No.

Date : 28 Januari 2021

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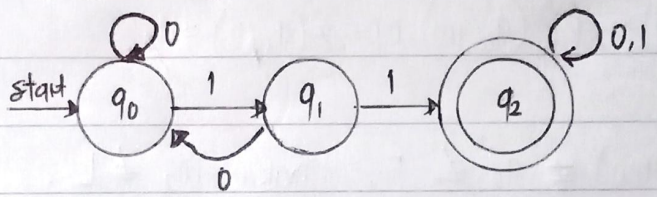
Teori Bahasa & Otomata 4REGA

Tugas 1 - Membership Problem.

$L = \{ w \mid w$ adalah string yang mengandung substring $11 \}$

- $\Sigma = \{0, 1\}$
- $Q = \{q_0, q_1, q_2\}$
- Start state $= q_0$
- $F = \{q_2\}$



* $w_1 = 1101 \in L$?

$\hat{\delta}(q_0, \varepsilon) = q_0$.

$\hat{\delta}(q_0, 1) = \delta(\hat{\delta}(q_0, \varepsilon), 1) = \delta(q_0, 1) = q_1$

$\hat{\delta}(q_0, 11) = \delta(\hat{\delta}(q_0, 1), 1) = \delta(q_1, 1) = q_2$

$\hat{\delta}(q_0, 110) = \delta(\hat{\delta}(q_0, 11), 0) = \delta(q_2, 0) = q_2$

$\hat{\delta}(q_0, 1101) = \delta(\hat{\delta}(q_0, 110), 1) = \delta(q_2, 1) = q_2$

Karena $\hat{\delta}(q_0, 1101) = q_2 \in F$, maka $w_1 \in L$

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* $w_2 = 1010 \in L$?

$\hat{\delta}(q_0, \varepsilon) = q_0$.

$\hat{\delta}(q_0, 1) = \delta(\hat{\delta}(q_0, \varepsilon), 1) = \delta(q_0, 1) = q_1$.

$\hat{\delta}(q_0, 10) = \delta(\hat{\delta}(q_0, 1), 0) = \delta(q_1, 0) = q_0$.

$\hat{\delta}(q_0, 101) = \delta(\hat{\delta}(q_0, 10), 1) = \delta(q_0, 1) = q_1$.

$\hat{\delta}(q_0, 1010) = \delta(\hat{\delta}(q_0, 101), 0) = \delta(q_1, 0) = q_0$.

Karena $\hat{\delta}(q_0, 1010) = q_0 \notin F$, maka $w_2 \notin L$.

* $w_3 = 001011 \in L$?

$\hat{\delta}(q_0, \varepsilon) = q_0$.

$\hat{\delta}(q_0, 0) = \delta(\hat{\delta}(q_0, \varepsilon), 0) = \delta(q_0, 0) = q_0$.

$\hat{\delta}(q_0, 00) = \delta(\hat{\delta}(q_0, 0), 0) = \delta(q_0, 0) = q_0$.

$\hat{\delta}(q_0, 001) = \delta(\hat{\delta}(q_0, 00), 1) = \delta(q_0, 1) = q_1$.

$\hat{\delta}(q_0, 0010) = \delta(\hat{\delta}(q_0, 001), 0) = \delta(q_1, 0) = q_0$.

$\hat{\delta}(q_0, 00101) = \delta(\hat{\delta}(q_0, 0010), 1) = \delta(q_0, 1) = q_1$.

$\hat{\delta}(q_0, 001011) = \delta(\hat{\delta}(q_0, 00101), 1) = \delta(q_1, 1) = q_2$.

Karena $\hat{\delta}(q_0, 001011) = q_2 \in F$, maka $w_3 \in L$.