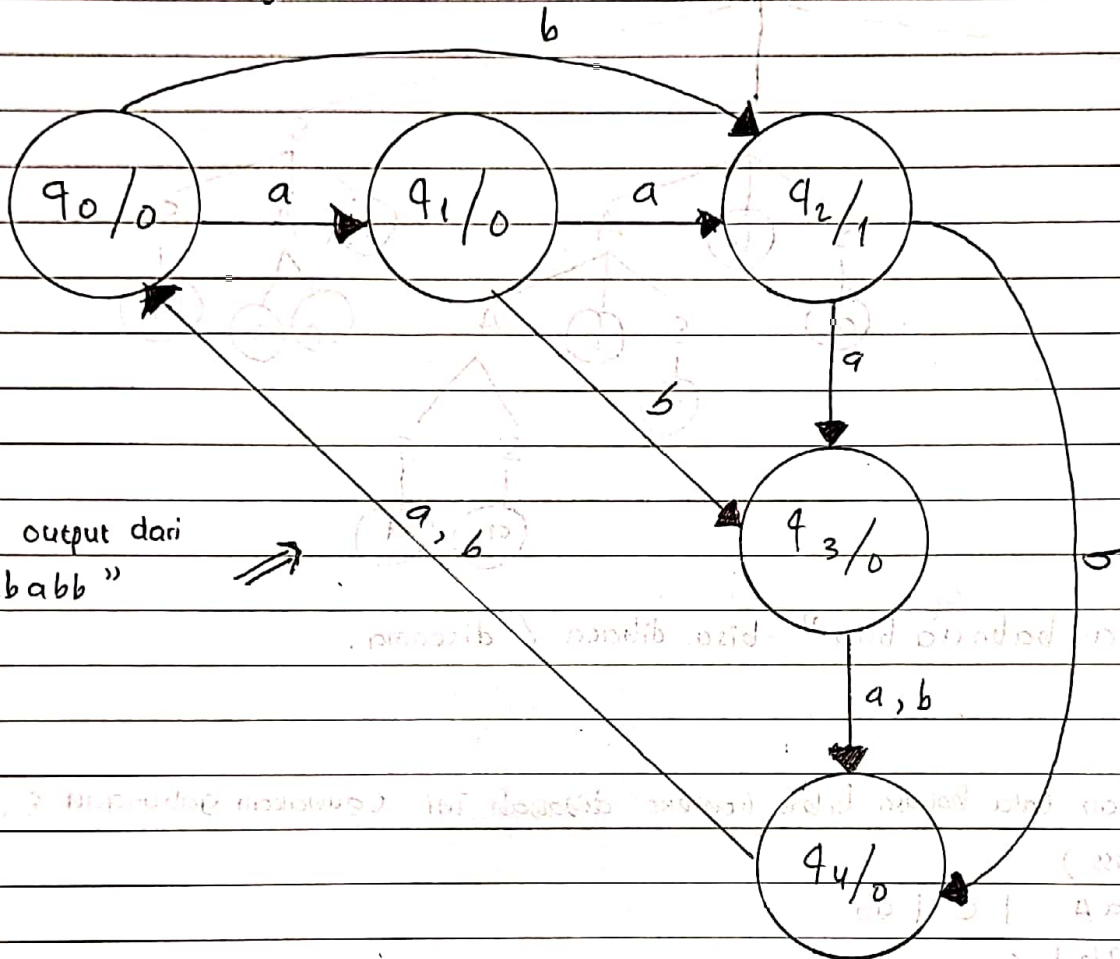


Nama : Dina Meiliana
 NIM : 203020503041
 Jurusan : Teknik Informatika
 Mata Kuliah : Teori Bahasa dan Otomata

