Report for the Operating System Assignment 2

By Ezaz Ahmad

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Introduction:

In order to, ensure the effectiveness of the designed algorithm for mutual exclusion and its deadlock and starvation-free properties here I have performed a structured testing technique. This report demonstrates the testing technique, techniques applied, challenges that faced.

Testing Techniques:

Circular Wait Condition: Introduced scenarios that could induce circular waits to test for deadlocks.

Continuous Access: Certain tasks were made to request resources continually to check for potential starvation.

Techniques Applied:

Fair Queueing: Implemented fairness in resource allocation to avoid any task starvation.

Challenges:

The primary challenge was identifying subtle deadlocks in high concurrency scenarios. Detailed logging assisted in diagnosing such issues. Balancing fairness with performance also posed a challenge.

Conclusion:

Through rigorous testing, I am confident in the algorithm's ability to enforce mutual exclusion while remaining deadlock and starvation free. The tests underscored its resilience, especially in edge cases.