

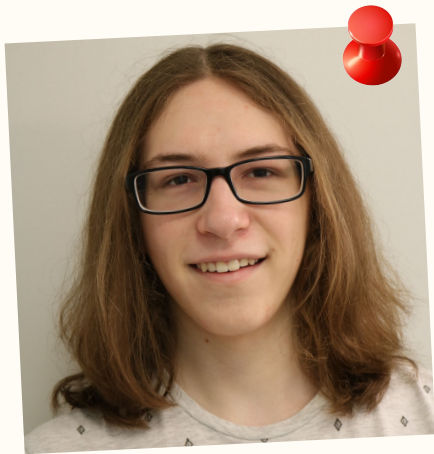


# ScummVM Concrete Architecture

Presented by Jacob McMullen and  
Reid Stobo

<https://youtu.be/HHxqN8vIbA8>





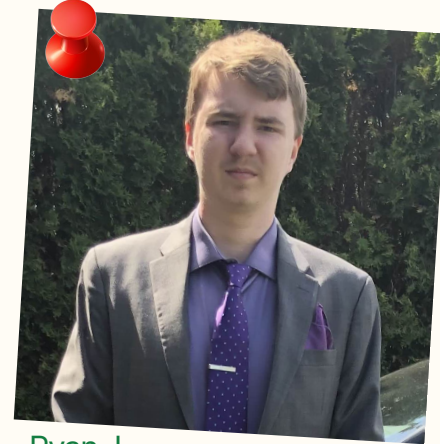
Evan K.



Kashan R.



Mike S.



Ryan J.  
(Group Leader)



Reid S.



Jacob M.

**Team:**





# Understand™

by SciTools

Understand Commercial License - (Build 1026) - apache.und - Welcome

Search

Functions (5093 of 40772 entities) Welcome

Show: Functions

Filter:

Project Browser

- ap\_dbd\_sql\_init
- ap\_default\_log\_writer
- ap\_default\_log\_writer\_init
- ap\_destroy\_sub\_req
- ap\_die
- ap\_die\_r
- ap\_dir\_cfgmatch
- ap\_dir\_fnmatch
- ap\_dir\_nofnmatch
- ap\_directory\_walk
- ap\_discard\_request\_body
- ap\_document\_root
- ap\_dump\_mutexes
- ap\_duplicate\_listeners
- ap\_error\_log2stderr
- ap\_escape\_errorlog\_item
- ap\_escape\_html2
- ap\_escape\_logitem

Entity Filter

Architecture Browser

Information Browser

Function **ap\_destroy\_sub\_req**

- Defined in: request.c
- Return Type: void
- Parameters
- Calls
  - apr\_pool\_destroy
- Called By
- Macros Used
- References by Flat List
- Metrics
- Architectures

Apache HTTP Server, one of the most popular web servers on the planet.

Directory Structure  
Segment Size by Lines of Code

Most Complex Functions  
Complexity by the McCabe Cyclomatic Metric

Line Breakdown  
Categorization by Line Type

- Code: 118,992
- Comment: 31,921
- Inactive: 3,613
- Preprocessor: 6,219
- Blank: 22,545

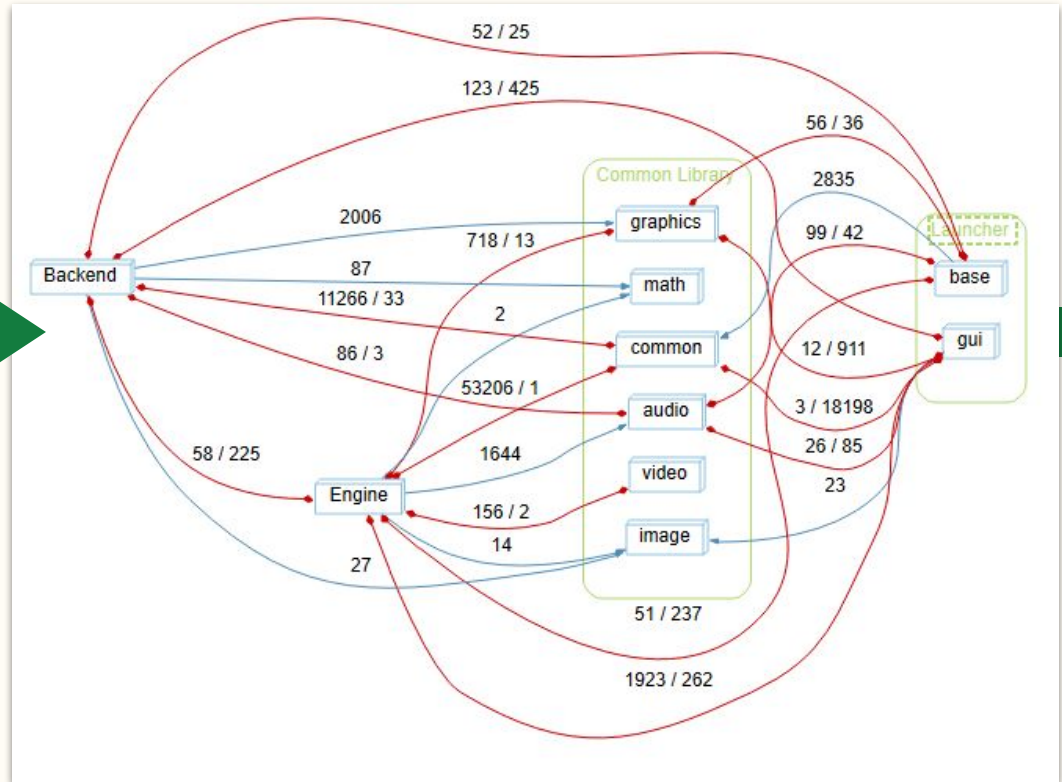
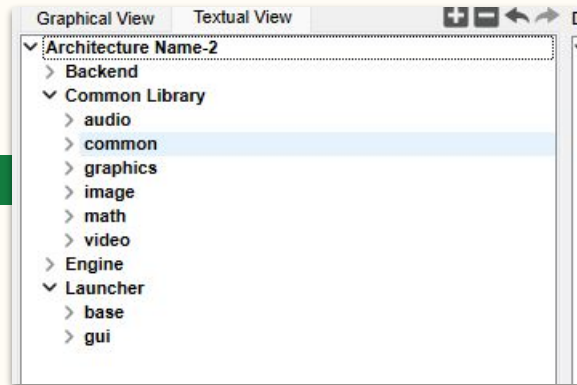
Previewer - /Users/stewart/Library/Application Support/SciTools/sample/apache/httpd-2.4.41/server/request.c - Define ap\_destroy\_sub\_req

```
2481 #undef (void) ap_destroy_sub_req(request_rec *)
2482 {
2483     /* Reclaim the space */
2484     apr_pool_destroy(r->pool);
2485 }
2486
2487 /*
2488  * Function to set the r->mtime field to the specified value if it's later
2489  * than what's already there.
2490  */
2491 #undef (void) ap_update_mtime(request_rec *r, apr_time_t dependency_mtime)
2492 {
2493     if (r->mtime < dependency_mtime) {
2494         r->mtime = dependency_mtime;
2495     }
2496 }
2497
2498 /*
2499  * Is it the initial main request, which we only get once* per HTTP request?
2500  */
2501 #undef (int) ap_is_initial_req(request_rec *r)
2502 {
2503     return (r->main == NULL); /* otherwise, this is a sub-request */
2504 }
```

