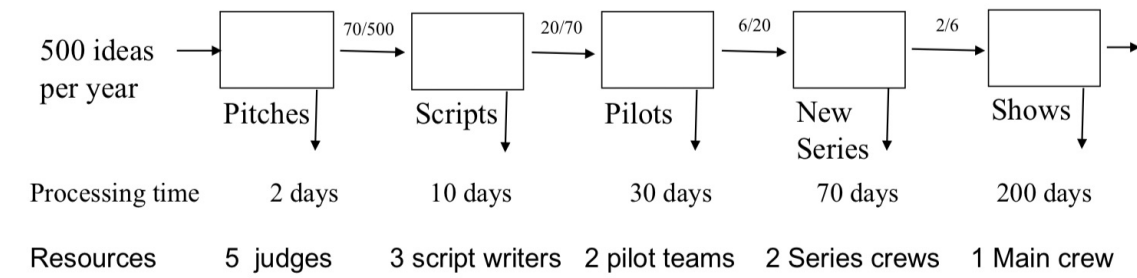


1) 영화제작 Attrition Loss ✖✖

Where is the Bottleneck?



Assume we have 250 days per year !

Resources	Processing time	Number of Workers	Available capacity(day/year)	Pitches	Scripts	Pilots	New Series	Shows	Total workload	Implied Utilization
Judges	2 days	5	1250	500*2	0	0	0	0	1000	0.8
Script wirters	10 days	3	750	0	70*10	0	0	0	700	0.933333
Pilot teams	30 days	2	500	0	0	20*30	0	0	600	1.2
Series crews	70 days	2	500	0	0	0	6*70	0	420	0.84
Main crew	200 days	1	250	0	0	0	0	2*200	400	1.6

Bottle neck은 Shows에서 발생

Q. Task의 capacity를 재검토 해볼 필요가 있는 것 같다..
어떻게 해결할지 모르겠음..

2)

3.8 Practice Problems

The following questions will help in testing your understanding of this chapter. After each question, we show the relevant section in parentheses [Section x].

Solutions to problems marked with an "*" are available in Appendix E. Video solutions to select problems are available in Connect.

Q3.1* (Process Analysis with One Flow Unit) Consider a process consisting of three resources:

Resource	Processing Time [Min./Unit]	Number of Workers
1	10	2
2	6	1
3	16	3

What is the bottleneck? What is the process capacity? What is the flow rate if demand is eight units per hour? [3.2] What is the utilization of each resource if demand is eight units per hour? [3.4]

Resource	Processing Time(min/unit)	Number of Workers	Available Capacity (units/hour)	Utilization
1	10	2	$120/10=12$	0.666667
2	6	1	$60/6=10$	0.8
3	16	3	$180/16=11.25$	0.711111

① Bottleneck은 Resource 2

② Process capacity는 10

③ Demand가 동일시 process capacity 보다 작으므로 flow rate은 동일하다.

④ Utilization은 $\frac{\text{Available Capacity}}{\text{Flow rate}}$ 로 위의 표와 같은 결과값이 나오게 된다.

3)

Q3.2* (Process Analysis with Multiple Flow Units) Consider a process consisting of five resources that are operated eight hours per day. The process works on three different products, A, B, and C:

Resource	Number of Workers	Processing Time for A [Min./Unit]	Processing Time for B [Min./Unit]	Processing Time for C [Min./Unit]
1	2	5	5	5
2	2	3	4	5
3	1	15	0	0
4	1	0	3	3
5	2	6	6	6

Demand for the three different products is as follows: product A, 40 units per day; product B, 50 units per day; and product C, 60 units per day.

What is the bottleneck? What is the flow rate for each flow unit assuming that demand must be served in the mix described above (i.e., for every four units of A, there are five units of B and six units of C)? [3.6]

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Resource	Number of workers	Available capacity(min/day)	A(min/unit)	B(min/unit)	C(min/unit)	Total workload	Implied Utilization
1	2	960	5	5	5	750	0.78125
2	2	960	3	4	5	620	0.645833
3	1	480	15	0	0	600	1.25
4	1	480	0	3	3	330	0.6875
5	2	960	6	6	6	900	0.9375
		daily demand	40	50	60		

① Bottleneck resource 3

② Flow rate (unit/day) $\Rightarrow A: 480 / 15 = 32$
 $\Rightarrow 32 / 40 = 0.8$ (현재 수요의 80%만 만족)

$B: 50 \times 0.8 = 40$

$C: 60 \times 0.8 = 48$