE, test suites, editors etc.

## 3d Modelling software: Blender 4.0

- **Justification:** *Blender* was chosen as the 3d modelling software due to the Team having more experience with the software along with the support between Blender and Unity (The Game Engine) which makes workflow very effective. Well not as industry standard as 3dsMax, Blender is an amazing free 3d modelling software that proved effective for this project.
- **Use:** 3d modelling, UV mapping, texturing, typology and generating textures for all Populus Magos's 3d Model Assets

## Photo editor (for textures): GIMP 2.20.36

- **Justification:** *GIMP* is a great little free photo editor that is 2<sup>nd</sup> only to photoshop. Due to the team's familiarity GIMP was chosen to be used for any photo editing tasks.
- **Use:** Creating texture's (Normal maps, specular highlights maps, Diffuse maps, roughness maps etc.) and editing UV maps.

## Pixel art editor used for the poster and the world map: Libresprite

- **Justifications:** *Libresprite* is a freeware pixel art editing software that can be used to make pixel art and can double up as a very basic photo editor. The Team has prior experience with this software and used it to help increase workflow when it came to art.
- **Use:** Populus Magos's cover and the map texture that is used in game.

## IDE: Visual Studio 2022 & Visual Studio Code

- **Justifications:** Visual Studio and Visual Studio Code are industry standard IDE's that were used to make all the Games C# scripts that were then used in Unity (Game Engine). The familiarity as well as support for C# and Visual Studios was a boon to the project's workflow.
- **Use:** Scripting in unity, debugging and C# Code.

### Game Engine: Unity 2022.3.9f1

- **Justifications:** Unity is a titan of indie game development in the industry as well as game development in general. An easy-to-use game engine with tons of support both official and unofficial. Populus Magos (the game) is striving to be an Indie title and with Unity's track record for successful games there is very few better places for Populus Magos to be made on.
- **Use:** Making the game, prototyping, game demoing, scripting, level design, importing assets, animation, and general game engine tasks

### 2D/3D Software and API: DirectX 11

- **Justifications:** DirectX 11.x is default in for most computers and is well supported. Unity also supports DirectX 11.
- **Use:** DirectX 11 is used as Populus Magos's API.

### Project Management — GitHub and GitHub Desktop

- **Justifications:** GitHub is well supported and has a lot of useful tools for managing Unity Projects as well as larger files. Commits and comments keep files well organised.
- **Use:** Managing Project Files.

### Source Control — GitHub Version Control

- **Justifications:** Familiarity with the software and GitHub is industry standard and well supported.
- **Use:** Version Control

### Sound Software — Audacity and CakeWalk

- **Justifications:** Audacity and CakeWalk are both great free DAW's that have a scope of tools to make great audio.
- **Use:** Game sound track and sound effects.

# Asset Specifications

## Supported Asset Formats:

- **Model file types:** *.BLEND* files were used when making the models in blender and *.fbx* is the file type each 3d model was exported as to be used in Unity. With *.fbx* armature, animation, mesh and texture data could be exported and uploaded onto Unity.
- **Texture File Types:** *.PNG and .JPEG* were the file formats used for the textures as well as any maps used for the textures.
- **Texture Width and Height:** Terrain Textures = 1024x1024. Character models and Building models all share the same texture the Imphenzia Pallet which was used to texture the models with colour and the pallet size is 512x512.
- 
- **Audio Files:** Edited in Cakewalk as *.cwf* file and exported and used in unity as a *.wav* file.

## Supported asset Restrictions:

- **Model Polygon Count:** A strict poly count of 20 000. This is to keep the low poly feel of the game and impressive visuals will be handled by textures.

# Project Structure

- ProjectMagos
  - PopulusMagosDemo\_PlayHere
    - PopulusMagos.exe
  - Populus\_Magos\_Unity
    - Assets
      - Animation
      - Camera
      - Materials
      - Models
      - Prefabs
      - Scenes
      - Scripts
      - Music
  - PopulusMagosDocument
    - Assignment Brief
    - TDD
    - Closing Kit
  - PopulusMagosPoster
    - Game Poster And Variants
  - ProjectMagosGameModels
    - CompletedModelsScreenShots
    - GameAsset1\_TerrainBoard
    - GameAsset2\_Buildings
    - GameAsset3\_StarForgers
    - HuntingNgons (guide)
  - Recordings
    - Animation and Unity Recordings
  - Textures
    - StarForgersTexture
    - StarWalkerTexture
    - MagosRockClusterTexture\_1k
    - MagosRockTexture\_1k
    - MagosSandTile\_Texture\_1k
    - TerrainTexture\_1k

