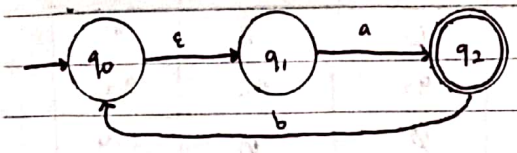
Test

Date

1. Buatlah NFA tanpa ε-move yang ekuivalen dengan NFA ε-move pada gambar di bawah ini dengan simbol input $\Sigma = \{\varepsilon, a, b\}$



tabel transisi NFA ε-move

δ	a	b	ε
q_0	∅	∅	q_1
q_1	q_2	∅	∅
q_2	∅	q_0	∅

ε-closure (q_0): $\{q_0, q_1\}$

ε-closure (q_1) : $\{q_1\}$

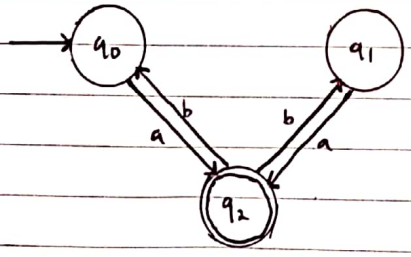
ε-closure (q_2) : $\{q_2\}$

Tabel transisi yang baru

δ	a	b
q_0	ε-cl(δ(ε-cl(q_0),a))	ε-cl(δ(ε-cl(q_0),b))
	ε-cl(δ({q_0,q_1},a))	ε-cl(δ({q_0,q_1},b))
	ε-cl(q_2)	ε-cl(∅)
	{q_2}	∅
q_1	ε-cl(δ(ε-cl(q_1),a))	ε-cl(δ(ε-cl(q_1),b))
	ε-cl(δ({q_1},a))	ε-cl(δ({q_1},b))
	ε-cl(q_2)	ε-cl(∅)
	{q_2}	∅
q_2	ε-cl(δ(ε-cl(q_2),a))	ε-cl(δ(ε-cl(q_2),b))
	ε-cl(δ({q_2},a))	ε-cl(δ({q_2},b))
	ε-cl(∅)	ε-cl(q_0)
	∅	{q_0,q_1}

Tabel transisi NFA yang baru

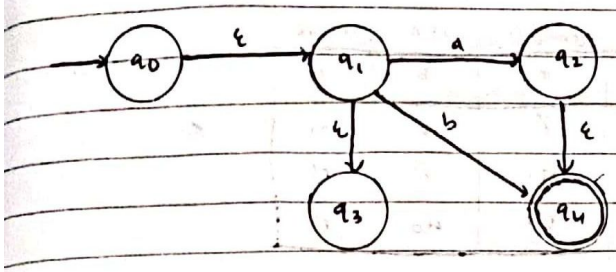
δ	a	b
q_0	q_2	∅
q_1	q_2	∅
q_2	∅	{q_0,q_1}



