

1. Block 4.2: CS6514: Software Architecture Design

Portfolio

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outline

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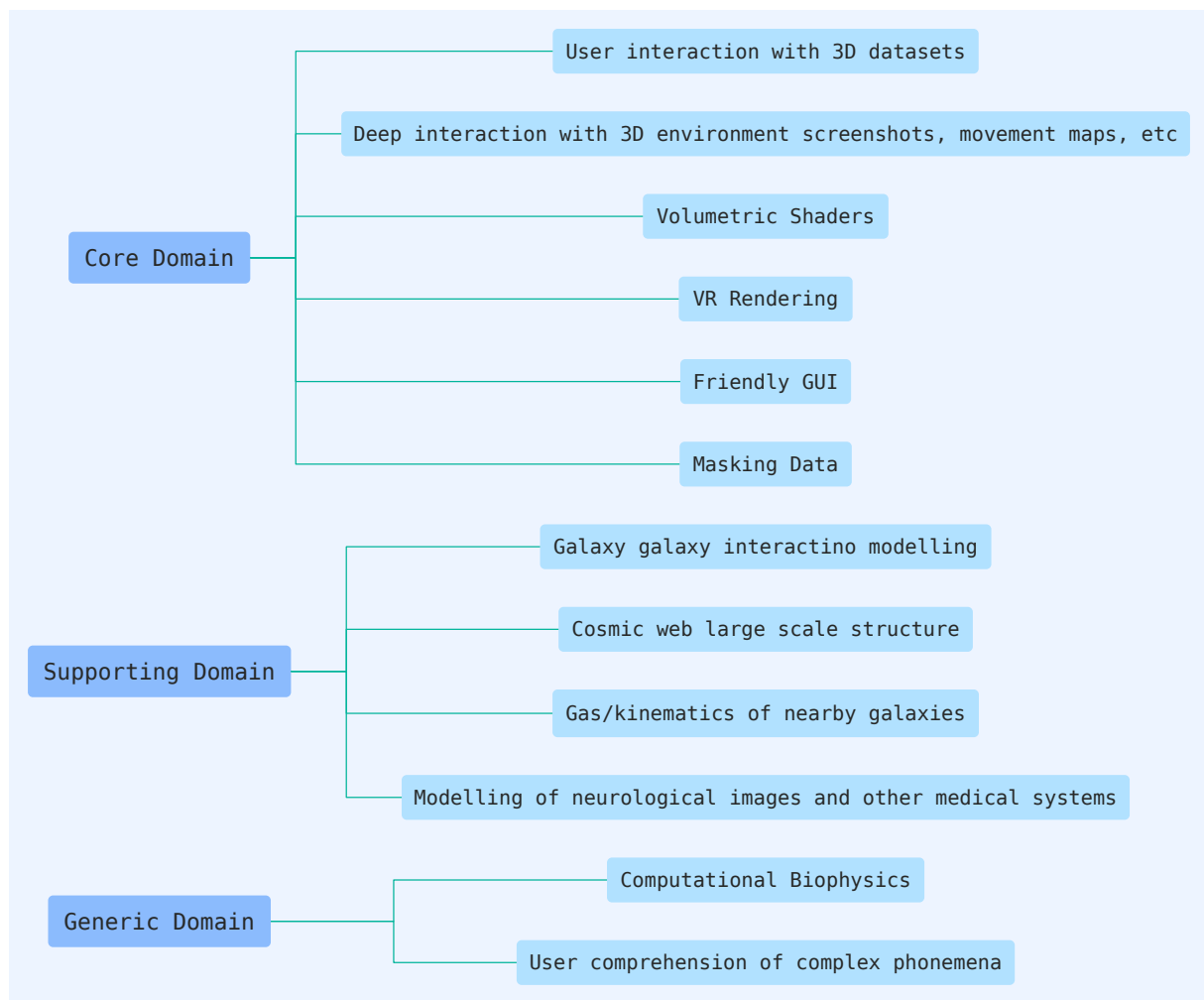
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3. Tech Stack

