

# Project Documentation Report

Generated automatically by the Documentation Engine.

## Project Path

C:\Users\91773\OneDrive\Desktop\Engine

## Generated At

2025-11-29T15:05:42.273086

## 1. Project Structure

{

## 2. File Dependencies

```
{ ".\analyze_project.py": [], ".\combine_data.py": [ ".\analyze_project.py", ".\extract_commit_changes.py" ], ".\demo.py": [ ".\dependency_graph.py": [], ".\detect_changed_functions.py": [ ".\function_ranges.py", ".\parse_diff.py" ], ".\example.py": [], ".\extract_commit_changes.py": [ ".\detect_changed_functions.py", ".\function_ranges.py" ], ".\function_call_graph.py": [], ".\function_ranges.py": [], ".\generate_docs.py": [], ".\parse_diff.py": [], ".\read_commits.py": [] }
```

## 3. Function Dependencies

```
{ "analyze_file": [], "analyze_imports": [], "analyze_project": [ "get_python_files", "analyze_file" ], "attach_commit_changes": [], "build_dependency_data": [ "build_file_dependency_graph", "build_filtered_call_graph" ], "build_file_dependency_graph": [ "build_module_to_file_map", "get_python_files", "analyze_imports" ], "build_filtered_call_graph": [ "get_python_files", "extract_defined_functions", "extract_calls" ], "build_index_by_file": [], "build_module_to_file_map": [ "get_python_files", "get_module_name" ], "build_prompt": [], "combine": [ "analyze_project", "extract_commit_changes", "build_index_by_file", "attach_commit_changes" ], "detect_changed_functions": [ "get_function_ranges", "get_changed_lines" ], "extract_calls": [], "extract_commit_changes": [ "detect_changed_functions" ], "extract_defined_functions": [], "farewell": [], "generate_markdown": [], "get_changed_lines": [], "get_function_ranges": [], "get_module_name": [], "get_python_files": [], "greet": [], "load_json": [], "load_template": [], "main": [ "load_json", "load_template", "build_prompt", "simulate_llm", "simulate_llm" ], "simulate_llm": [] }
```

## 4. Git Commit History

- **Commit:** a534d38ce95db8db89afdb1f8c3fde4cef57a804
  - **Message:** Refactor greet and add farewell function
  - **Changed Functions:** ['farewell', 'greet']
- 

- **Commit:** db08f4c0f9e9753b5221e12b92250a27d51a47d3
  - **Message:** Improve greeting format
  - **Changed Functions:** ['greet']
- 

- **Commit:** 61828ed4f03c598ee8db21946e2b83d45e41bc85
  - **Message:** Add greet function
  - **Changed Functions:** ['greet']
- 
- 

## 5. Change Impact Analysis

```
{ "61828ed4f03c598ee8db21946e2b83d45e41bc85": { "greet": { "direct_and_indirect_impact":  
[], "risk": "LOW" } }, "a534d38ce95db8db89afdb1f8c3fde4cef57a804": { "farewell":  
{ "direct_and_indirect_impact": [], "risk": "LOW" }, "greet": { "direct_and_indirect_impact": [],  
"risk": "LOW" } }, "db08f4c0f9e9753b5221e12b92250a27d51a47d3": { "greet":  
{ "direct_and_indirect_impact": [], "risk": "LOW" } } }
```

---

## 6. Evolution Timeline

```
{ "farewell": [ { "commit": "a534d38", "message": "Refactor greet and add farewell function" } ],  
"greet": [ { "commit": "61828ed", "message": "Add greet function" }, { "commit": "db08f4c",  
"message": "Improve greeting format" }, { "commit": "a534d38", "message": "Refactor greet and  
add farewell function" } ] }
```

---

## 7. Diff Explanations

**Commit: a534d38ce95db8db89afdb1f8c3fde4cef57a804 | Function: farewell**

File: .\demo.py - Summary: A docstring was added to the function. Return statement or returned value was modified. Function farewell was added: `def farewell(name):..`

---

**Commit: a534d38ce95db8db89afdb1f8c3fde4cef57a804 | Function: greet**

File: .\demo.py - Summary: A docstring was added to the function. Return statement or returned value was modified.

---

**Commit: db08f4c0f9e9753b5221e12b92250a27d51a47d3 | Function: greet**

File: .\demo.py - Summary: String/formatting change detected. Example removed: return "Hello " + name → added: return "Hello, " + name + "!". Return statement or returned value was modified.

