GraphFuzz: Automated Testing of Graph Algorithm Implementations with Differential Fuzzing and Lightweight Feedback

List of bugs found by GraphFuzz in our experiment: Please note that in our paper, we reported Bug-4 and Bug-5 as the same bug because the root causes are the same.

Index	Algorithm	Logic	Link
1	Shortest Path Finding	Yes	https://github.com/networkx/networkx/issues/6874
2	Strongly Connected Component	Yes	https://github.com/networkx/networkx/issues/6897
3	Jaccard Similarity	Yes	https://github.com/igraph/igraph/issues/2432
4	Jaccard Similarity	No	https://github.com/igraph/igraph/issues/2438
5	Jaccard Similarity	No	https://github.com/networkx/networkx/issues/7108
6	Max Flow Value	No	https://github.com/igraph/igraph/issues/2437
7	AdamicAdar	Yes	https://github.com/igraph/igraph/issues/2448
8	Shortest Path Finding	Yes	https://github.com/networkx/networkx/issues/7362
9	Dice Similarity	Yes	https://github.com/igraph/igraph/issues/2438
10	Panther Similarity	No	https://github.com/networkx/networkx/issues/7108
11	Simrank Similarity	No	https://github.com/networkx/networkx/issues/7108
12	Preferential Attachment	No	https://github.com/networkx/networkx/issues/7108
13	Negative Edge Cycle	No	https://github.com/networkx/networkx/issues/6921

14	All node cut	Yes	https://github.com/networkx/networkx/issues/6533
15	Simple Cycle	Yes	https://github.com/networkx/networkx/issues/6052

16	Random Spanning Tree	No	https://github.com/networkx/networkx/issues/6920
17	Information Centrality	No	https://github.com/networkx/networkx/issues/6920
18	Intersection Array	No	https://github.com/networkx/networkx/issues/6920
19	Rich Club Coefficient	No	https://github.com/networkx/networkx/issues/6920
20	Effective Size	No	https://github.com/networkx/networkx/issues/6916
21	Global Reaching Centrality	No	https://github.com/networkx/networkx/issues/6914
22	Local Reaching Centrality	No	https://github.com/networkx/networkx/issues/6914
23	Degree Pearson Correlation Coefficient	No	https://github.com/networkx/networkx/issues/6913
24	Random Triad	No	https://github.com/networkx/networkx/issues/6915
25	Percolation Centrality	No	https://github.com/networkx/networkx/issues/6886