

InfermonSAGA Dev Report

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Abstract

In this article, the development processes and plans are logged.

1 Main Goal

The inspiration is from [4, DragonDungeonRun], which is a very simple to implement grid base game.

But I don't want it just to be a vertical level only game. But more rather like a open world game, with systems like "farming", "fighting", "adventure" and even some kind of character "RPG" and "progression".

For the "adventure" part, the world is just a lot of square grid, which the player is always take up one grid. The grid can be viewed as little piece of a manifold. The map of the world can be a lot of 2D-manifold with different inherent (nP^2 or nT^2 , doesn't matter after all we will have a more realistic and non-theoretical method to realise this in a game), connected by "portal". This forms the core "adventure" part of the game.

For the "fighting" part is just like usual RPG game, the monster or enemies also take up one square grid, and less dynamic are needed for the monster AI.

For the "farming" part we can use the tools to make a square grid in to a farmland, which we can grow agricultures on this square grid. The productions by farming can help "exploration" and "fighting".

The final part is mainly need high quality character design. This needs a lot of art and game script effort, which may not be affordable for myself at present.

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2 Roadmap

2.1 Topology structure for adventrue

2.2 fighting system

2.3 farming system

3 Dependencies

This section, the third-party dependencies will be logged and explained about how they are used in this specific project.

3.1 GLAD

The glad is used for the version that support the multiple-window graphics. The configuration for this dependence is according to [1, gladMultiwinMx]. We need to do this once in the top CMakeLists.txt.

```
1 set(GLAD_SOURCES_DIR "${PROJECT_SOURCE_DIR}/glad")
2 add_subdirectory("${GLAD_SOURCES_DIR}/cmake" glad_cmake)
3 glad_add_library(glad REPRODUCIBLE MX API gl:core=4.3)
```

Remember to include glad right before glfw as follow.

```
1 #include <glad/gl.h>
2 #include <GLFW/glfw3.h>
```

3.2 GLFW

The main graphics dependencies is glfw3. I used its sources code form its Github repository.

And Simply use this two line in CMakeLists.txt is okay.

```
1 add_subdirectory(glfw)
2 include_directories(glfw/include)
```

Then include GLFW in the file use it.

```
1 #include <GLFW/glfw3.h>
```

3.3 IMGUI

I choose to use the maximum features of the imgui, which contains "docking" and "Multi Viewports"

To set up imgui with the glad and glfw is according to [2, setupImGui].

To set up imgui with "Multi Viewports" feature is according to [3, text].

References

- [1] <https://github.com/Dav1dde>. glad multiwin mx. https://github.com/Dav1dde/glad/tree/glad2/example/c++/multiwin_mx. Accessed: 2025-01-24.
- [2] <https://github.com/Dav1dde>. imgui for glfw opengl. <https://github.com/ocornut/imgui/wiki/Getting-Started#example-if-you-are-using-glfw--openglwebgl>. Accessed: 2025-01-24.
- [3] <https://github.com/ocornut>. imgui multi viewports. <https://github.com/ocornut/imgui/wiki/Multi-Viewports>. Accessed: 2025-01-24.
- [4] Nikke. Dragon dungeon run. https://nikke-goddess-of-victory-international.fandom.com/wiki/Dragon_Dungeon_Run. Accessed: 2025-01-24.