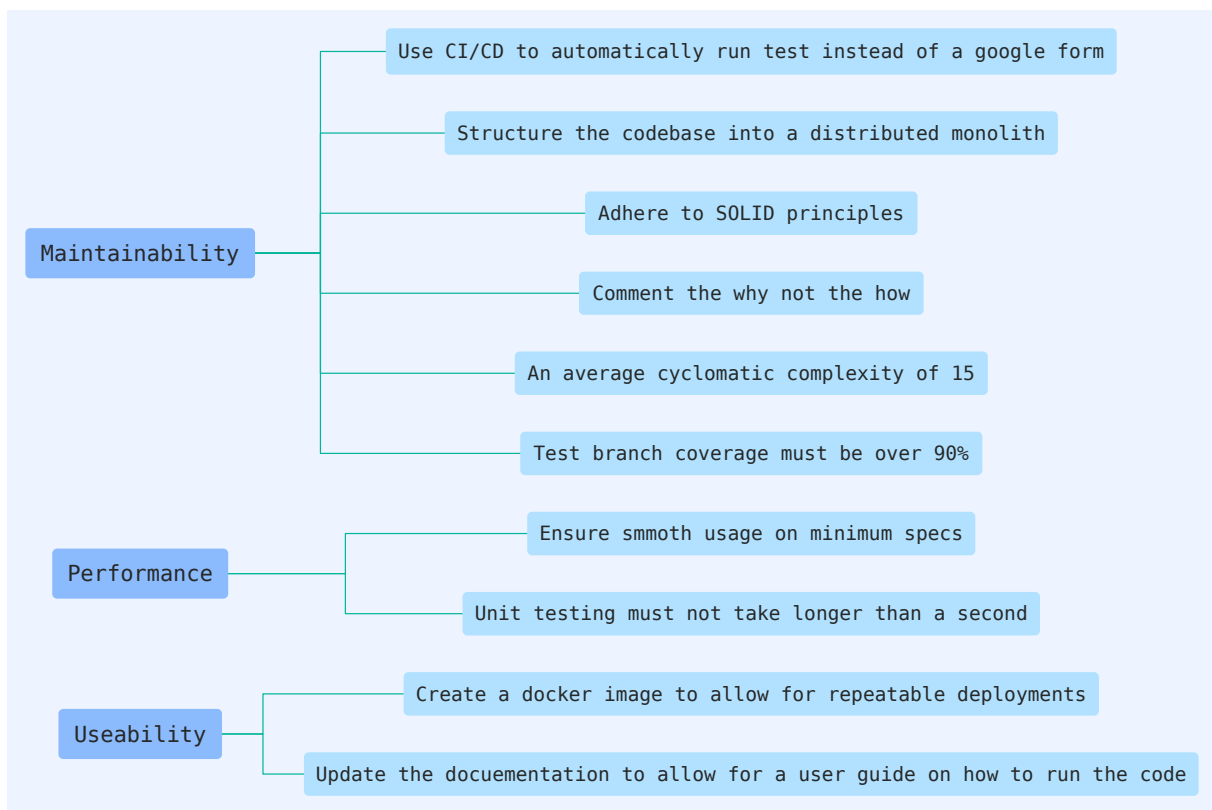
- Renderer : Unity with C#
- Interaction Framework : Steam VR
- Simulation Framework : C++ with eigen and boost
- Tests : Ctest with python add ons