---

**Commit: 61828ed4f03c598ee8db21946e2b83d45e41bc85 | Function: greet**

File: .\demo.py - Summary: Return statement or returned value was modified. Function greet was added: def greet(name) :.

---

---

## 8. Suggested Docstrings

**File: .\analyze\_project.py | Function: get\_python\_files**

**Arguments:** ['folder\_path']

**Has Return:** True

""" Get python files.

Parameters: folder\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\analyze\_project.py | Function: analyze\_file**

**Arguments:** ['file\_path']

**Has Return:** True

""" Analyze file.

Parameters: file\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\analyze\_project.py | Function: analyze\_project**

**Arguments:** ['folder\_path']

**Has Return:** True

""" Analyze project.

Parameters: folder\_path (any): Description.

Returns: any: Description.

"""

---

### **File: .\analyze\_project.py | Function: generate\_markdown**

**Arguments:** ['project\_data', 'output\_file']

**Has Return:** False

""" Generate markdown.

Parameters: project\_data (any): Description. output\_file (any): Description.

"""

---

### **File: .\combine\_data.py | Function: combine**

**Arguments:** ['project\_path']

**Has Return:** True

""" Combine.

Parameters: project\_path (any): Description.

Returns: any: Description.

"""

---

### **File: .\dependency\_graph.py | Function: get\_python\_files**

**Arguments:** ['folder']

**Has Return:** True

""" Get python files.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

### **File: .\dependency\_graph.py | Function: get\_module\_name**

**Arguments:** ['file\_path']

**Has Return:** True

""" Get module name.

Parameters: file\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: build\_module\_to\_file\_map**

**Arguments:** ['folder']

**Has Return:** True

""" Build module to file map.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: analyze\_imports**

**Arguments:** ['file\_path']

**Has Return:** True

""" Analyze imports.

Parameters: file\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: build\_file\_dependency\_graph**

**Arguments:** ['folder']

**Has Return:** True

""" Build file dependency graph.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: extract\_defined\_functions**

**Arguments:** ['tree']

**Has Return:** True

""" Extract defined functions.

Parameters: tree (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: extract\_calls**

**Arguments:** ['func\_node']

**Has Return:** True

""" Extract calls.

Parameters: func\_node (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: build\_filtered\_call\_graph**

**Arguments:** ['folder']

**Has Return:** True

""" Build filtered call graph.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\dependency\_graph.py | Function: build\_dependency\_data**

**Arguments:** ['folder']

**Has Return:** True

""" Build dependency data.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\detect\_changed\_functions.py | Function: detect\_changed\_functions**

**Arguments:** ['file\_path', 'diff\_text']

**Has Return:** True

""" Detect changed functions.

Parameters: file\_path (any): Description. diff\_text (any): Description.

Returns: any: Description.

"""

---

**File: .\diagram\_generator.py | Function: load\_dependencies**

**Arguments:** []

**Has Return:** True

""" Load dependencies.

Returns: any: Description.

"""

---

**File: .\diagram\_generator.py | Function: generate\_file\_dependency\_mermaid**

**Arguments:** ['files']

**Has Return:** True

""" Generate file dependency mermaid.

Parameters: files (any): Description.

Returns: any: Description.

"""

---

**File: .\diagram\_generator.py | Function:  
generate\_function\_dependency\_mermaid**

**Arguments:** ['funcs']

**Has Return:** True

""" Generate function dependency mermaid.

Parameters: funcs (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: load\_commit\_changes**

**Arguments:** ['path']

**Has Return:** True

""" Load commit changes.

Parameters: path (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: normalize\_code\_line**

**Arguments:** ['s']

**Has Return:** True

""" Normalize code line.

Parameters: s (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: detect\_punctuation\_change**

**Arguments:** ['added', 'removed']

**Has Return:** True

""" Detect punctuation change.

Parameters: added (any): Description. removed (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: detect\_signature\_change**

**Arguments:** ['added', 'removed', 'func\_name']

**Has Return:** True

""" Detect signature change.

Parameters: added (any): Description. removed (any): Description. func\_name (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: detect\_docstring\_change**

**Arguments:** ['added', 'removed']

**Has Return:** True

""" Detect docstring change.

Parameters: added (any): Description. removed (any): Description.

Returns: any: Description.



"""

---

**File: .\diff\_explainer.py | Function: detect\_return\_change**

**Arguments:** ['added', 'removed']

**Has Return:** True

""" Detect return change.