## File Naming Convention

*General coventions examples:*

- StarForger
- Astra\_Building
- PopulusMagos\_Level\_1

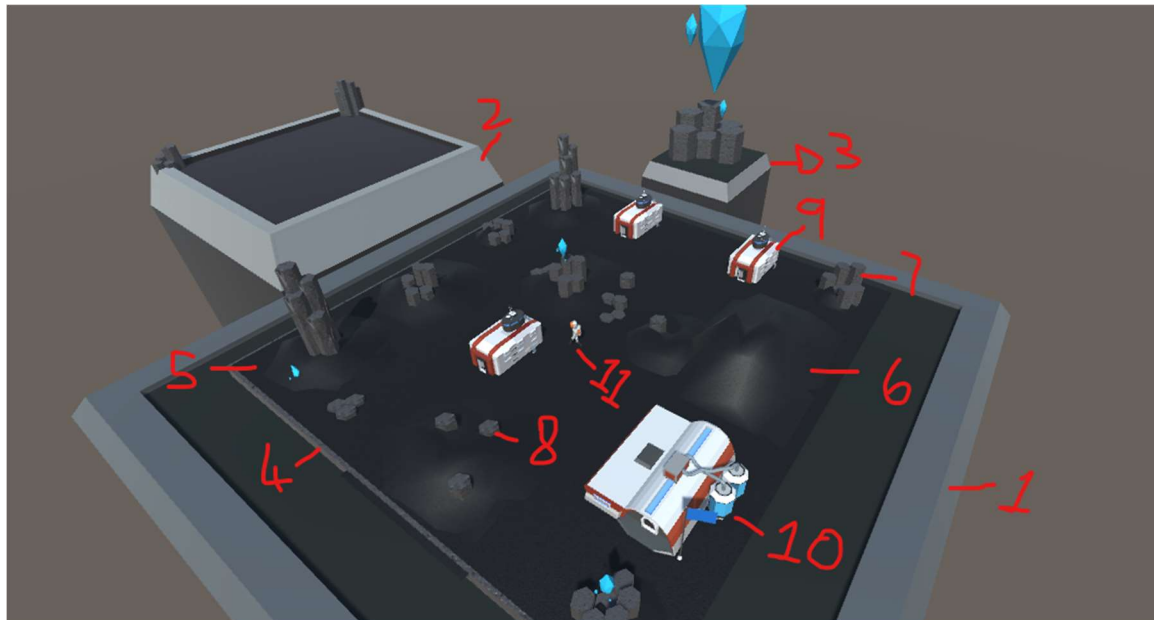
## Level / World Details

Layout:

## MainMenu:



## Level 1:





## Level 2:



## Asset List:

Layout Number	Asset
1	Magos Board
2	Magos Map
3	Magos Shrine
4	Magos Ground
5	Magos Landscape
6	Magos Sand Tile
7	Magos Rock Cluster
8	Magos Single Rock
9	Astra Settlement Building
10	Astra Outpost Building
11	Star Forger
12	World Plane Space
13	Star Walker
14	Map of Magos
15	UI implemented (Also added to level one for swapping between scenes)

## Development Plan

Milestones	Date	Deliverable	Approval
Models Created	24/11/2023	Models	Yes
Created Textures	28/11/2023	Textures	Yes
Armature	29/11/2023	Animation	Yes
Baked Texture Maps	30/11/2023	Texture Maps	Yes
Animations Set	3/12/2023	Animation	Yes
Exported Models	6/12/2023	Assets	Yes
Unity Project Set Up	9/12/2023	Unity Project	Yes
Imported Models	10/12/2023	Assets	Yes
Level 1 Created	28/12/2023	Level 1	Yes
Level 2 Created	28/12/2023	Level 2	Yes
Code and Level Animations Made	29/12/2023	Scripts and Animations	Yes
Prototype Build Made	30/12/2023	Protortype	Yes
Alpha	TBD		TBD
Beta	TBD		TBD
Final	TBD		TBD
Pitch and Play	TBD		TBD

## Playtesting —

- Testing button to swap between levels.
- NPC animations
- Testing how game build preforms

# Minimum Requirements

Requirements based on similar game:

## **Golf Topia**

### **Minimum Requirements**

Requires a 64-bit processor and operating system

OS \*: Windows 7/8/10

Processor: 3 GHz Dual Core Processor

Memory: 4 GB RAM

Graphics: GeForce GTX 660, Radeon R7 370 or equivalent with 2 GB of video RAM

DirectX: Version 11

## **Outer Wilds**

### **Minimum requirements**

Requires a 64-bit processor and operating system

OS: Windows 10

Processor: Intel Core i5-2300 | AMD FX-4350

Memory: 6 GB RAM

Graphics: Nvidia GeForce GTX 660, 2 GB | AMD Radeon HD 7870, 2 GB

Tested on:

OS: Windows 10

Processor: AMD Ryzen 5600 X

Memory: 16GB RAM

Graphics: Nvidia Geforce GTX 1660 Super

DirectX: Version 11

## Regarding Audio and the soundtracks for Populus Magos

Cakewalk was used to make both the *Populus Magos Retro* and *Populus Magos Music.wav* files. These two tracks were produced by Mario Battiston using Cakewalk by BandLab and a Midi Keyboard.

Both tracks have taken inspiration from two game soundtracks. *Populus Magos Music .wav* is a cover of the legendary music composer Jeremy Soule's composition, original title: *Call of Magic* Remastered title: *Nerevar Rising* used in the 2002 game Elder Scrolls 3: Morrowind. The cover that will be used in Populus Magos will cooperate with any legal procedures that follow and states no claim over the original work and is merely a cover.

*Populus Magos Retro.wav* takes inspiration from the soundtrack used in the 2019 role-playing game Disco Elysium. Populus Magos will cooperate with any legal procedures.

## Harvard References

Referenced on Page 11. Regarding the minimum requirements for Golftopia

www.systemrequirementslab.com. (n.d.). *Requirements Test*. [online] Available at: <https://www.systemrequirementslab.com/cyri/requirements/golftopia/20140> [Accessed 3 Jan. 2024].

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www.systemrequirementslab.com. (n.d.). *Requirements Test*. [online] Available at: <https://www.systemrequirementslab.com/cyri/requirements/outer-wilds/17941> [Accessed 3 Jan. 2024].