4. Domain Model



Listing 1: Domain Model

5. Utility Tree



Listing 2: Utility Tree

6. Use case diagram

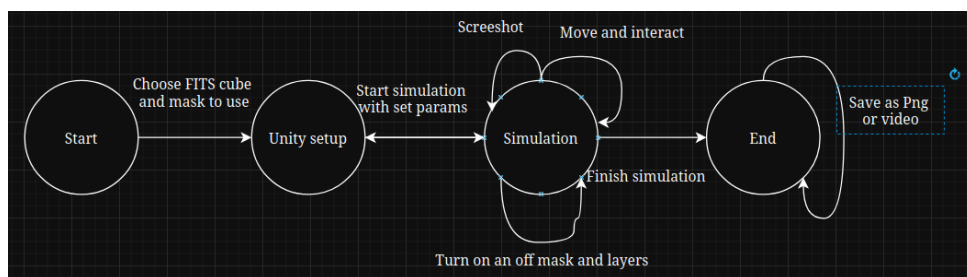


Figure 1: Use case state machine

7. 4 + 1 Diagram

8. Logical View

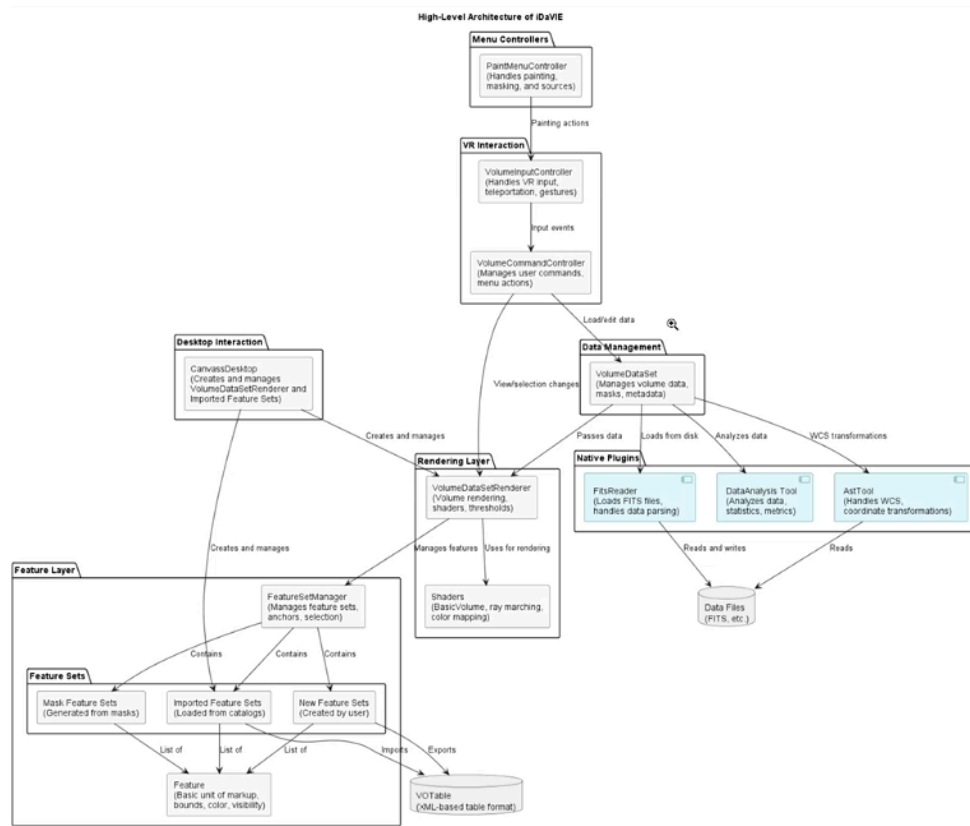
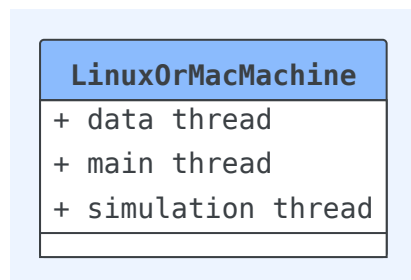
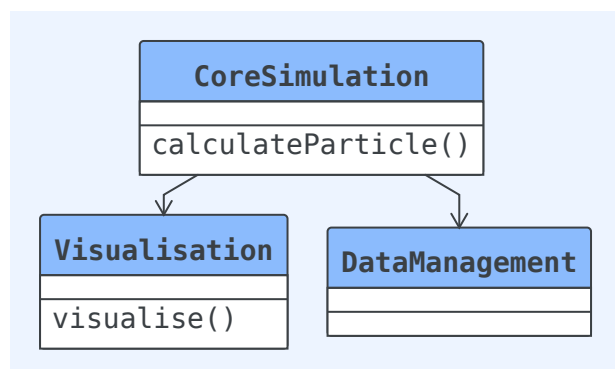


Figure 2: Logical View

9. Physical view



9.1. Process View



10. Developmental View

- Not extensible, forking is recommended to add large features
- High change propagation
- Current core is fairly static
- Data management is the largest dependency and a core of the codebase
- There is logical grouping of files
- No automated tests
- PRs need to go through manual testing via form for changes