Parameters: added (any): Description. removed (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: detect\_logic\_change**

**Arguments:** ['added', 'removed']

**Has Return:** True

""" Detect logic change.

Parameters: added (any): Description. removed (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: explain\_changes\_for\_function**

**Arguments:** ['file\_path', 'func\_name', 'diff\_text']

**Has Return:** True

""" Explain changes for function.

Parameters: file\_path (any): Description. func\_name (any): Description. diff\_text (any): Description.

Returns: any: Description.

"""

---

**File: .\diff\_explainer.py | Function: build\_explanations**

**Arguments:** ['output\_md', 'output\_json']

**Has Return:** True

""" Build explanations.

Parameters: output\_md (any): Description. output\_json (any): Description.

Returns: any: Description.

"""

---

### **File: .\diff\_explainer.py | Function: get\_python\_files**

**Arguments:** ['folder']

**Has Return:** True

""" Get python files.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

### **File: .\docstring\_generator.py | Function: get\_python\_files**

**Arguments:** ['folder']

**Has Return:** False

""" Get python files.

Parameters: folder (any): Description.

"""

---

### **File: .\docstring\_generator.py | Function: build\_docstring**

**Arguments:** ['func\_name', 'args', 'has\_return']

**Has Return:** True

""" Build docstring.

Parameters: func\_name (any): Description. args (any): Description. has\_return (any): Description.

Returns: any: Description.

"""

---

### **File: .\docstring\_generator.py | Function: analyze\_file**

**Arguments:** ['file\_path']

**Has Return:** True

""" Analyze file.

Parameters: file\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\docstring\_generator.py | Function: generate\_docstrings**

**Arguments:** []

**Has Return:** True

""" Generate docstrings.

Returns: any: Description.

"""

---

**File: .\extract\_commit\_changes.py | Function: extract\_commit\_changes**

**Arguments:** []

**Has Return:** True

""" Extract commit changes.

Returns: any: Description.

"""

---

**File: .\function\_call\_graph.py | Function: get\_python\_files**

**Arguments:** ['folder']

**Has Return:** True

""" Get python files.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\function\_call\_graph.py | Function: extract\_defined\_functions**

**Arguments:** ['tree']

**Has Return:** True

""" Extract defined functions.

Parameters: tree (any): Description.

Returns: any: Description.

"""

---

**File: .\function\_call\_graph.py | Function: extract\_calls**

**Arguments:** ['func\_node']

**Has Return:** True

""" Extract calls.

Parameters: func\_node (any): Description.

Returns: any: Description.

"""

---

**File: .\function\_call\_graph.py | Function: build\_filtered\_call\_graph**

**Arguments:** ['folder']

**Has Return:** True

""" Build filtered call graph.

Parameters: folder (any): Description.

Returns: any: Description.

"""

---

**File: .\function\_ranges.py | Function: get\_function\_ranges**

**Arguments:** ['file\_path']

**Has Return:** True

""" Get function ranges.

Parameters: file\_path (any): Description.

Returns: any: Description.

"""

---

**File: .\function\_timeline.py | Function: load\_commit\_changes**

**Arguments:** []

**Has Return:** True

""" Load commit changes.

Returns: any: Description.

"""

---

**File: .\function\_timeline.py | Function: build\_timeline**

**Arguments:** []

**Has Return:** True

""" Build timeline.

Returns: any: Description.

"""

---

**File: .\generate\_docs.py | Function: load\_json**

**Arguments:** ['path']

**Has Return:** True

""" Load json.

Parameters: path (any): Description.

Returns: any: Description.

"""

---

**File: .\generate\_docs.py | Function: load\_template**

**Arguments:** ['path']

**Has Return:** True

""" Load template.

Parameters: path (any): Description.

Returns: any: Description.

"""

---

**File: .\generate\_docs.py | Function: build\_prompt**

**Arguments:** ['template', 'data']

**Has Return:** True

""" Build prompt.

Parameters: template (any): Description. data (any): Description.

Returns: any: Description.

"""

---

**File: .\generate\_docs.py | Function: simulate\_llm**

**Arguments:** ['prompt']

**Has Return:** True

""" Simulate llm.

Parameters: prompt (any): Description.

Returns: any: Description.

"""

---

**File: .\generate\_docs.py | Function: main**

**Arguments:** []

**Has Return:** False

""" Main.

