NAME: Chris Allulis

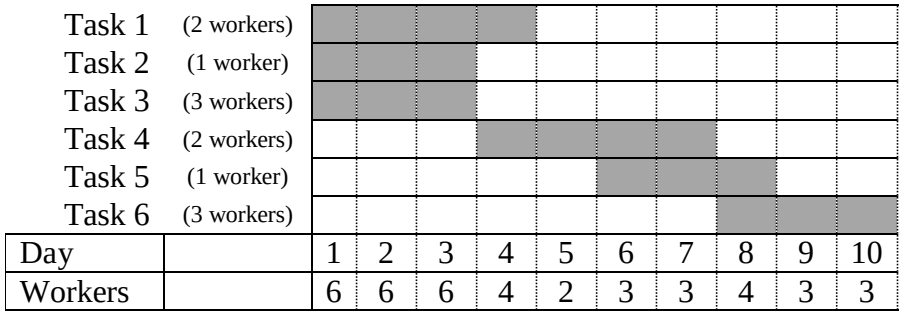
COSC609 – Assignment 4

INDIVIDUAL SSIGNMENT

Due: Monday, March 26

(Turn in via Blackboard or hardcopy in class by our 7pm class time)

1. Using the following figure, perform **resource leveling**. Assume that each task can be performed independently of the other tasks.



Day		1	2	3	4	5	6	7	8	9	10
Workers		6	6	6	4	2	3	3	4	3	3

(Use the following blank table to assist in answering.)

Task 1																				
Task 2																				
Task 3																				
Task 4																				
Task 5																				
Task 6																				
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Workers	3	3	3	3	3	3	2	2	3	3	3	3	3	3						

2. Using the same figure as in #1, perform **resource-limited scheduling**. Assume that you have only three workers available at any given time. Use slack to determine priority (as per the example in the text in Chapter 6)

Each task is independent…

Task 1																				6
Task 2																				7
Task 3																				7
Task 4																				6
Task 5																				7
Task 6																				7
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	SL
Workers	12	12	12	4																

First resource allocation

Task 1 and Task 4 are tied for the tasks with the least slack.

Task 1																					6
Task 2																					7
Task 3																					3
Task 4																					2
Task 5																					4
Task 6																					3
Day	1	2	3	4	5	6	7	8	9		10	11	12	13	14	15	16	17	18	19	SLA
Workers	3	3	3	3	9	9	8	2	0		0										

Second resource allocation

Task 4 now has the smallest slack. We will prioritize it and move task 3 and task 6 forward

Task 1																				6
Task 2																				7
Task 3																				-1
Task 4																				2
Task 5																				4
Task 6																				-1
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	SLA
Workers	3	3	3	3	3	3	2	2	6	6	6									

Third resource allocation

There aren't enough workers to schedule task 3 and task 6 at the same time.
We can just move task 6 forward. Now we're finished

Task 1																				
Task 2																				
Task 3																				
Task 4																				
Task 5																				
Task 6																				
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Workers	3	3	3	3	3	2	2	3	3	3	3	3	3	3						

The new project completion time is <u>14 days</u>