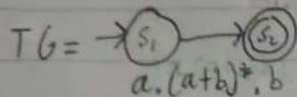
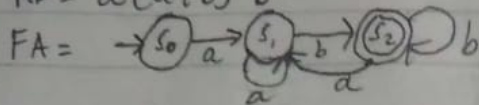


Muhammad Azhar Rasyad - Teknik Informatika 1 - TBO

1a. $P = \{ab, aab, abb, aabb, abab, \dots\}$

$$RE = a(a+b)^*b$$

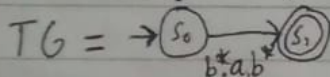
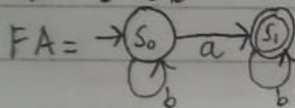


$$CFG = S \rightarrow aYb$$

$$Y \rightarrow aY \mid bY \mid \lambda$$

b. $Q = \{a, ab, ba, bba, abb, bab, bbab, \dots\}$

$$RE = b^*ab^*$$

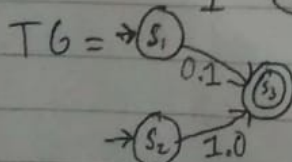
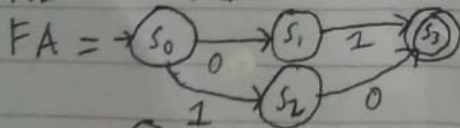


$$CFG = S \rightarrow YaY$$

$$Y \rightarrow \lambda \mid bY$$

2a. Memiliki tepat satu "0" dan satu "1", Anggota = $\{01, 10\}$

$$RE = 01 + 10$$



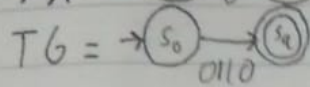
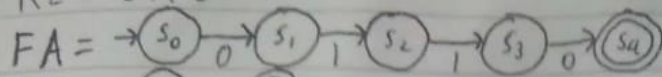
$$CFG = S \rightarrow X \mid Y$$

$$X \rightarrow 01$$

$$Y \rightarrow 10$$

b. Panjangnya 4 karakter dan hanya mempunyai tepat dua "0" pada posisi awal dan akhir, Anggota = $\{0110\}$

$$RE = 0110$$



$$CFG = S \rightarrow 0110$$

3a. $S \rightarrow aSa \mid SSa \mid a$
 CNF: $S \rightarrow ASA \mid SSA \mid a$
 $A \rightarrow a$

b. $S \rightarrow aXX$
 $X \rightarrow aS \mid bS \mid a$
 CNF: $S \rightarrow AXX$
 $X \rightarrow AS \mid BS \mid a$
 $A \rightarrow a$
 $B \rightarrow b$

4a. $RE = a^+(ba)^+$
 CFG = $S \rightarrow aXbaY$
 $X \rightarrow aX \mid \lambda$
 $Y \rightarrow baY \mid \lambda$

b. $(a+b)^*aaa(a+b)^+$
 CFG = $S \rightarrow XaaaY$
 $X \rightarrow \lambda \mid aX \mid bX$
 $Y \rightarrow a \mid b \mid aY \mid bY$

5a. Start a b a a

A b a a

A B a a

A B A a

A B A A λ

Halt A B A A λ (diterima)

b. Start b b b a

B b b a

B B b a

B B B a

B B B A λ

Halt B B B A λ (diterima)

c. Start b a a b

B a a b (ditolak)

~~B~~

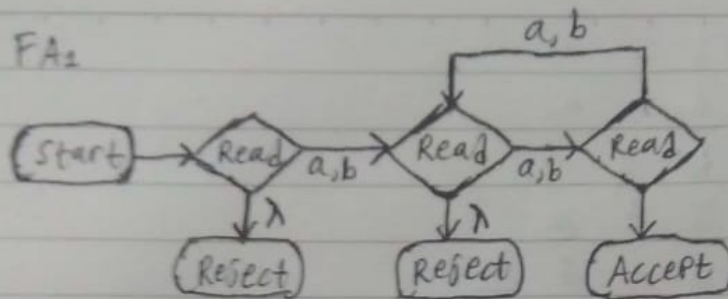
d. Start a a b a

A a b a (ditolak)

e. Start b a b b

B a b b (ditolak)

6a. PDA FA_1



6b. PDA FA_2

