I hope this message finds you well. I am writing to kindly inquire about the status of an issue I raised on GitHub regarding the detection of non-deterministic behaviors in FlowDroid approximately two weeks ago and I haven't received any feedback or updates on the matter.

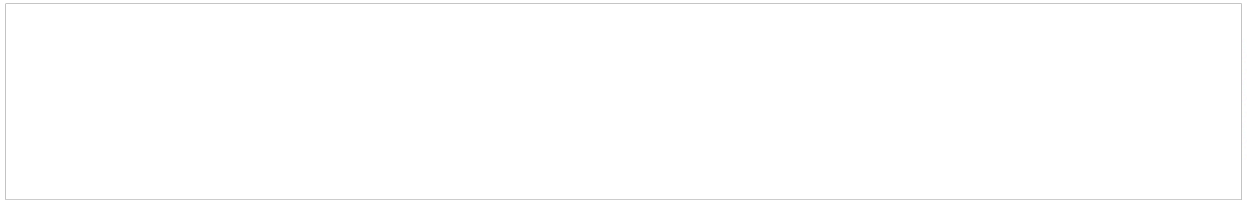
I understand that you and the team may be quite busy, but I would greatly appreciate it if you could spare some time to look into the issue and provide any insights or assistance you may have.

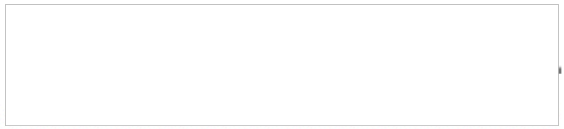
The GitHub issue link is provided here for your reference:

I sincerely appreciate any assistance you can offer. Please let me know if there's any additional information I can provide.

Thank you very much for your time and consideration.

Re: Request for Assistance with FlowDroid GitHub Issue





ⓘ You replied to this message.

During my master thesis, I have found another source of non-determinism. There was the assumption that structural equal neighbors (i.e. facts in the taint graph that reached a fixed point in the IFDS algorithm) are superfluous. However, this assumption does not hold as I have experienced on one app during the work. The corresponding fix landed in

Otherwise, we know that FlowDroid sometimes is deliberately non-deterministic. There are many many settings that are basically cut-offs to prevent running into cases where the runtimes would explode. So for example, even if we do not time out in the data flow analysis, the taint graph is intentionally not fully visited due to cut-offs (e.g., maximum neighbor count, maximum path length in the path builder, ...). Also, do not quote me on that, but I think even things like symbolic access paths (cutting lst.prev.next with a heuristic based on the types) might be non-deterministic because the store of subchains is global and if all stars are aligned, might yield different results dependent on the execution order in the IFDS solver. Besides, there is the recommended way of using FlowDroid+StubDroid with context-sensitive path builder, the typical flow-sensitive IFDS solver and the on-demand alias resolving. Some combinations of configurations might not make any sense and not all configuration options are actively used. So bugs in the actively used configuration, not influenced by cut-offs, might be more interesting than ones in old research projects or weird configurations.

But don't quote me on all of this. I cannot speak for the department, just for myself. Further, I have stopped working for the National Research Center for Applied Cybersecurity and thus, also stopped actively addressing issues in FlowDroid. If you want something quotable as well as a heads-up whether there is a plan to address these non-determinisms in the near future, you might want to ask Steven instead of me.