OKTEY

Date

2. Buatlah NFA tanpa ε-move nya



tabel transisi

δ	a	b	ε
q_0	∅	∅	q_1
q_1	q_2	q_4	q_3
q_2	∅	∅	q_4
q_3	∅	∅	∅
q_4	∅	∅	∅

ε-closure (q_0) = $\{q_0, q_1, q_3\}$

(q_1) = $\{q_1, q_3\}$

(q_2) = $\{q_2, q_4\}$

(q_3) = $\{q_3\}$

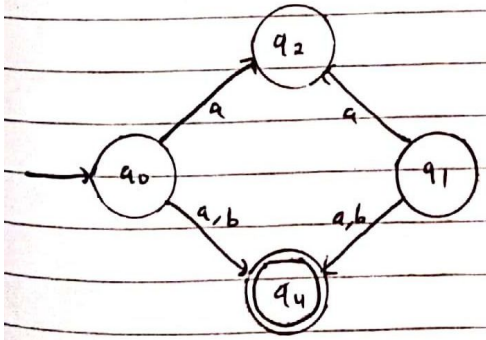
(q_4) = $\{q_4\}$

tabel transisi yang baru

δ	a	b
q_0	ε-cl(δ(ε-cl(q_0), a))	ε-cl(δ(ε-cl(q_0), b))
	ε-cl(δ({q_0, q_1, q_3}, a))	ε-cl(δ({q_0, q_1, q_3}, b))
	ε-cl(q_2)	ε-cl(q_4)
	{q_2, q_4}	{q_4}
q_1	ε-cl(δ(ε-cl(q_1), a))	ε-cl(δ({q_1, q_3}, b))
	ε-cl(δ({q_1, q_3}, a))	ε-cl(q_4)
	ε-cl(q_2)	{q_4}
	{q_2, q_4}	
q_2	ε-cl(δ({q_2, q_4}, a))	ε-cl(δ({q_2, q_4}, b))
	∅	∅
q_3	ε-cl(δ({q_3}, a))	ε-cl(δ({q_3}, b))
	∅	∅
q_4	ε-cl(δ({q_4}, a))	ε-cl(δ({q_4}, b))
	∅	∅

tabel transisi yang baru

δ	a	b
q_0	{q_2, q_4}	q_4
q_1	{q_2, q_4}	q_4
q_2	∅	∅
q_3	∅	∅
q_4	∅	∅



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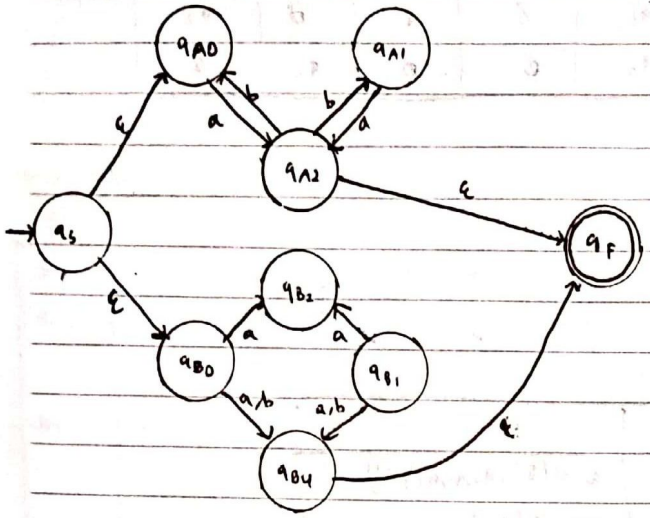
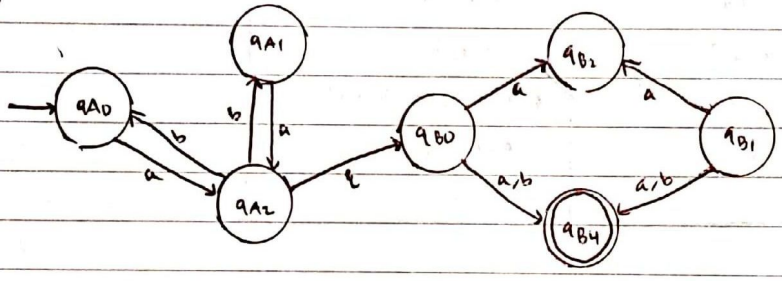
3. $L(M_3) = L(M_1) + L(M_2)$

$L(M_4) = L(M_1)\ L(M_2)$

a)



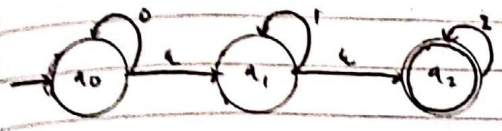
b)



