Software Fault Localization as a Service (SFLaaS)

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Objective

In this paper, we offer a tool named SFLaaS for locating faults in programs written in Python. The tool is provided as a service rather than as a plugin or a command-line tool to be installed, thus it can be accessed anytime and from anywhere.

SFLaaS User Interface

Our proposed tool supports different important features in fault localization. Using our tool could help developers find faults in their programs efficiently.
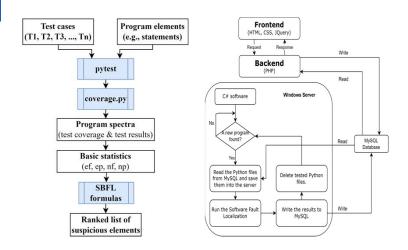

How Does SFLaaS Work?

The tool employs Spectrum-Based Fault Localization (SBFL) to help Python developers automatically analyze their programs and generate useful data at run-time to be used to produce a ranked list of potentially faulty program elements (i.e., statements).

The front-end interface allows users to submit their Python programs to be debugged. The back-end of the application retrieves the results and displays them to the user.

How to Access SFLaaS?

SFLaaS can be accessed via:

https://sflaas.daxazi.com/

Conclusion

SFLaaS is a localization tool for Python programs. It is implemented with many helpful and practical characteristics to aid developers in debugging their programs. Various seeded Python programs have been executed to assess the functionality of the tool, and the results showed that it can be easily used to locate faults in the subject programs.