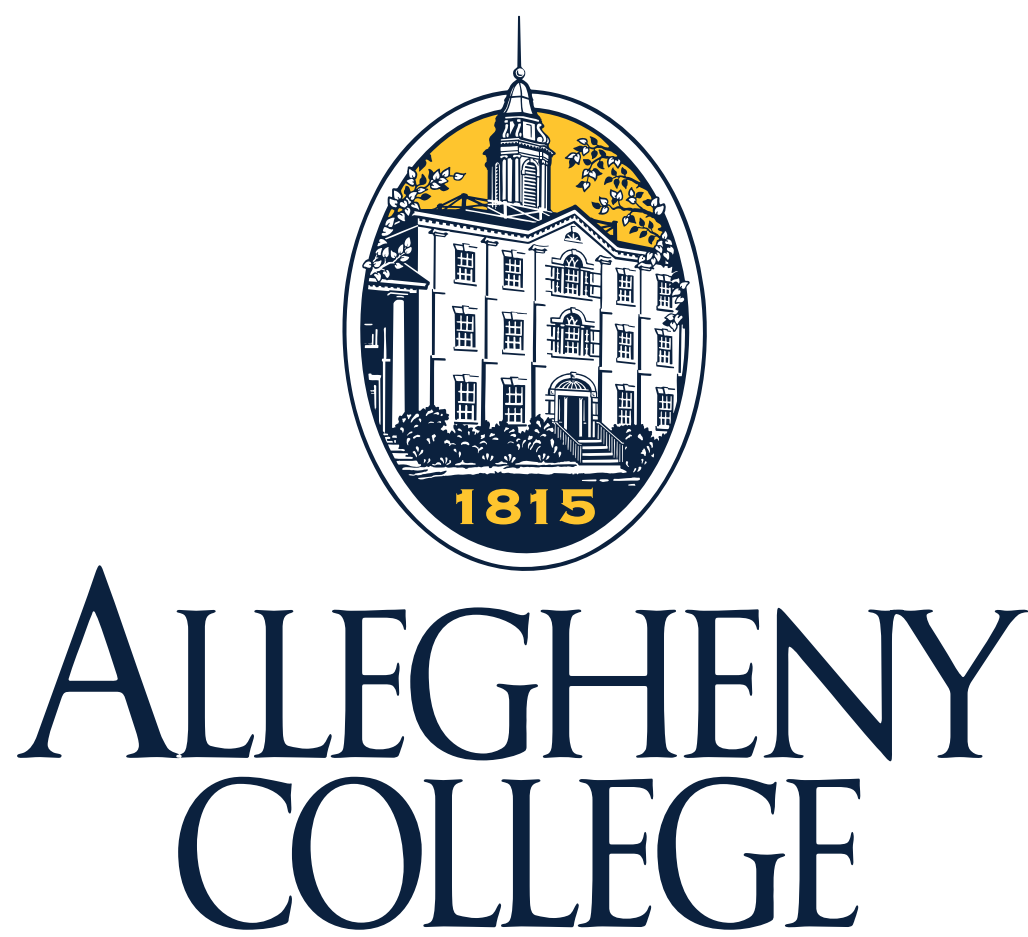
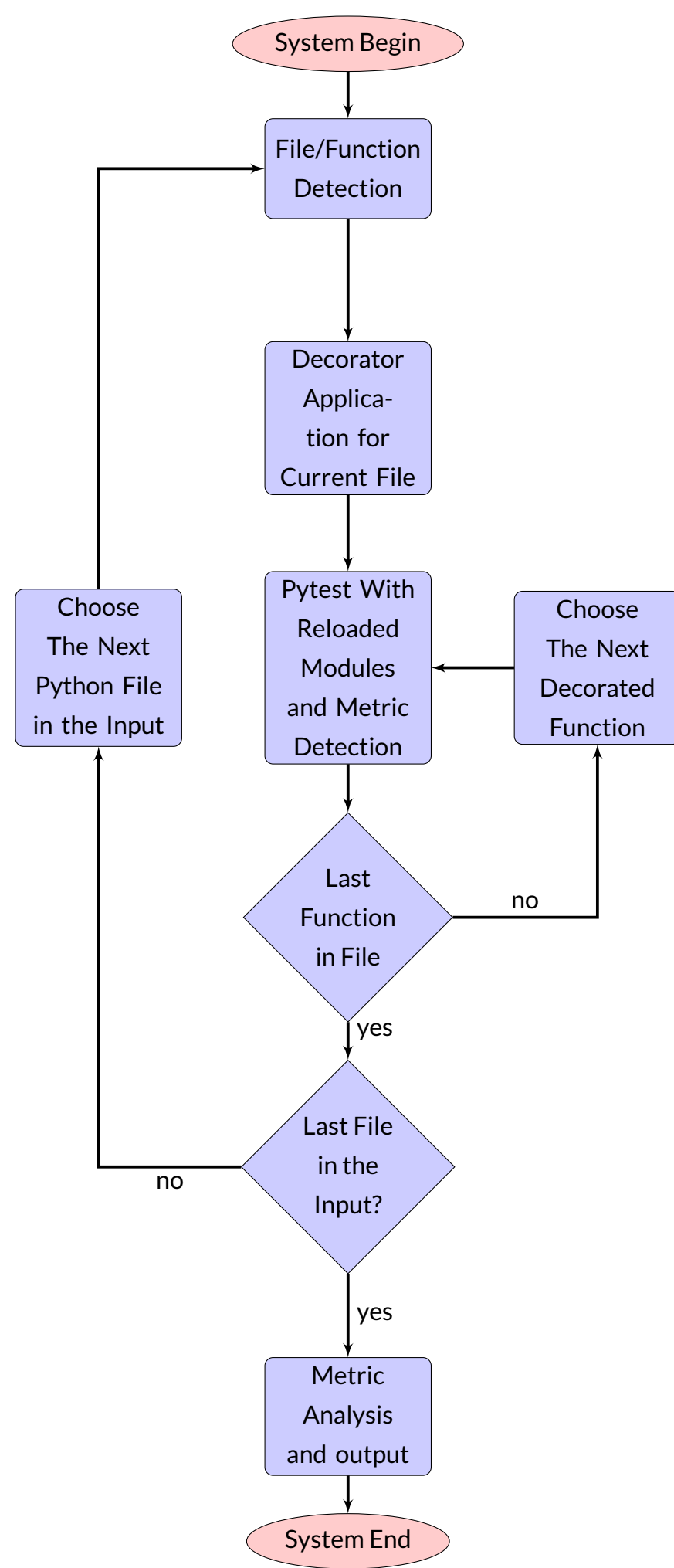


