

CS5352.751/752, Distributed Computing, Summer II, 2020
Assignment 1

Issued: 07/09/2020

Due: 07/16/2020

1. (7 + 7 + 6 = 20 pts)

- (1) What is the relationship between cloud computing and distributed computing?
- (2) In your understanding, what are the most important characteristics of cloud computing?
- (3) Provide two example cloud computing applications.

2. (25 pts) For the transaction shown in Figure 1 please write a program that uses *fork* and *join* constructs to implement the transaction.

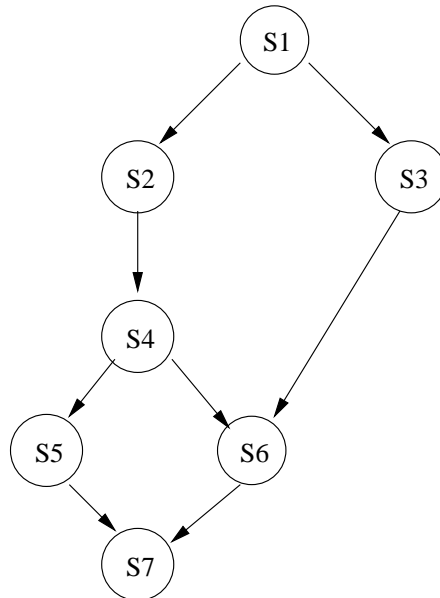


Figure 1: Comparison of fork-join and parbegin-parend Statement

3. (20 pts. Problem 3.2, p.142) The Internet is far too large for any router to hold routing information for all destinations. How does the Internet routing scheme deal with this issue?

4. (15 + 20 = 35 pts)

- (1) Describe the *dinning philosophers* problem. Is this problem also an example of the *critical section* problem? Please briefly explain.
- (2) Provide a solution to the dinning philosophers problem using only semaphores.

All homework assignments are submitted online. No email submission is accepted. Please follow my announcement in class about submitting assignments and project through the class forum's homework/project management panel.