Verification and Validation Report: SynthEddy

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1 Revision History

Date	Version	Notes
2024-04-15	1.0	Initial Commit

2 Symbols, Abbreviations and Acronyms

symbol	description
T	Test

[symbols, abbreviations or acronyms – you can reference the SRS tables if needed —SS]

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3 Functional Requirements Evaluation

4 Nonfunctional Requirements Evaluation

4.1 Usability

4.2 Performance

4.3 etc.

5 Comparison to Existing Implementation

This section will not be appropriate for every project.

6 Unit Testing

7 Changes Due to Testing

[This section should highlight how feedback from the users and from the supervisor (when one exists) shaped the final product. In particular the feedback from the Rev 0 demo to the supervisor (or to potential users) should be highlighted. —SS]

8 Automated Testing

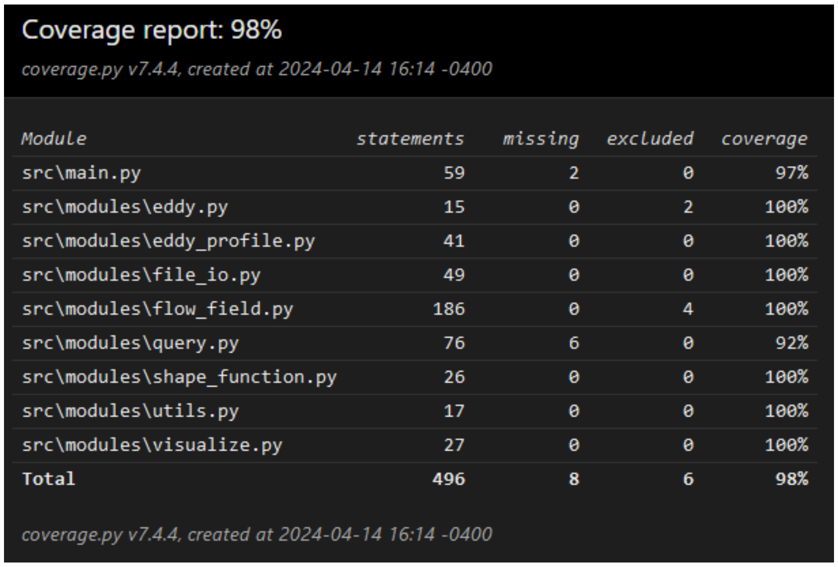
```
pytest --cov=src --cov-report html test -m "(unit and not slow) or
system"
```

9 Trace to Requirements

10 Trace to Modules

11 Code Coverage Metrics

Coverage is tested with pytest-cov, using the command shown in Section 8 that executes unit and system tests. An overall coverage of 98% is achieved, with coverage report is shown in Figure 1.



Coverage report: 98%

coverage.py v7.4.4, created at 2024-04-14 16:14 -0400

Module	statements	missing	excluded	coverage
src\main.py	59	2	0	97%
src\modules\eddy.py	15	0	2	100%
src\modules\eddy_profile.py	41	0	0	100%
src\modules\file_io.py	49	0	0	100%
src\modules\flow_field.py	186	0	4	100%
src\modules\query.py	76	6	0	92%
src\modules\shape_function.py	26	0	0	100%
src\modules\utils.py	17	0	0	100%
src\modules\visualize.py	27	0	0	100%
Total	**496**	**8**	**6**	**98%**

coverage.py v7.4.4, created at 2024-04-14 16:14 -0400

Figure 1: Coverage report

The only two modules that are not fully covered are `main` and `query`. The not covered lines are either related to exception handling with those exceptions already tested in lower level modules, or impossible to reach in automated testing (e.g. plot pop-up).

References

Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Reflection. Please answer the following question:

1. In what ways was the Verification and Validation (VnV) Plan different from the activities that were actually conducted for VnV? If there were differences, what changes required the modification in the plan? Why did these changes occur? Would you be able to anticipate these changes in future projects? If there weren't any differences, how was your team able to clearly predict a feasible amount of effort and the right tasks needed to build the evidence that demonstrates the required quality? (It is expected that most teams will have had to deviate from their original VnV Plan.)