Automatic Detection of Pseudo-tested Methods using Python and Pytest

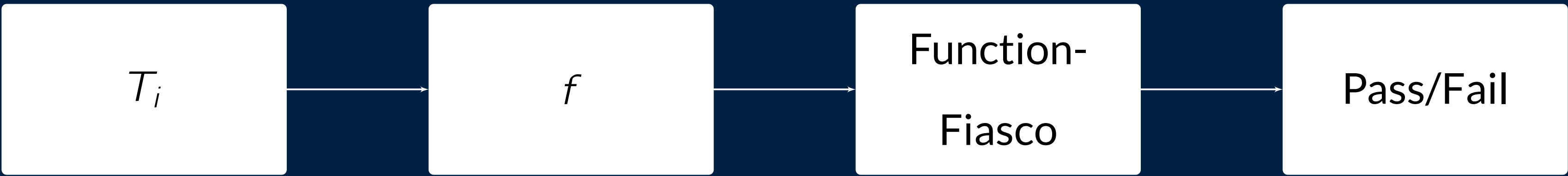
Nicholas Tocci
Gregory Kapfhammer

Introduction

Software systems are very large and complex. Due to this, modern python programs are difficult to test due to the lack of type safety. Another concern is the possible misleading nature of state-ment coverage since it doesn't factor in branches and iteration, there is no infor-mation on the data state, and the quality of the oracle. Due to this, there is a po-tential chance for psuedo-tested meth-ods to exist in python programs.



Function-Fiasco is an automatic tool that detects pseudo-tested methods in Python progams.



Scan the QR Code to visit our GitHub page

Preliminary Results

System Name	State Cov	Function Cov	NUMM	NUMTM	Fiascoed	Pseudo	NUMTM	UC	Change
1. Haskin-Python	0.97	0.94	16	15	10	8	7	0.44	0.50
2. Bleach	0.48	0.41	368	152	8	2	150	0.41	0.00
3. Pycco	0.77	0.86	22	19	6	5	14	0.64	0.22
4. Howdoi	0.76	0.95	20	19	2	0	19	0.95	0.00
5. Flashtext	0.81	0.33	42	14	7	4	10	0.24	0.09
6. Moncho	0.85	0.69	38	40	7	5	35	0.60	0.09
7. Mapo	0.90	0.50	88	44	13	3	41	0.67	0.03
8. Gator	0.99	0.86	92	79	54	30	49	0.53	0.33
9. Hatch	1.00	0.56	154	75	14	6	69	0.51	0.05
10. Nikola	0.67	0.44	732	319	16	9	310	0.42	0.02

Function-Fiasco has detected pseudo-tested methods in Python programs.

Future Work

Function-Fiasco has many features that need implementation which include:

- Further type fuzzing capability
- Parameterized test observation
- Updated Coverage Types

Function-Fiasco will continue to test systems for pseudo-tested methods.

Conclusion

Pseudo-tested methods are an issue that exist in Python based systems. Function-Fiasco can detect such methods that may lead to unexpected issues. Function-Fiasco can aid in the implementation of Python systems.

Get Involved

If you would like to get involved, submit bugs to the issue tracker on our Github project, or submit a pull request to aid in the implementation.

Acknowledgements

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