Previewer Dependency Browser

Last Analysis: 5/28/20 4:58 AM

# Component Structure to Dependency graph



# Unexpected Directories

Common Library

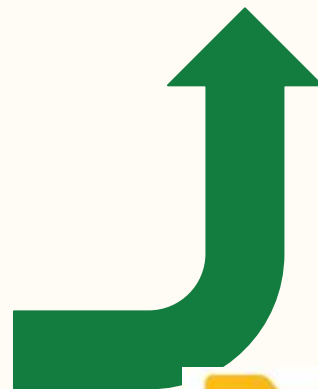
Launcher



graphics



math



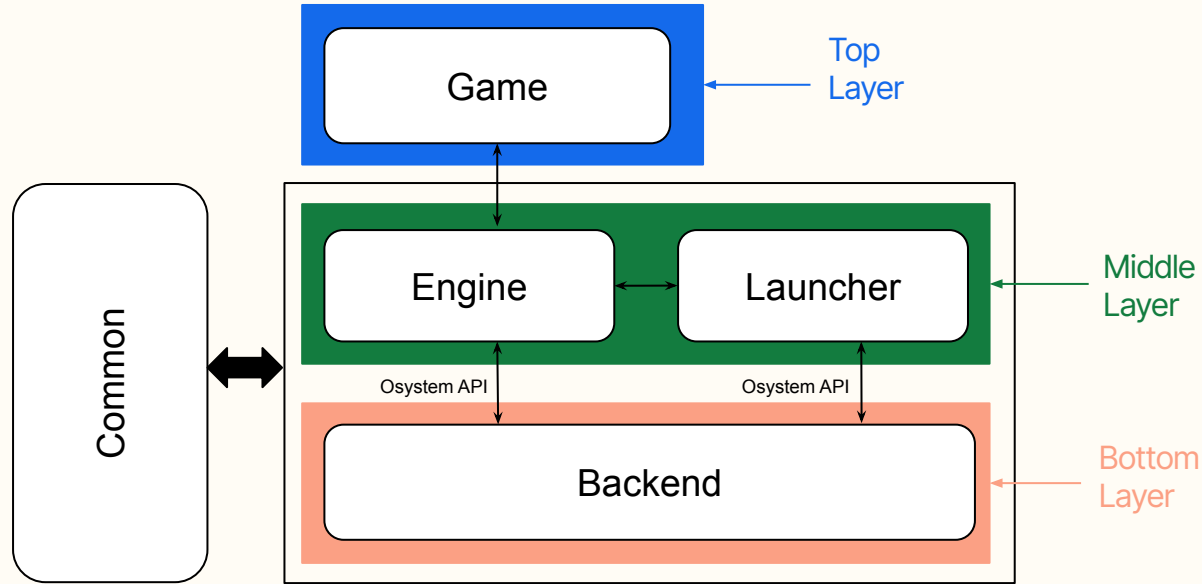
base



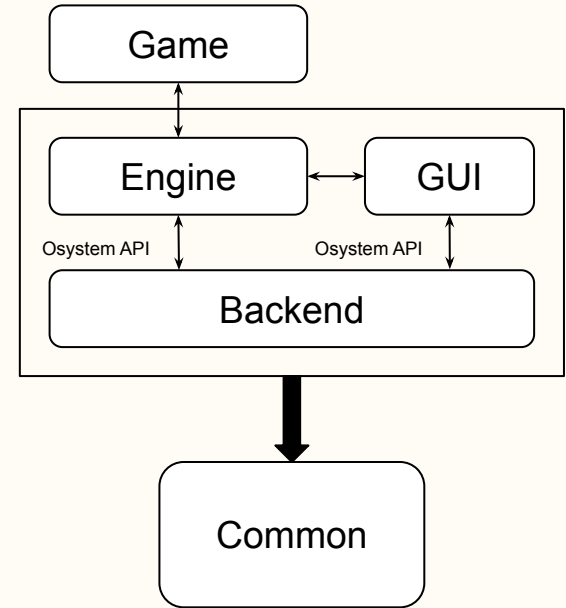
gui

# ScummVM Top-Level Architecture

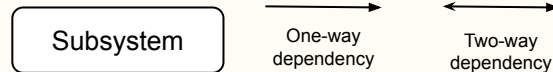
## Concrete Architecture



## Conceptual Architecture



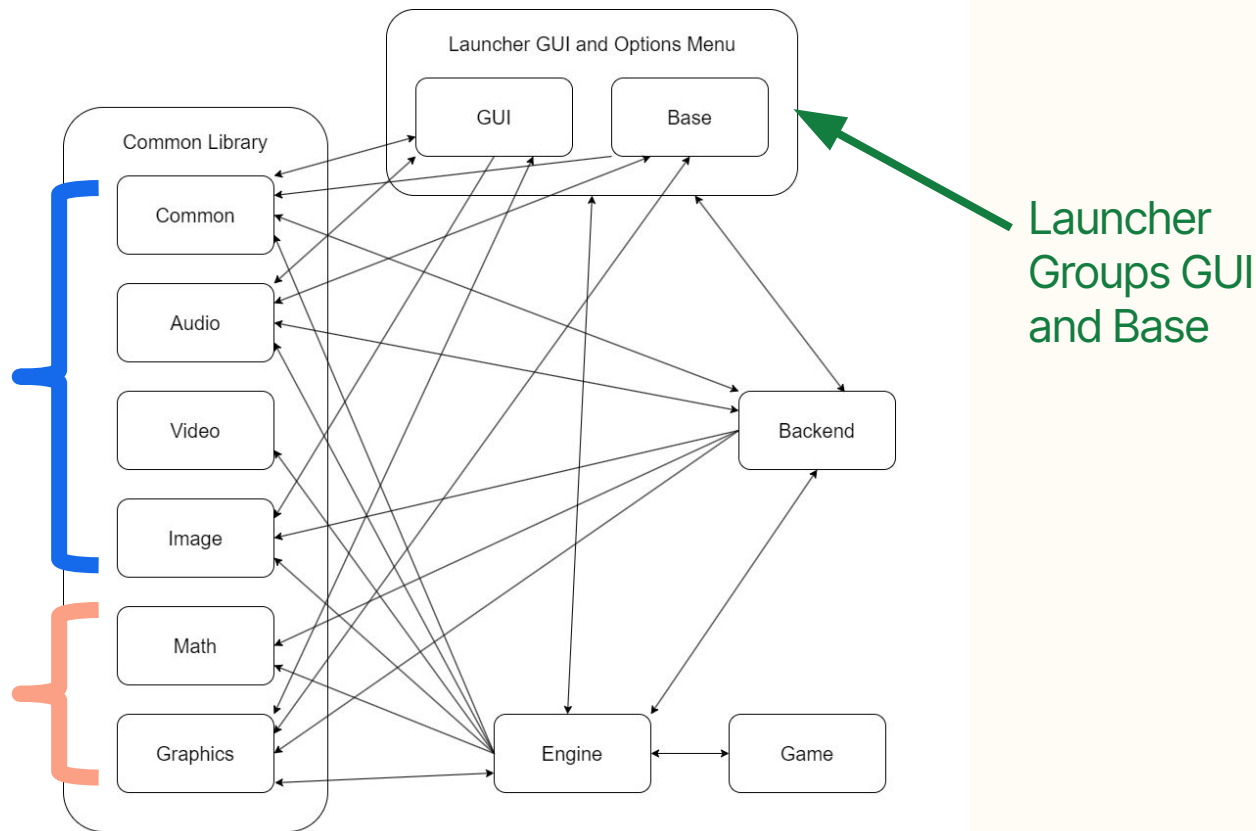
### Legend



# ScummVM Top-Level Architecture

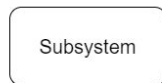
Documented  
Common Library  
Directories