"""

---

**File: .\impact\_analysis.py | Function: load\_dependencies**

**Arguments:** []

**Has Return:** True

""" Load dependencies.

Returns: any: Description.

"""

---

**File: .\impact\_analysis.py | Function: load\_commit\_changes**

**Arguments:** []

**Has Return:** True

""" Load commit changes.

Returns: any: Description.

"""

---

**File: .\impact\_analysis.py | Function: build\_reverse\_dependency\_graph**

**Arguments:** ['func\_graph']

**Has Return:** True

""" Build reverse dependency graph.

Parameters: func\_graph (any): Description.

Returns: any: Description.

"""

---

### File: .\impact\_analysis.py | Function: get\_full\_impact

**Arguments:** ['changed\_function', 'reverse\_graph']

**Has Return:** True

""" Get full impact.

Parameters: changed\_function (any): Description. reverse\_graph (any): Description.

Returns: any: Description.

"""

---

### File: .\impact\_analysis.py | Function: calculate\_risk\_level

**Arguments:** ['impact\_list']

**Has Return:** True

""" Calculate risk level.

Parameters: impact\_list (any): Description.

Returns: any: Description.

"""

---

### File: .\impact\_analysis.py | Function: build\_cia\_report

**Arguments:** []

**Has Return:** True

""" Build cia report.

Returns: any: Description.

"""

---

## 9. Quality Issues

```
{ ".\analyze_project.py": { "deep_nesting": [ { "function": "analyze_file", "nesting_depth": 5, "threshold": 3 }, { "function": "generate_markdown", "nesting_depth": 5, "threshold": 3 } ], "long_functions": [ { "function": "analyze_file", "length": 49, "threshold": 30 }, { "function": "generate_markdown", "length": 33, "threshold": 30 } ], "missing_docstrings":
```

```
[ "get_python_files", "analyze_file", "analyze_project", "generate_markdown" ],
"todo_comments": [], "too_many_parameters": [] }, ".\combine_data.py": { "deep_nesting":
[ { "function": "attach_commit_changes", "nesting_depth": 6, "threshold": 3 } ],
"long_functions": [ { "function": "attach_commit_changes", "length": 36, "threshold": 30 },
{ "function": "combine", "length": 55, "threshold": 30 } ], "missing_docstrings": [ "combine" ],
"todo_comments": [], "too_many_parameters": [] }, ".\demo.py": { "deep_nesting": [],
"long_functions": [], "missing_docstrings": [], "todo_comments": [], "too_many_parameters":
[] }, ".\dependency_graph.py": { "deep_nesting": [ { "function": "analyze_imports",
"nesting_depth": 4, "threshold": 3 }, { "function": "extract_calls", "nesting_depth": 4,
"threshold": 3 } ], "long_functions": [], "missing_docstrings": [ "get_python_files",
"get_module_name", "build_module_to_file_map", "analyze_imports",
"build_file_dependency_graph", "extract_defined_functions", "extract_calls",
"build_filtered_call_graph", "build_dependency_data" ], "todo_comments": [],
"too_many_parameters": [] }, ".\detect_changed_functions.py": { "deep_nesting": [],
"long_functions": [], "missing_docstrings": [ "detect_changed_functions" ], "todo_comments": [],
"too_many_parameters": [] }, ".\diagram_generator.py": { "deep_nesting": [], "long_functions":
[], "missing_docstrings": [ "load_dependencies", "generate_file_dependency_mermaid",
"generate_function_dependency_mermaid" ], "todo_comments": [], "too_many_parameters": [] },
".\diff_explainer.py": { "deep_nesting": [ { "function": "collect_added_removed_lines_in_func",
"nesting_depth": 5, "threshold": 3 }, { "function": "detect_signature_change", "nesting_depth": 4,
"threshold": 3 }, { "function": "explain_changes_for_function", "nesting_depth": 5, "threshold":
3 }, { "function": "build_explanations", "nesting_depth": 5, "threshold": 3 } ], "long_functions":
[ { "function": "extract_hunks", "length": 39, "threshold": 30 }, { "function":
"explain_changes_for_function", "length": 90, "threshold": 30 }, { "function":
"build_explanations", "length": 59, "threshold": 30 } ], "missing_docstrings":
[ "load_commit_changes", "normalize_code_line", "detect_punctuation_change",
"detect_signature_change", "detect_docstring_change", "detect_return_change",
"detect_logic_change", "explain_changes_for_function", "build_explanations",
"get_python_files" ], "todo_comments": [], "too_many_parameters": [] }, ".
\docstring_generator.py": { "deep_nesting": [], "long_functions": [], "missing_docstrings":
[ "get_python_files", "build_docstring", "analyze_file", "generate_docstrings" ],
"todo_comments": [], "too_many_parameters": [] }, ".\example.py": { "deep_nesting": [],
"long_functions": [], "missing_docstrings": [], "todo_comments": [], "too_many_parameters":
[] }, ".\extract_commit_changes.py": { "deep_nesting": [ { "function":
"extract_commit_changes", "nesting_depth": 4, "threshold": 3 } ], "long_functions": [],
"missing_docstrings": [ "extract_commit_changes" ], "todo_comments": [],
"too_many_parameters": [] }, ".\function_call_graph.py": { "deep_nesting": [ { "function":
"extract_calls", "nesting_depth": 4, "threshold": 3 } ], "long_functions": [], "missing_docstrings":
[ "get_python_files", "extract_defined_functions", "extract_calls", "build_filtered_call_graph" ],
"todo_comments": [], "too_many_parameters": [] }, ".\function_ranges.py": { "deep_nesting": [],
"long_functions": [], "missing_docstrings": [ "get_function_ranges" ], "todo_comments": [],
"too_many_parameters": [] }, ".\function_timeline.py": { "deep_nesting": [], "long_functions": [],
"missing_docstrings": [ "load_commit_changes", "build_timeline" ], "todo_comments": [],
"too_many_parameters": [] }, ".\generate_docs.py": { "deep_nesting": [], "long_functions": [],
"missing_docstrings": [ "load_json", "load_template", "build_prompt", "simulate_llm", "main" ],
"todo_comments": [], "too_many_parameters": [] }, ".\impact_analysis.py": { "deep_nesting":
[ { "function": "get_full_impact", "nesting_depth": 4, "threshold": 3 } ], "long_functions": [],
"missing_docstrings": [ "load_dependencies", "load_commit_changes",
"build_reverse_dependency_graph", "get_full_impact", "calculate_risk_level",
"build_cia_report" ], "todo_comments": [], "too_many_parameters": [] }, ".\parse_diff.py":
{ "deep_nesting": [], "long_functions": [], "missing_docstrings": [], "todo_comments": [],
"too_many_parameters": [] }, ".\quality_checker.py": { "deep_nesting": [ { "function":
"detect_long_functions", "nesting_depth": 4, "threshold": 3 }, { "function": "analyze_quality",
"nesting_depth": 4, "threshold": 3 } ], "long_functions": [ { "function": "analyze_quality",
```



```
"length": 39, "threshold": 30 } ], "missing_docstrings": [], "todo_comments": [],
"too_many_parameters": [] }, ".\read_commits.py": { "deep_nesting": [], "long_functions": [],
"missing_docstrings": [], "todo_comments": [], "too_many_parameters": [] } }
```

