

Production Game assignment:
Due October 6

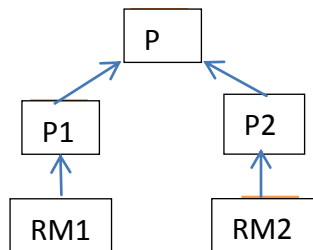
Your assignment is to schedule a small job-shop with the objective to maximize your cash after two weeks. You start with \$1500 and you must pay a fixed operating cost of \$2500 at the end of each week. There are no loans available and you go out of business if you run out of cash.

The supplier is situated very close to your plant and can deliver ordered material with no lead time, but also demands that you pay for supplied material (RM1 and RM2) at delivery. The market demand for product (P) is unlimited during the game. However, the demand for each spare part (P1 and P2) is limited by the amount of P that has been sold; that is, if you have sold 75 units of P, then you can sell up to 75 units of P1 and up to 75 units of P2.

The market prices of these products can be obtained from the table below:

	Item Price (\$ per unit)
Raw Material RM1	10
Raw Material RM2	10
Product P	60
Spare Part P1	30
Spare Part P2	30

The bill of material for the item you are producing is:



Manufacturing takes place in a small job shop consisting of three machines identified as *Red*, *Green* and *Yellow*. The routings of the three items are given below:

Item	Operation	Machine	Setup time (min)	Operation time (min/unit)
P1	A	Red	240	22
P2	B	Green	180	7
	C	Red	240	8
P	D	Green	180	10
	E	Yellow	0	17

Assignment

- Which products are most profitable, and how does this affect your scheduling?
- Develop a scheduling strategy or plan that will maximize your cash at the end of two weeks, without running out of cash.
- Use the simulator to test your strategy.

Prepare a short write up that explains your scheduling strategy and how well it works with the simulator. How much cash do you have at the end of two weeks? If you continued, how much cash could you make per week?

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