Added Common  
Library Directories



Launcher  
Groups GUI  
and Base

Legend

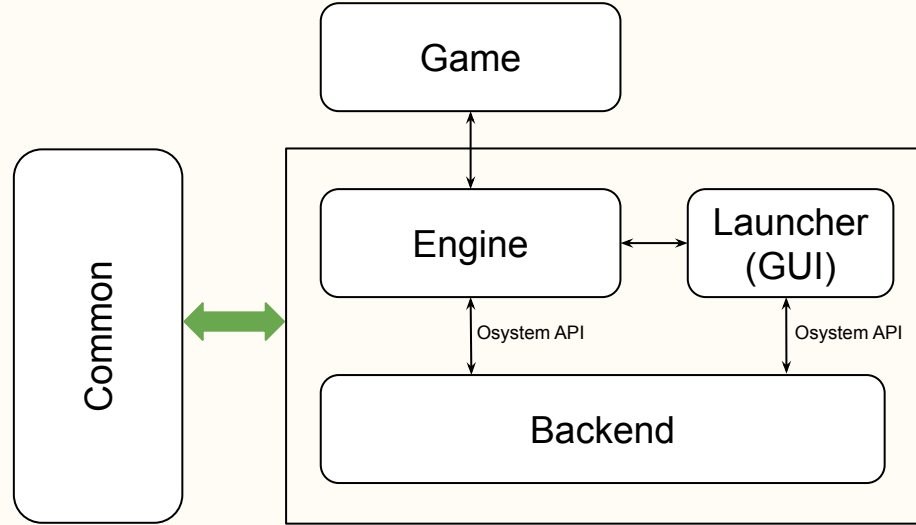


One way dependency

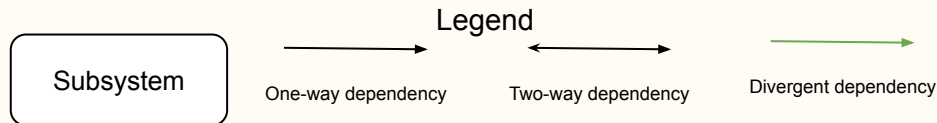
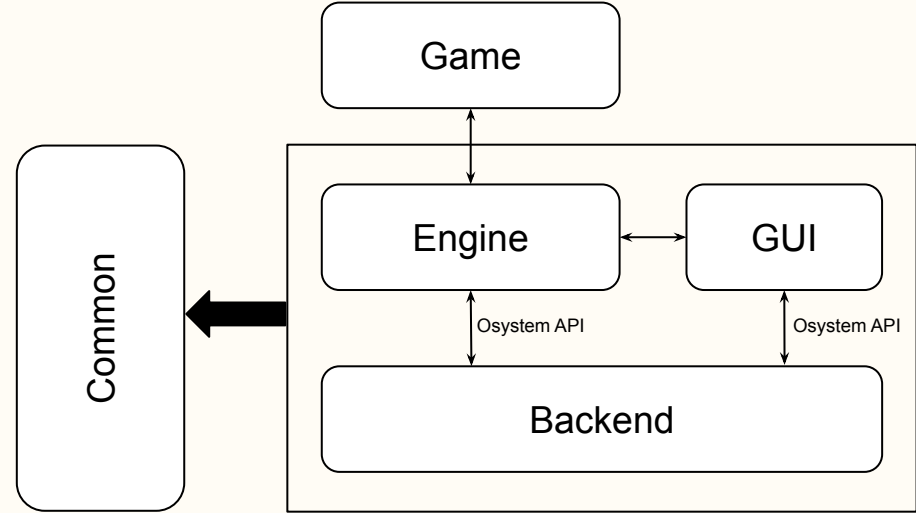
