

COMP 322: Fundamentals of Parallel Programming (Spring 2014)

Instructor: Vivek Sarkar

Worksheet 3: due at end of class today

Name: _____

Netid: _____

Honor Code Policy: You are free to discuss all aspects of in-class worksheets with your other classmates, the teaching assistants and the professor during the class. You can work in a group and write down the solution that you obtained as a group. If you use any material from external sources, you must provide proper attribution.

Parallel Search and Abstract Metrics

Download Search.java from the Code Examples column for Lecture 3 in the course web page. Search.java contains a sequential program to search for a substring (pattern) in a given string (text), and return true if an occurrence is found. As discussed in Lecture 2, this program has been instrumented to count each character comparison as 1 unit of work from the viewpoint of abstract performance metrics, and ignore everything else.

Your lab assignment is to convert it to a parallel program that produces the correct answer with a smaller critical path length (and larger ideal parallelism) than the sequential version. You can explore alternate algorithms that reduce both the work and the critical path length further than what was discussed in the lecture. **Write down the WORK, CPL and IDEAL PARALLELISM values you see for your program with the default input.**