---

## 10. Naming Issues

```
{ ".\analyze_project.py": { "bad_classes": [], "bad_constants": [], "bad_functions": [],
"bad_variables": [] }, ".\combine_data.py": { "bad_classes": [], "bad_constants": [],
"bad_functions": [], "bad_variables": [] }, ".\demo.py": { "bad_classes": [], "bad_constants": [],
"bad_functions": [], "bad_variables": [] }, ".\dependency_graph.py": { "bad_classes": [],
"bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".\detect_changed_functions.py":
{ "bad_classes": [], "bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".
\diagram_generator.py": { "bad_classes": [], "bad_constants": [], "bad_functions": [],
"bad_variables": [] }, ".\diff_explainer.py": { "bad_classes": [], "bad_constants": [],
"bad_functions": [], "bad_variables": [] }, ".\docstring_generator.py": { "bad_classes": [],
"bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".\example.py": { "bad_classes":
[], "bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".\extract_commit_changes.py":
{ "bad_classes": [], "bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".
\function_call_graph.py": { "bad_classes": [], "bad_constants": [], "bad_functions": [],
"bad_variables": [] }, ".\function_ranges.py": { "bad_classes": [], "bad_constants": [],
"bad_functions": [], "bad_variables": [] }, ".\function_timeline.py": { "bad_classes": [],
"bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".\generate_docs.py":
{ "bad_classes": [], "bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".
\impact_analysis.py": { "bad_classes": [], "bad_constants": [], "bad_functions": [],
"bad_variables": [] }, ".\naming_checker.py": { "bad_classes": [], "bad_constants": [],
"bad_functions": [], "bad_variables": [] }, ".\parse_diff.py": { "bad_classes": [], "bad_constants":
[], "bad_functions": [], "bad_variables": [] }, ".\quality_checker.py": { "bad_classes": [],
"bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".\read_commits.py":
{ "bad_classes": [], "bad_constants": [], "bad_functions": [], "bad_variables": [] }, ".
\unused_function_detector.py": { "bad_classes": [], "bad_constants": [], "bad_functions": [],
"bad_variables": [] } }
```