Two way dependency

# High-Level Reflexion Analysis

Concrete Architecture

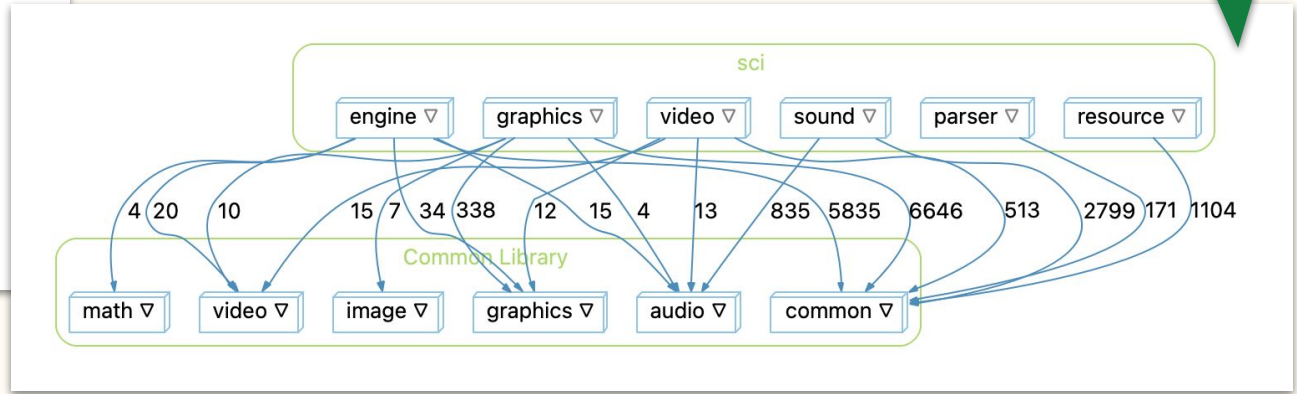
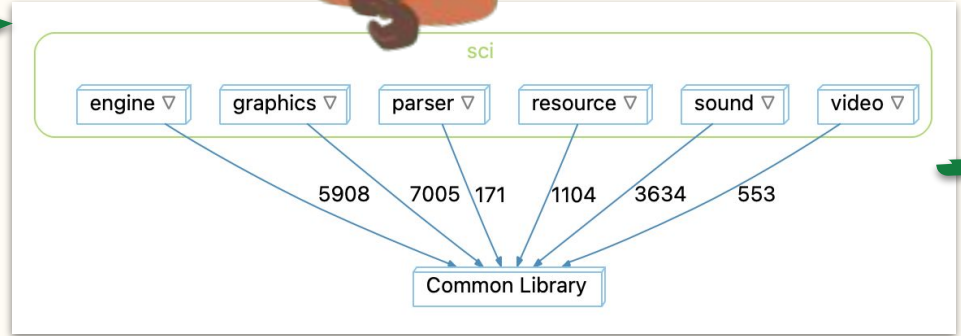
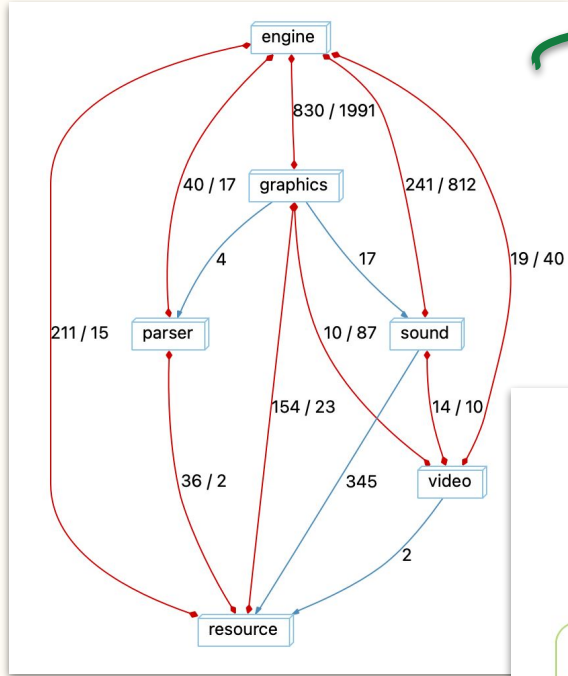