11. Codescene

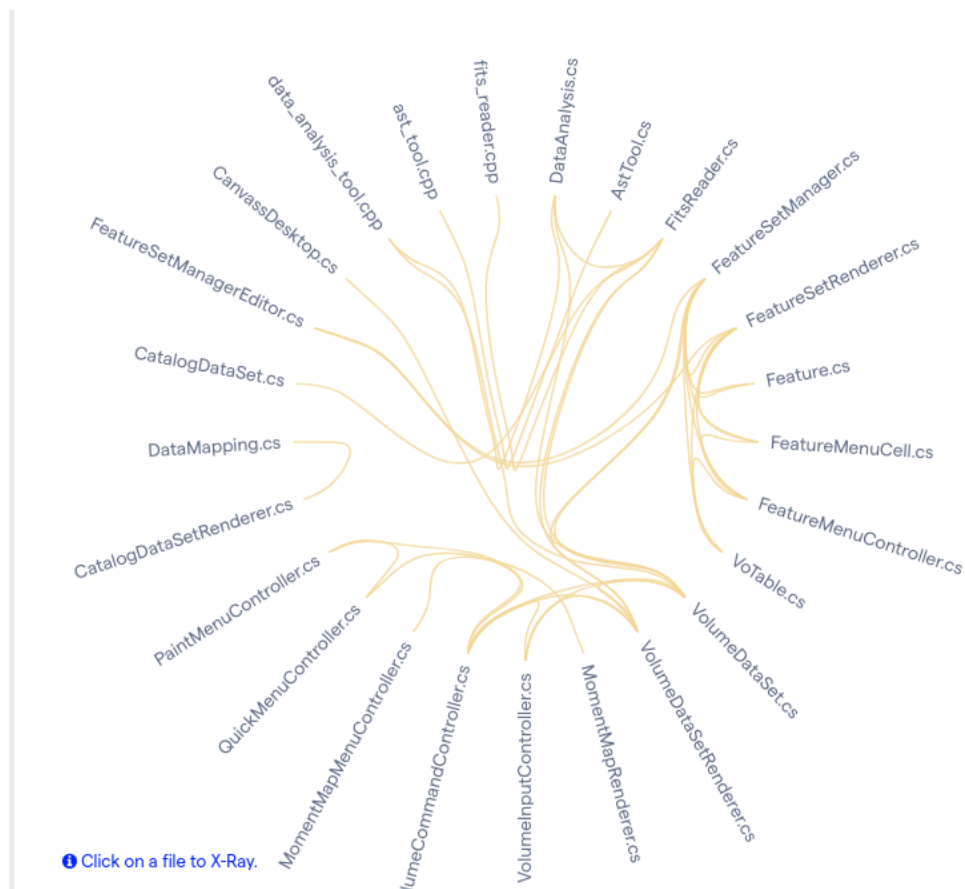


Figure 3: Codescene coupling diagram 40%

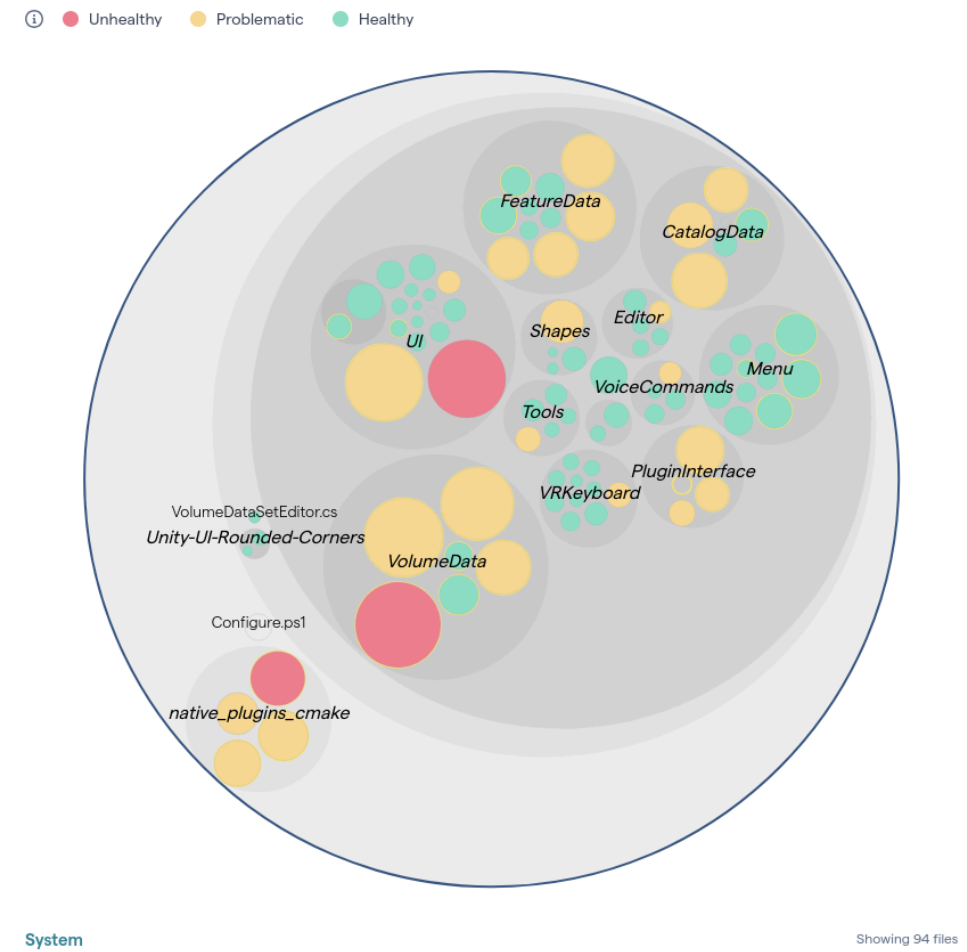


Figure 4: Codescene Maintenance Diagram

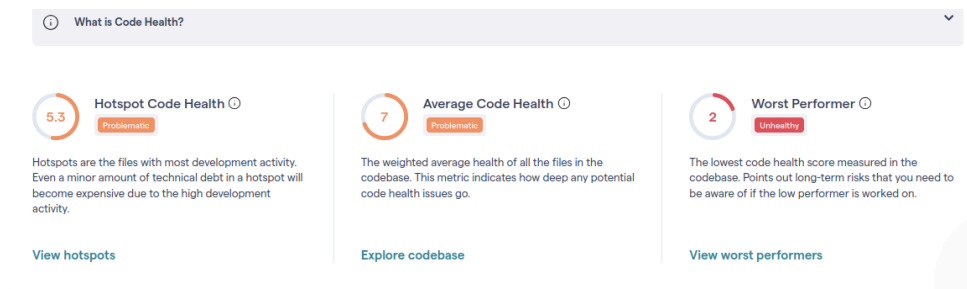


Figure 5: Codescene Hotspot overview

12. Sonarqube

Cyclomatic Complexity 531	
Feature.cs	39
FeatureAnchor.cs	7
FeatureMapper.cs	4
FeatureMenuCell.cs	66
FeatureMenuController.cs	99
FeatureMenuDataSource.cs	6
FeatureSetManager.cs	81
FeatureSetRenderer.cs	124
FeatureTable.cs	26
VoTable.cs	79

