GUI Test Case Prioritization by State-coverage Criterion

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- Graphical User Interface (GUI) application is a event-driven software (EDS) that transforms state according to input events invoked through a user interface
- GUI test case prioritization techniques have been proposed to answer "which test case to execute next"
    - Random ordering – proved ineffective to break ties.
    - Hybrid criteria can be effective for tie breaking
- This paper proposes new criterion cooperating well with other criterion when breaking ties.
- State distance based method using state coverage to prioritize GUI test cases.
- Empirical study revealed that state base method is suitable for GUI test case prioritization and cooperates with other criterion.

Negative:

- only use three GUI programs which are all constructed in a similar manner, thus they may not be representative of the broader population of programs.
- used Java to implement the execution of event-based test cases on the GUI applications, and the process of similarities calculation as well as the test suites prioritization is completed by C#
- seeded faults also impact results to extend to other situations

Positives:

- to solve this problem, we develop and empirically evaluate a state-distance-based method for GUI test case prioritization and apply it to three GUI applications with different sizes.