

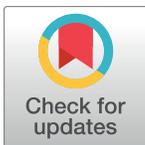
RESEARCH ARTICLE

Sequence diagram refactoring using single and hybridized algorithms

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Abstract

Data mining and search-based algorithms have been applied to various problems due to their power and performance. There have been several studies on the use of these algorithms for refactoring. In this paper, we show how search based algorithms can be used for sequence diagram refactoring. We also show how a hybridized algorithm of Kmeans and Simulated Annealing (SA) algorithms can aid each other in solving sequence diagram refactoring. Results show that search based algorithms can be used successfully in refactoring sequence diagram on small and large case studies. In addition, the hybridized algorithm obtains good results using selected quality metrics. Detailed insights on the experiments on sequence diagram refactoring reveal that the limitations of SA can be addressed by hybridizing the Kmeans algorithm to the SA algorithm.

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Citation: Baqais AAB, Alshayeb M (2018) Sequence diagram refactoring using single and hybridized algorithms. PLoS ONE 13(8): e0202629. <https://doi.org/10.1371/journal.pone.0202629>

Editor: Quanquan Gu, UCLA, UNITED STATES

Received: June 1, 2017

Accepted: August 7, 2018

Published: August 22, 2018

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Data Availability Statement: Data can be found at: https://figshare.com/articles/Big_data/5770017.

Funding: All funding support received during this specific study is given by "King Fahd University of Petroleum and Minerals". No individuals employed or contracted by the funders (other than the named authors) played any role in: study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing interests: The authors have declared that no competing interests exist.