Figure 6: Sonarqube cyclomatic complexity



Figure 7: Sonarqube maintainability

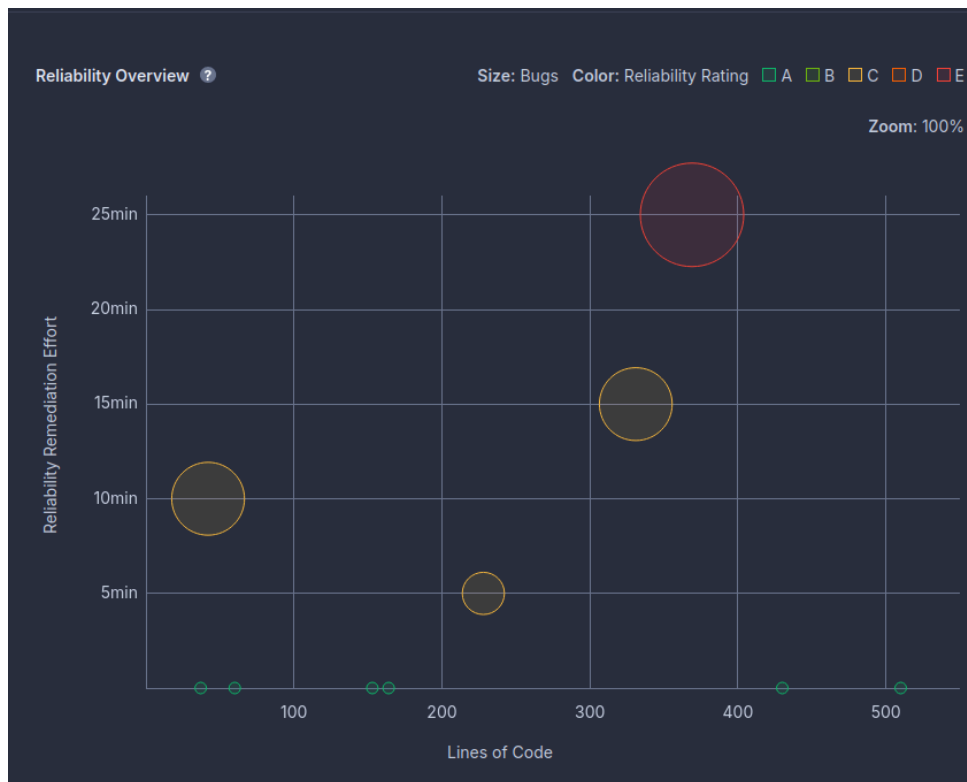


Figure 8: Sonarqube reliability graph

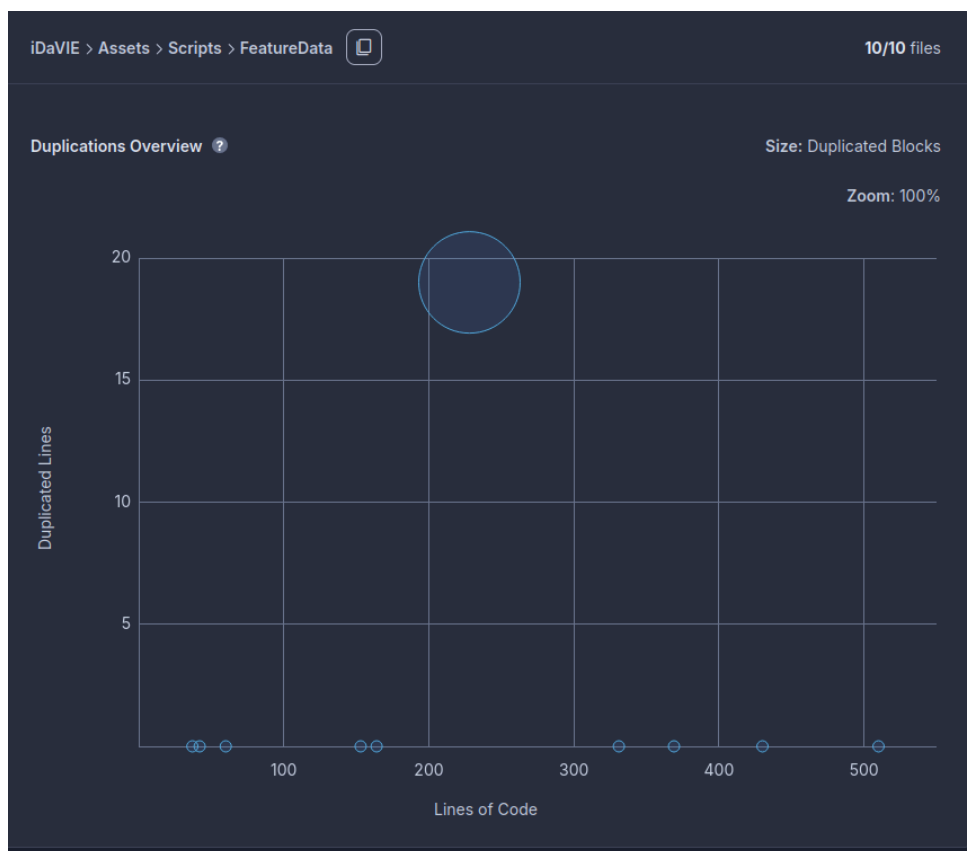


Figure 9: Duplications Graph

13. Understand Code Analysis



Figure 10:

14. Class Diagrams



Figure 11:

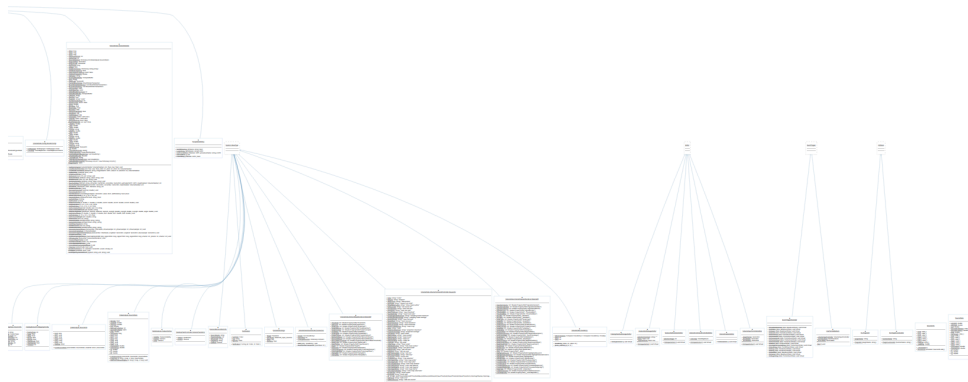


Figure 12:

15. C4 Diagram

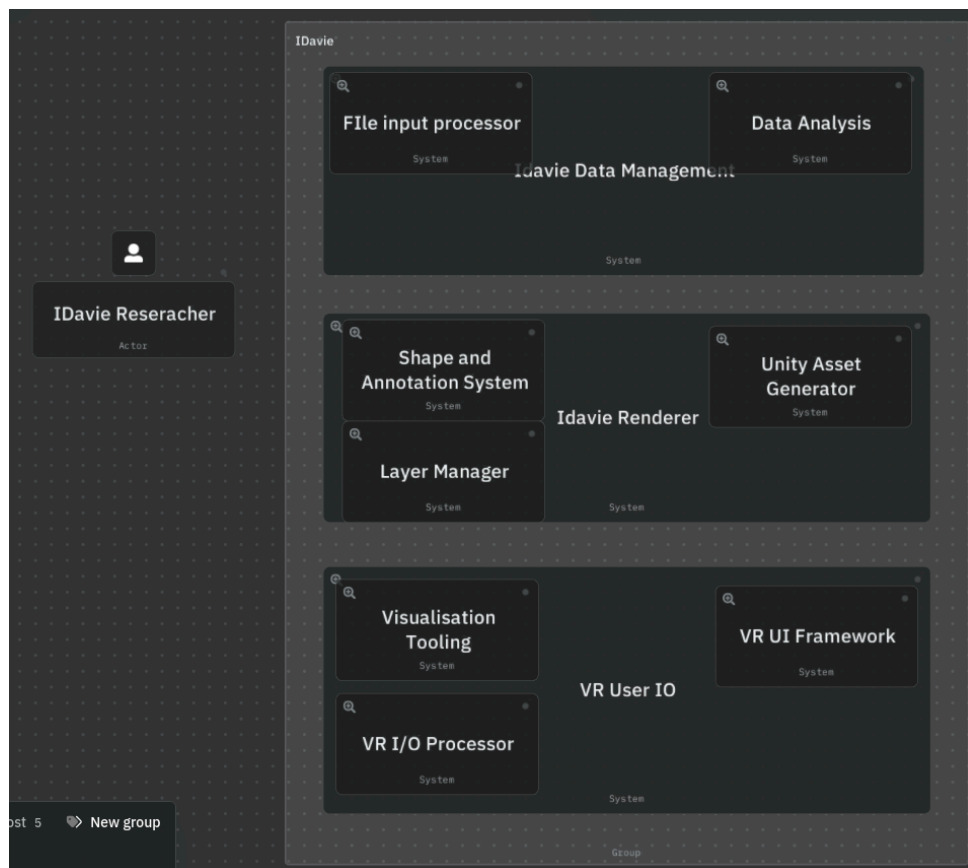


Figure 13: C4 Diagram