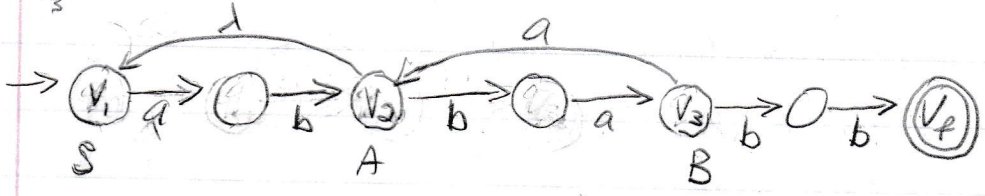
Module # 7 Homework  Sec 3.3 # 2, 3, 5, 7

* For #2, NFA is enough.

2. construct an NFA that accepts the language generated by the grammer $S \to abS \mid A$ $A \to baB$ $B \to aA \mid bb$




3. Find a regular grammer that generates the language $L(aa^*(ab+a)^*)$.

- $P = \{S \to aA,\ A \to aA \mid BB,\ B \to abB \mid aB \mid \lambda\}$
- $G = (\{S, A, B\}, \{a, b\}, S, P)$

5. construct right and left-linear grammers for the language $L = \{a^n b^m : n \geq 3, m \geq 2\}$

- $G_r = (\{S, A, B\}, \{a, b\}, S, P_r)$
  $P_r = \{S \to aaaA,\ A \to aA \mid bB,\ B \to bB \mid b\}$
- $G_L = (\{S, A, B\}, \{a, b\}, S, P_L)$
  $P_L = \{S \to Bbb,\ B \to Bb \mid Aaa,\ A \to Aa \mid a\}$

7. * shorten $\Sigma = \{a, b\}$
grammer of language of all strings w/ no more than two a's.
$G = (\{S, A, B\}, \{a, b\}, S, P)$
$P = \{S \to bS \mid aA \mid \lambda,\ A \to aB \mid bA \mid \lambda,\ B \to bB \mid b\}$