Conceptual Architecture



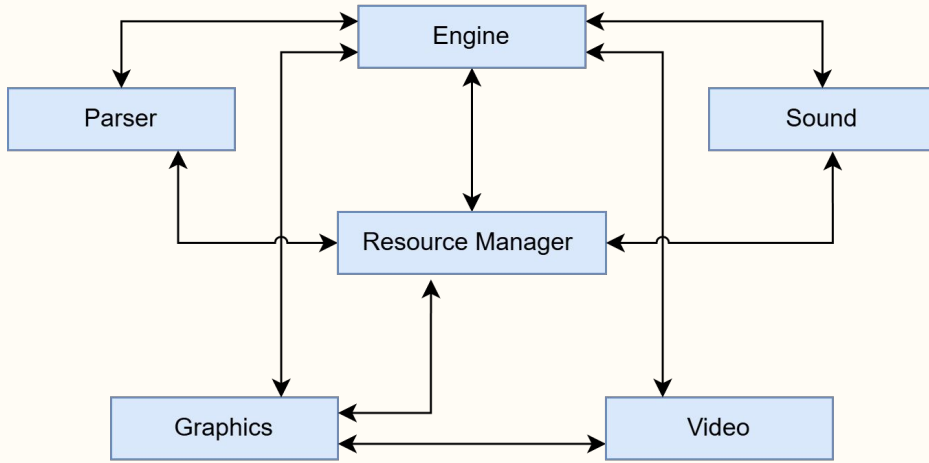


# SciEngine Components



# SciEngine Reflexion Analysis

SciEngine Conceptual Architecture

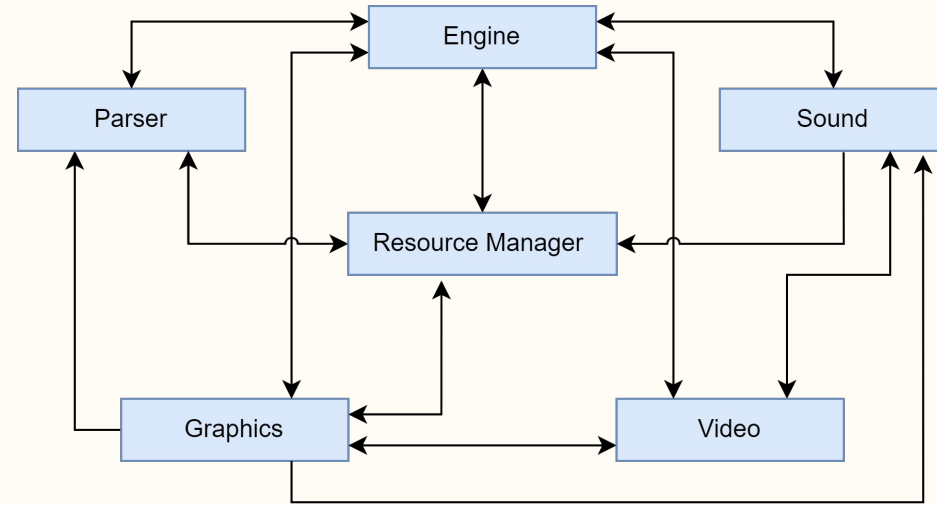


Component

↔  
2-Way Dependency

→  
1-Way Dependency

SciEngine Concrete Architecture



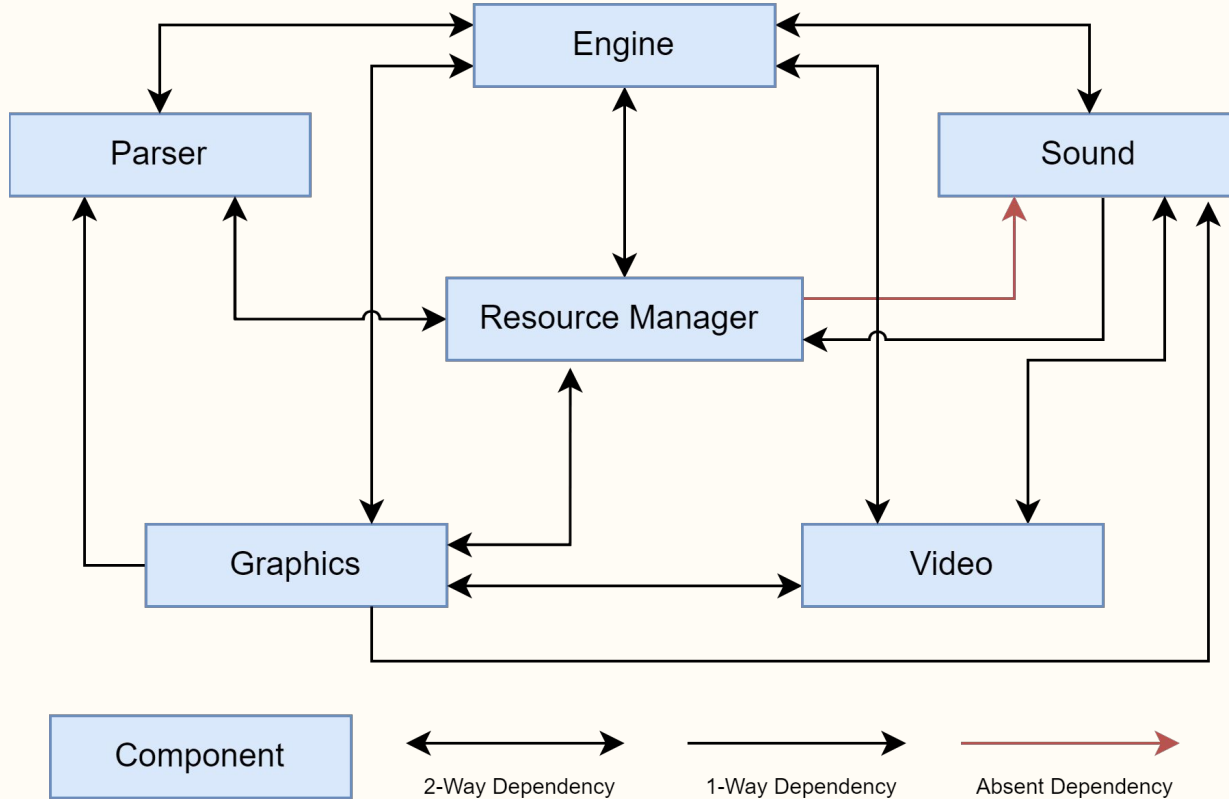
Component

↔  
2-Way Dependency

