



Course: Algorithm Analysis and Design

Motivation

Algorithm Analysis and Design—Fundamental course. The course develops and enhances students thinking and designing capabilities. Design skills in parallel algorithms is likely to benefit students in many subsequent courses.

Lessons Learned

- It is challenging to teach parallelism topics in the course of Algorithms.
- Effective coverage of parallel topics on the algorithms course would be extremely beneficial for students in advanced courses.

Student Evaluations

Quiz

All pairs shortest path problem . For n pairs, this will be solved by using n single source shortest path problems.

Final Exam

Parallelize version of Divide and Conquer Algorithm and compute speedup.

Pedagogical Goals

Goal	Description
G1	Impart necessary knowledge about parallelism
G2	Strengthen Design and Analysis Skills for Parallel Algorithms
G3	Prepare Students for PDC programming

Plans for Future Adoption

- It is planned that PDC topics will be continued to be covered in the algorithms course.
- Students' comprehension may be improved by teaching the concerned parallel topic immediately after teaching the relevant parallel topic.

Observations

Students' secured lower marks in PDC topics as compared to non PDC topics.

Students evaluation was better in the final exam as compared to the Quiz. This is perhaps due to the fact that students were better prepared for the final exam.

Students performed better in the section of Divide and Conquer Algorithms.

Coverage of PDC Topics

Topic

Parallel Algorithm Design

Sync and Spawn

Fibonacci

What was Covered / How was covered ?

Asymptotic Analysis. Work done and Time Complexity

Thread synchronization in parallel algorithms

Parallel version with memoization

Alignment with Goals

G1 and G2

G2, and G3

G2, and G3