Assignment: Cloud Algorithm Reimplementation and Optimization

Objective: The objective of this assignment is to encourage students to explore recent research articles related to the cloud computing, reimplement the algorithms discussed in the articles, and consider ways to optimize them.

Deadline: Week 12

Assignment Requirements

1. Research

Search for recent research articles (published between 2022-2024) on algorithms using Google Scholar.

Select an article that interests you (or your group) from the suggested topics, for instance but not limited to: sorting algorithms, task scheduling in any field, task scheduling in cloud computing, or scheduling in fog computing.

Summarize the chosen article, including its objectives, contributions, and findings.

2. Reimplementation

Reimplement the algorithm described in the selected research article.

Ensure that your code correctly represents the algorithm.

Document your code thoroughly and clearly.

3. Methodology Optimization

Identify potential areas for improving the methodology or efficiency of the algorithm.

Implement optimizations that aim to enhance the algorithm's performance.

4. Documentation

Create a structured documentation report with the following sections:

1. Introduction: Provide an overview of the assignment, the selected article, and the reimplementation goals.
2. Related Works: Summarize relevant existing research and how your work fits in.

3. Methodology: Describe the original algorithm's methodology and your approach to reimplement it.
4. Proposed Works: Explain the optimizations you have implemented and their expected impact.
5. Results and Discussion: Present your results, comparing the original and optimized methodologies, and discuss the findings.
6. Conclusion: Summarize your work, highlighting key contributions and lessons learned.
7. References: Cite all the sources and research articles used in your work.

5. Presentation

Prepare a PowerPoint presentation based on your documentation.

Each group member should actively participate in the presentation.

6. Evaluation (Individual)

Students will be assessed individually based on their participation in the project and their understanding of the assigned tasks.

Submission:

Submit your documentation and code via Turnitin.

Submit your PowerPoint presentation on the assigned presentation date.

Grading:

The assignment will be graded based on individual contributions, the quality of documentation, reimplementation accuracy, optimization impact, presentation, and understanding of the project. (it could be subjected to some changes)

1. Implementation (40%) & Contribution (10%)
   1.1 Problem Statement (10 points)
   1.2 Reimplementation (10 points)
   1.3 Methodology (10 points)
   1.4 contribution (10 points)

2. Documentation (20%)

2.1 Organization and Timing (10 points)
2.2 Organization of the report (10 points)

3. Presentation (30%)
   3.1 Clarity of Presentation (10 points)
   3.2 Discussion & Q&A (10 points)
   3.3 Delivery and Communication (10 points)

Best regards,

Dr. Mohammed Ala'anzy