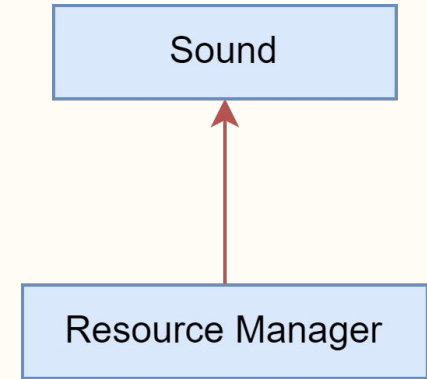
→  
1-Way Dependency

# SciEngine Reflexion Analysis

## SciEngine Concrete Arch. Reflexion Analysis (Absences)

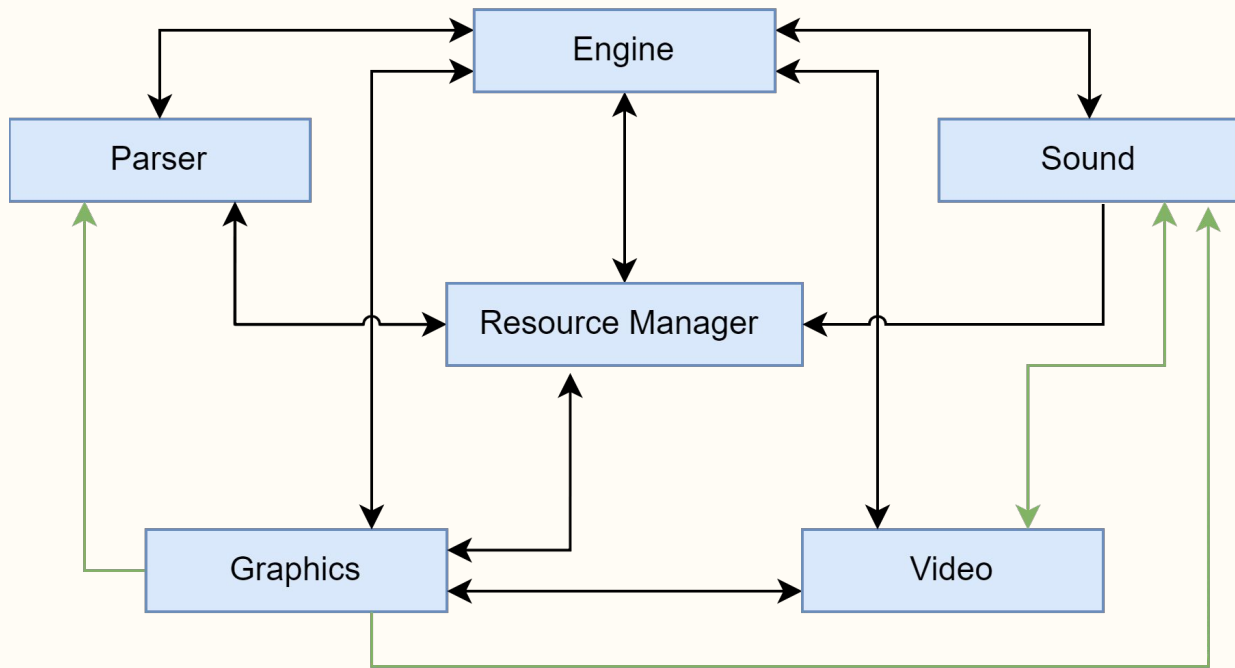


## Absences:

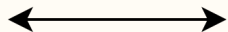


# SciEngine Reflexion Analysis

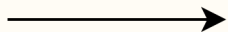
## SciEngine Concrete Arch. Reflexion Analysis (Divergences)