Ujian Tengah Semester



$$\delta(q_0) = 0$$

$$a \delta(q_0, a) = q_0 \text{ (output = 0)}$$

$$b \delta(q_0, b) = q_2 \text{ (output = 1)}$$

$$a \delta(q_2, a) = q_3 \text{ (output = 0)}$$

$$b \delta(q_3, b) = q_4 \text{ (output = 0)}$$

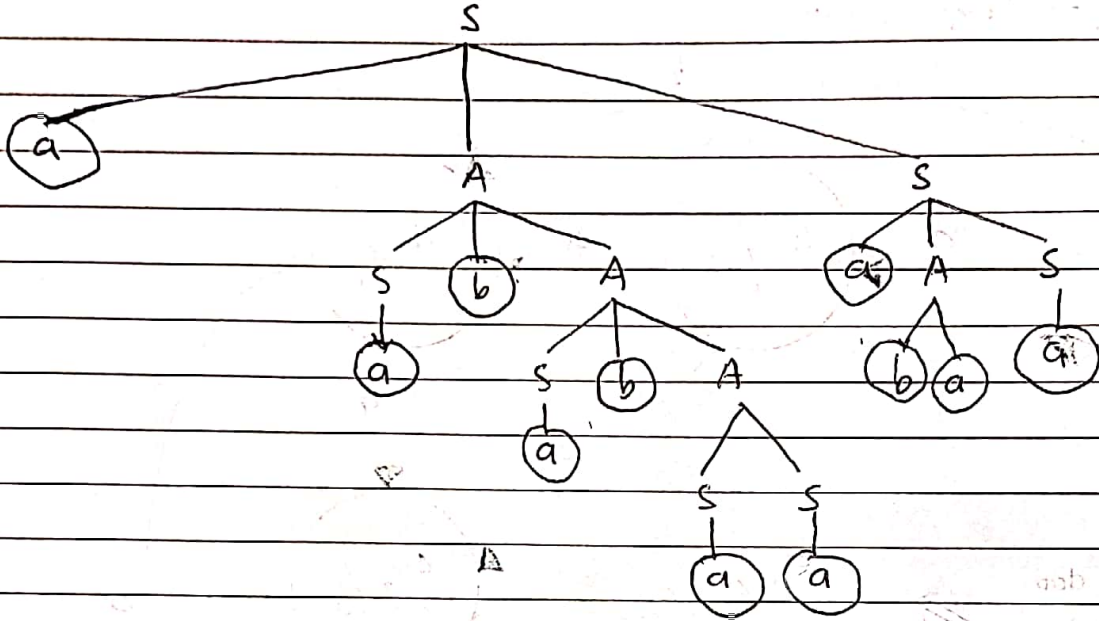
$$b \delta(q_4, b) = q_0 \text{ (output = 0)}$$

2). $S \rightarrow aAS \mid a$

$$A \rightarrow SbA | ss | ba$$

Buktikan dengan pohon penurunan bahwa string "aa babaaa baa" bisa dibaca / diterima.

Penyelesaian



String "aa babaca baa" bisa dibaca / diterima.

3). Sederhanakan tata bahasa bebas konteks dibawah ini (gunakan gabungan ϵ , unit, dan useless)

$$S \rightarrow AaA \mid c \mid ab$$
$$A \rightarrow Bb \mid \epsilon$$
$$B \rightarrow AB \mid b$$
$$C \rightarrow ba$$

Penyelesaian :

a. Penghilangan Produksi & (empty)

$S \rightarrow A^j a A \mid c \mid a b \mid a$

$$A \rightarrow Bb$$
$$B \rightarrow AB \mid b \mid B$$
$$C \rightarrow ba$$

b. Penghilangan Produksi Unit

$$S \rightarrow AaA \mid ba \mid ab \mid a$$
$$A \rightarrow Bb$$
$$B \rightarrow AB \mid b$$
$$c \rightarrow ba$$

c. Penghilangan produksi Useless

$$S \rightarrow AaA \mid ba \mid ab \mid a$$
$$A \rightarrow Bb$$
$$B \rightarrow AB \mid b$$

Hasil Penyelesaian :

$$S \rightarrow AaA \mid ba \mid ab \mid a$$
$$A \rightarrow Bb$$
$$B \rightarrow AB \mid b$$