---

## 11. Duplicate Functions

```
{ "1b264798cb01680e5826fcf3f602958c": [ { "file": ".\diagram_generator.py", "hash":
"1b264798cb01680e5826fcf3f602958c", "name": "load_dependencies" }, { "file": ".
\impact_analysis.py", "hash": "1b264798cb01680e5826fcf3f602958c", "name":
"load_dependencies" } ], "2afbc069f21d7ff2e7db723fd6a7e530": [ { "file": ".
\dependency_graph.py", "hash": "2afbc069f21d7ff2e7db723fd6a7e530", "name":
"get_python_files" }, { "file": ".\diff_explainer.py", "hash":
"2afbc069f21d7ff2e7db723fd6a7e530", "name": "get_python_files" }, { "file": ".
\function_call_graph.py", "hash": "2afbc069f21d7ff2e7db723fd6a7e530", "name":
"get_python_files" } ], "308610df5ddea9dda404ecb64205a586": [ { "file": ".
\duplicate_detector.py", "hash": "308610df5ddea9dda404ecb64205a586", "name":
"get_python_files" }, { "file": ".\naming_checker.py", "hash":
"308610df5ddea9dda404ecb64205a586", "name": "get_python_files" } ],
"4598621cea21282720223f6cfa672a6c": [ { "file": ".\diff_explainer.py", "hash":
"4598621cea21282720223f6cfa672a6c", "name": "load_commit_changes" }, { "file": ".
\generate_docs.py", "hash": "4598621cea21282720223f6cfa672a6c", "name": "load_json" } ],
"4d5e807fc3c2a3f86c3df65bb66b5ee9": [ { "file": ".\function_timeline.py", "hash":
```

```
"4d5e807fc3c2a3f86c3df65bb66b5ee9", "name": "load_commit_changes" }, { "file": ".\impact_analysis.py", "hash": "4d5e807fc3c2a3f86c3df65bb66b5ee9", "name": "load_commit_changes" } ], "58f3e1b2b6b717d869dbf30266b2cac1": [ { "file": ".\dependency_graph.py", "hash": "58f3e1b2b6b717d869dbf30266b2cac1", "name": "extract_calls" }, { "file": ".\function_call_graph.py", "hash": "58f3e1b2b6b717d869dbf30266b2cac1", "name": "extract_calls" } ], "b7666d20d7ce046aed487160015b520f": [ { "file": ".\dependency_graph.py", "hash": "b7666d20d7ce046aed487160015b520f", "name": "extract_defined_functions" }, { "file": ".\function_call_graph.py", "hash": "b7666d20d7ce046aed487160015b520f", "name": "extract_defined_functions" } ], "eeac32903a387104467ff303f577beef": [ { "file": ".\quality_checker.py", "hash": "eeac32903a387104467ff303f577beef", "name": "get_python_files" }, { "file": ".\unused_function_detector.py", "hash": "eeac32903a387104467ff303f577beef", "name": "get_python_files" } ], "f7f8181915de8dcf1d6f5641d25e81d4": [ { "file": ".\dependency_graph.py", "hash": "f7f8181915de8dcf1d6f5641d25e81d4", "name": "build_filtered_call_graph" }, { "file": ".\function_call_graph.py", "hash": "f7f8181915de8dcf1d6f5641d25e81d4", "name": "build_filtered_call_graph" } ] }
```

---

## 12. Unused Functions

```
{ ".\demo.py": [ "greet", "farewell" ], ".\example.py": [ "greet", "say_hi" ] }
```

---

## 13. Metadata

```
{ "generated_at": "2025-11-29T15:05:42.273086", "merged_unused_at": "2025-11-29T15:18:16.089804", "project_path": "C:\Users\91773\OneDrive\Desktop\Engine", "unused_source": "C:\Users\91773\OneDrive\Desktop\Engine\unused_functions.json", "version": "2.0" }
```

---

*End of Report*