Component



2-Way Dependency

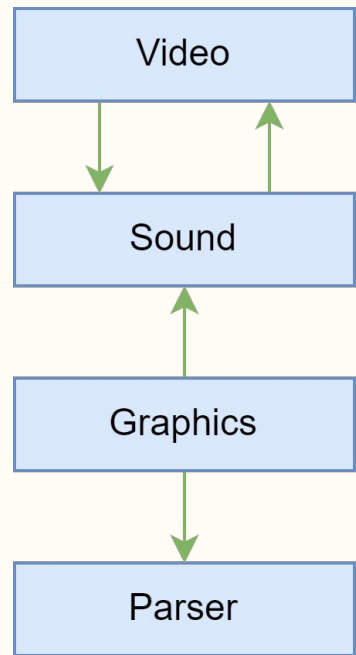


1-Way Dependency



Divergent Dependency

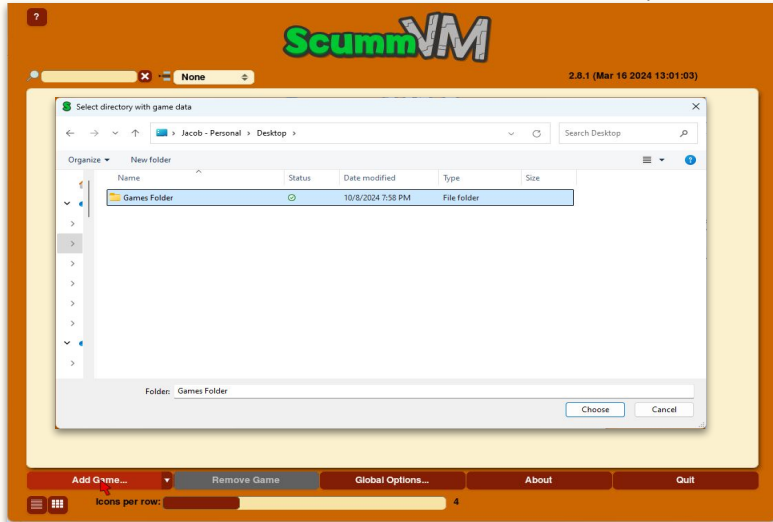
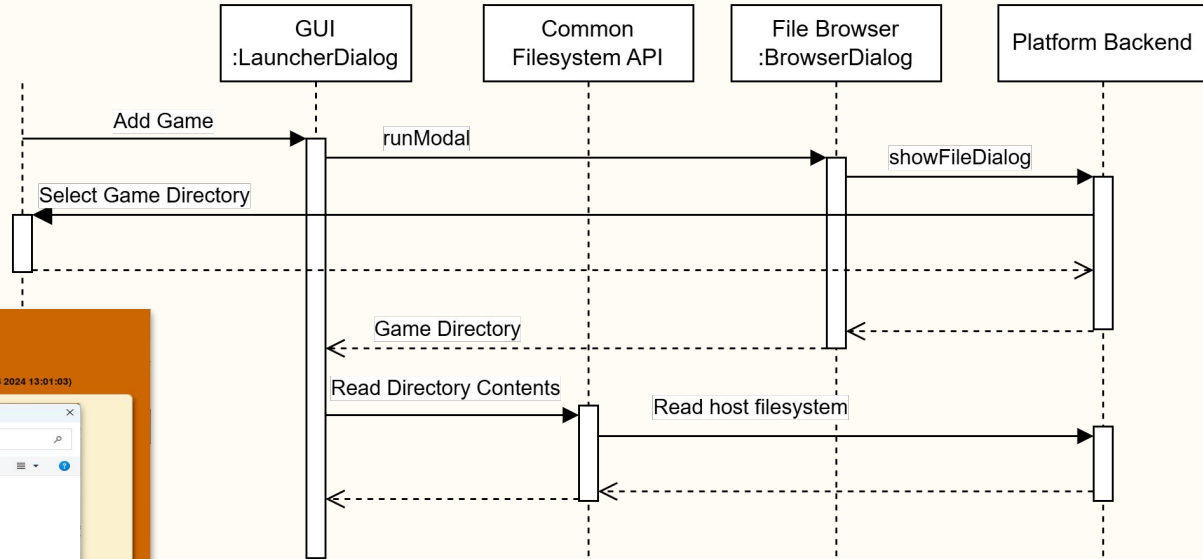
## Divergences:



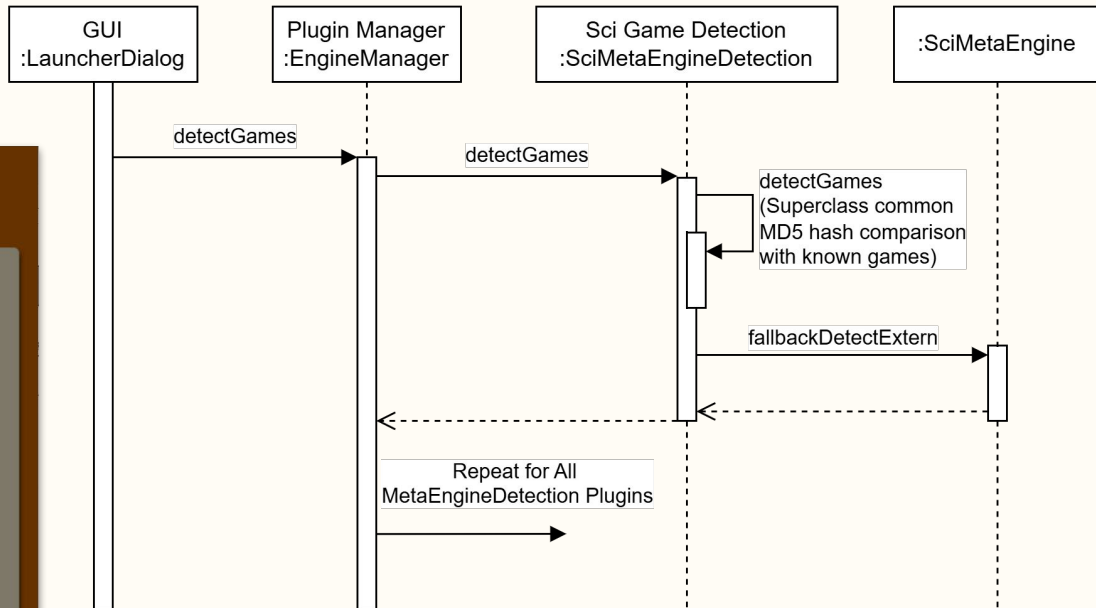
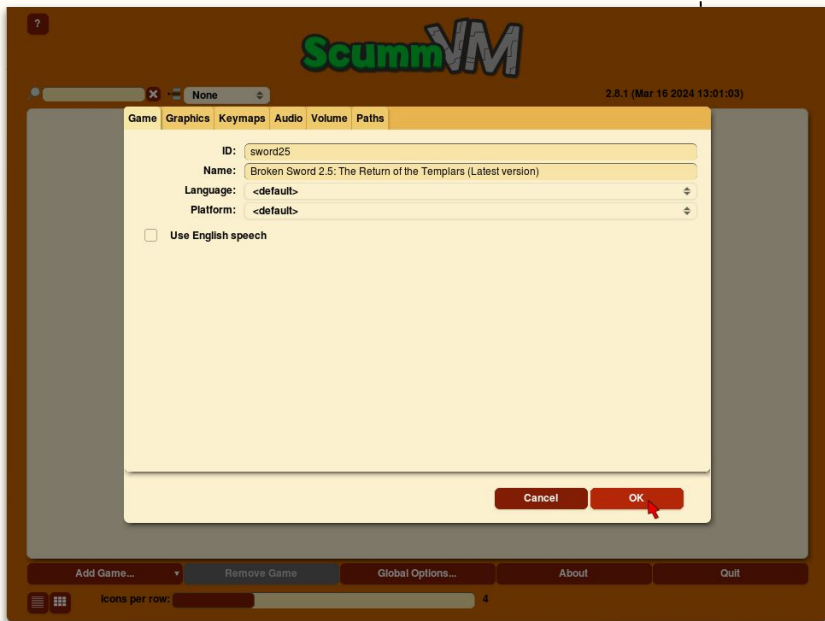
# Use Case: Adding Game



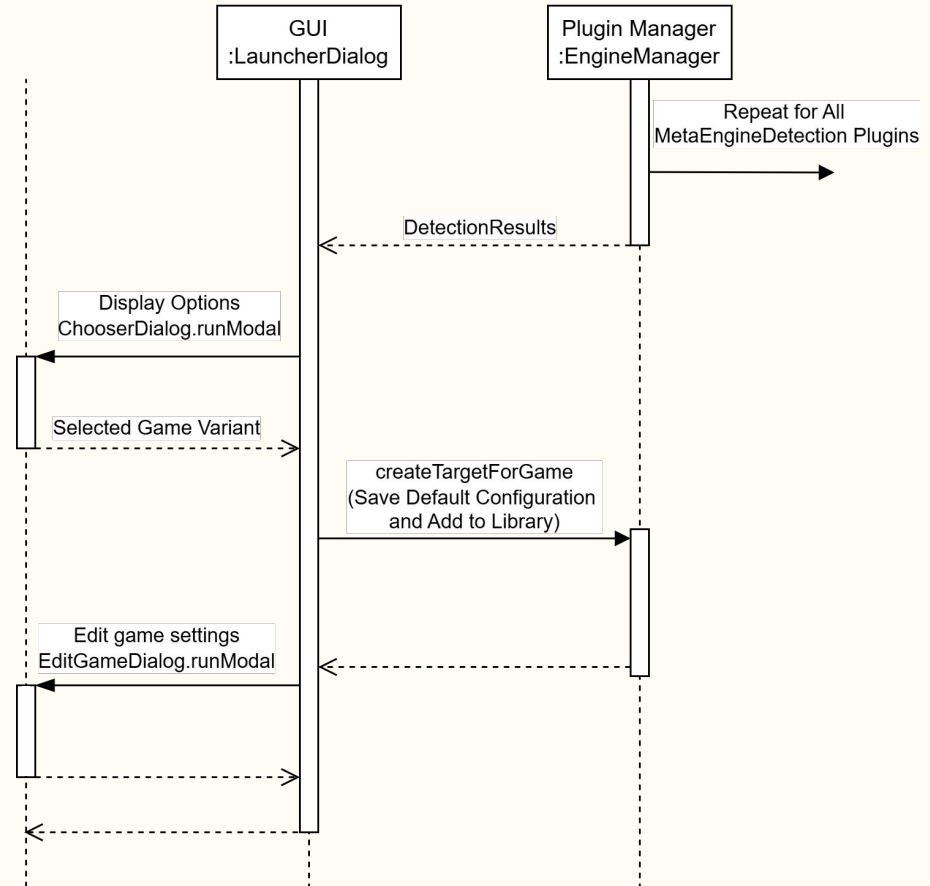
User



# Use Case: Adding Game



# Use Case: Adding Game





Closing thoughts...