

12. Monday morning Baxter Industries has the following jobs waiting for processing in two departments, milling and drilling, in that order:

Job	Time Required (hours)	
	Mill	Drill
216	7	4
327	6	10
462	10	3
519	5	6
258	3	9
617	7	2

Develop a minimum makespan schedule using Johnson's rule.

13. Graph the minimum makespan schedule in problem 12 on a Gantt chart.

14. Dan's Auto Detailing business performs two major activities: exterior cleanup and interior detailing. Based on the size of the car and its condition, time estimates for six cars on Monday morning are as follows:

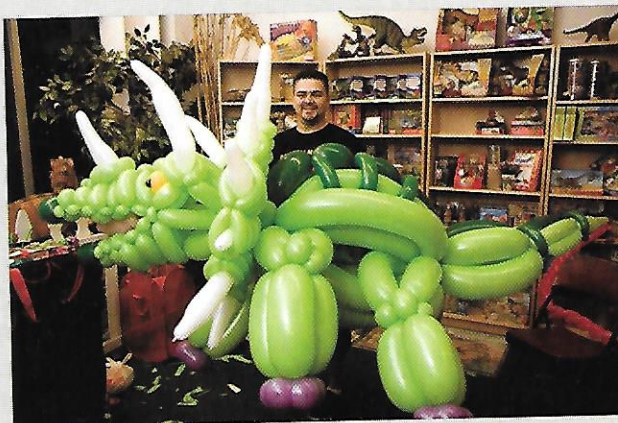
	Car Number					
	1	2	3	4	5	6
Exterior	30	35	90	65	45	80
Interior	10	40	20	45	25	55

Sequence the cars so that all exterior detailing is done first and total completion time is minimized.

15. Draw a Gantt chart of your solution to problem 14. Evaluate the idle time, if any, for these two resources—exterior and interior cleaning capability.

Balloons Aloha Case Study

Susie Davis owns Balloons Aloha and must fill balloons with helium and assemble them into certain configurations today for six major parties. Her six customer jobs all need to use the same helium tank (that is, the single processor), and she was wondering what might be the best way to sequence these jobs. Client (job) number 5 is Balloons Aloha's top customer. Her assistant store manager, Lee Sailboat, wants to process them in sequential order (i.e., 1, 2, 3, 4, 5, and 6). Because the balloons lose air quickly, the company waits until the day of the parties to fill them and then the workload is hectic. Business is booming and growing about 15 percent per year in their new store location. The job processing time estimates are as follows:



Michael Newman/PhotoEdit

The company fills the balloons on the day of the party, so the workload is hectic.

Job	1	2	3	4	5	6
Processing time (min.)	240	130	210	90	170	165
Due dates (6 a.m. to midnight in minutes from opening)	240	360	480	240	720	780

Case Questions for Discussion

1. Compute the average flow time, lateness, and tardiness for this group of jobs using Mr. Sailboat's sequential order of 1 (first), 2, 3, 4, 5, and 6 (last).
2. In what order would the jobs be processed using the SPT rule? Compute the average flow time, lateness, and tardiness for this group of jobs.
3. Compare the answers in questions 1 and 2.
4. What are your short-term recommendations for this set of six jobs? Justify and explain.
5. What are your long-term recommendations with respect to sequencing jobs at Balloons Aloha? Justify and explain.