

CSCE 5160: Solutions to Homework #3

3.2.

1. Maximum degree of concurrency

- a). 8 b). 8 c). 8 d). 8

Part d is tricky, since if you assume each task completes in the same amount of time you might answer that the maximum concurrency is c.

2. Critical path

- a). 4 b). 4 c). 7 d). 8

3. Maximum available speed up

- a). $15/4$ (15 tasks executed in serial vs using parallelism)
b). 15.4
c). $14/7 = 2$
d). $15/8$

4. Maximum number of processors needed (equals maximum concurrency)

- a). 8
b). 8
c). 3
d). 8 (or 2 as I mentioned above)

5. Speed up if limited processors are available

processors = 2

- a). $15/8$ b). $15/8$ c). $14/10$ d). $15/8$

processor = 4

- a). $15/5$ b). $15/5$ c). $14/9$ d). $15/8$

processor = 8

- a). $15/4$ b). $15/4$ c). $14/7$ d). $15/8$

3.6. Here I am using line numbers of Figure 3.27 (page 121) as nodes in a task graph

Critical path.

1,2,6,10,11,13,14, 1,2,6,10,12,13,14, 1,4,6,10,11,13,14, 1,4,6,10,12,13,14

3.11

3.15