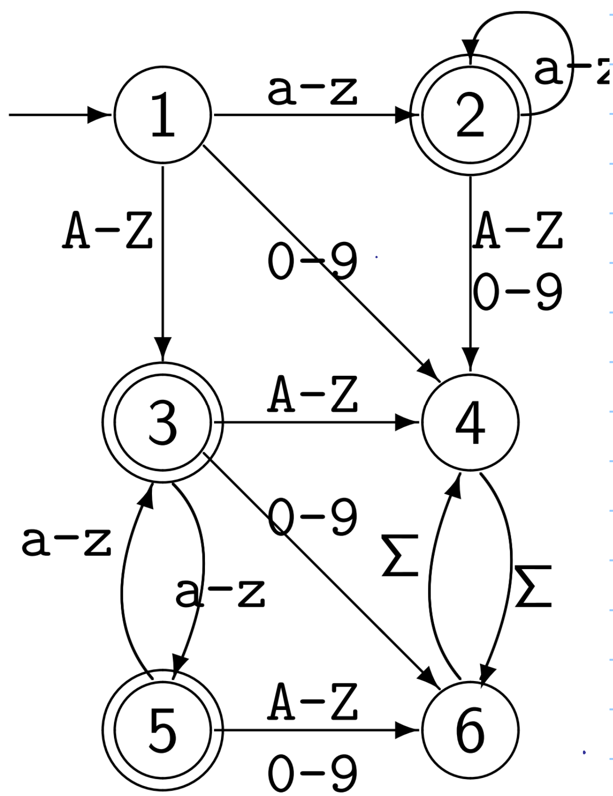
Details of minimization example from slide 31 Lex J. Berthold



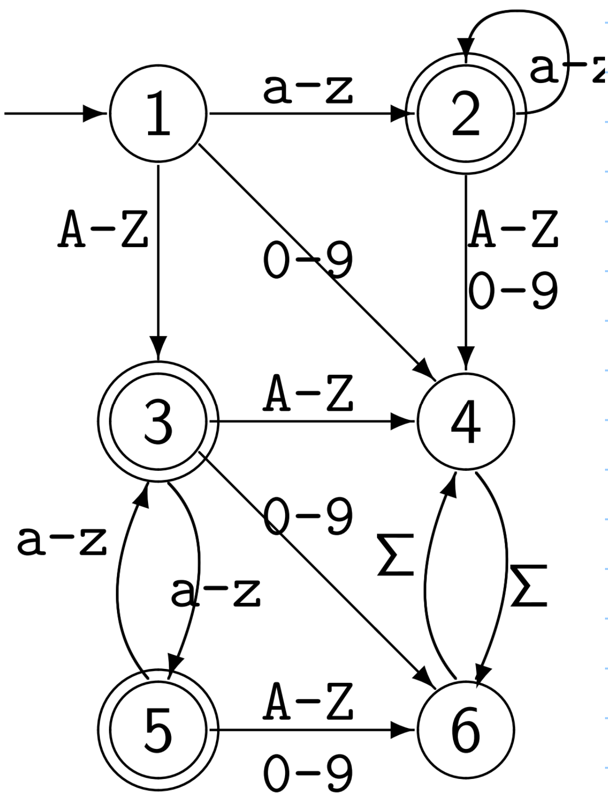
$G_1 = F = \{2, 3, 5\}$

$G_2 = S \setminus F = \{1, 4, 6\}$

Both unmarked. Pick one, say G_1.
Compute transition table:

G_1	a-z	A-Z	0-9
2	G_1	G_2	G_2
3	G_1	G_2	G_2
5	G_1	G_2	G_2

consistent: mark & do not split



Select the remaining unmarked group,

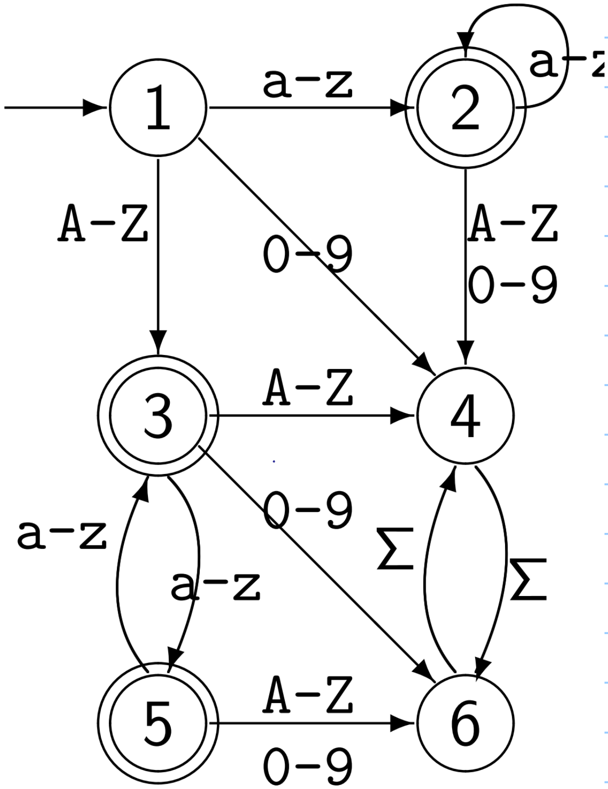
$G_2 = \{1, 4, 6\}$

G_2	a-z	A-Z	0-9
1	G_1	G_1	G_2
4	G_2	G_2	G_2
6	G_2	G_2	G_2

not consistent; split into maximal consistent subgroups and unmark all groups

$G_3 = \{1\}$ (A singleton: cannot be split)

$G_4 = \{4, 6\}$



Consider $G_4 = \{4, 6\}$. Compute its transition table

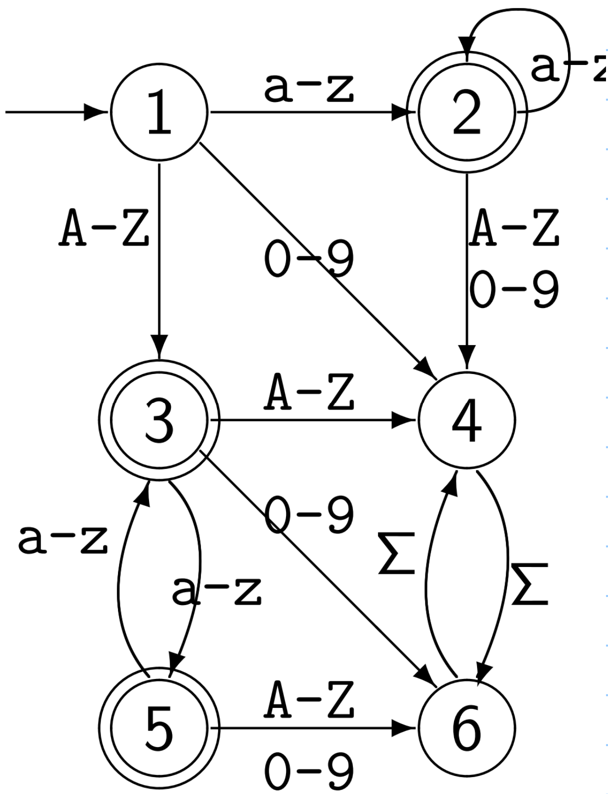
G_4	a-z	A-Z	0-9
4	G_4	G_4	G_4
6	G_4	G_4	G_4

consistent: mark it.

Check G_1 for consistency.
(Recall that groups are now: $G_1 = \{2, 3, 5\}$, $G_3 = \{1\}$, $G_4 = \{4, 6\}$, and G_1 is unmarked)

G_1	a-z	A-Z	0-9
2	G_1	G_4	G_4
3	G_1	G_4	G_4
5	G_1	G_4	G_4

consistent: mark it.



All groups are either marked or singletons
So, there is a minimal equivalent DFA
with states q_3 ({1}), q_4 ({4,6}), q_1 ({2,3,5}):