OKEY

Date

1. Buatlah NFA tanpa ε-movenya



tabel transisi

δ	0	1	2	ε
q_0	q_0	∅	∅	q_1
q_1	∅	q_1	∅	q_2
q_2	∅	∅	q_2	∅

ε-closure

ε closure $(q_0) = \{q_0, q_1, q_2\}$

$(q_1) = \{q_1, q_2\}$

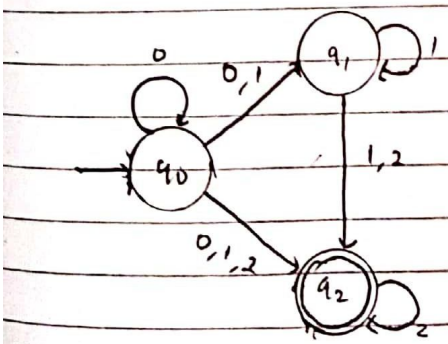
$(q_2) = \{q_2\}$

tabel transisi yang baru

δ	0	1	2*
q_0	ε-cl(δ({q0,q1,q2},0))	ε-cl(δ({q0,q1,q2},1))	ε-cl(δ({q0,q1,q2},2))
	ε-cl(q_0)	ε-cl (q_1)	ε-cl (q_2)
	$\{q_0, q_1, q_2\}$	$\{q_1, q_2\}$	$\{q_2\}$
q_1	ε-cl(δ({q1,q2},0))	ε-cl(δ({q0,q2}1))	ε-cl(δ({q1,q2},2))
	ε-cl(∅)	ε-cl(q_1)	ε-cl(q_2)
	∅	$\{q_1, q_2\}$	$\{q_2\}$
q_2	ε-cl(δ({q2}0)	ε-cl(δ({q2},1))	ε-cl(δ({q2},2))
	ε-cl(∅)	∅	ε-cl(q_2)
	∅		$\{q_2\}$

tabel transisi yang baru

δ	0	1	2
q_0	$\{q_0, q_1, q_2\}$	$\{q_1, q_2\}$	$\{q_2\}$
q_1	∅	$\{q_1, q_2\}$	$\{q_2\}$
q_2	∅	∅	$\{q_2\}$



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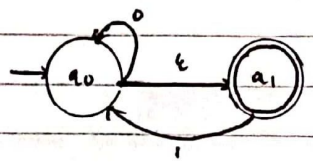
Date

2. Buatlah NFA tanpa ε-move



tabel transisi

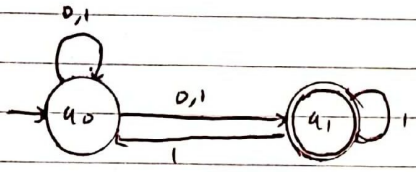
δ	0	1	ε
q0	q0	∅	q1
q1	∅	q0	∅

ε-closure (q0) = {q0, q1}

(q1) = {q1}

tabel transisi yang baru

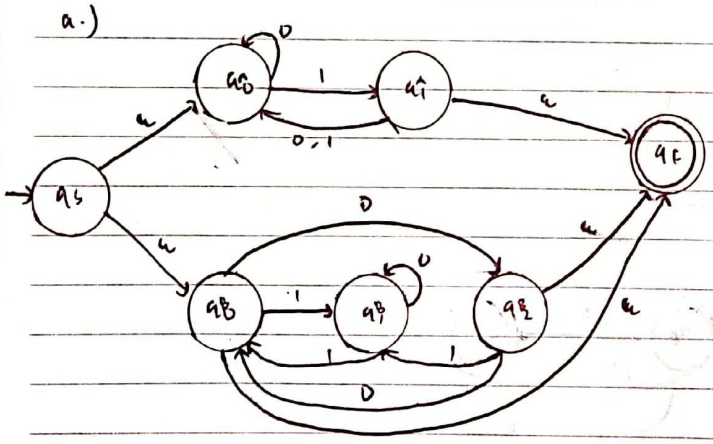
δ	0	1
q0	ε-cl(δ({q0,q1},0))	ε-cl(δ({q0,q1},1))
*	ε-cl(q0)	ε-cl(q0)
	{q0,q1}	{q0,q1}
q1	ε-cl(δ({q1},0))	ε-cl(δ({q1},1))
	∅	ε-cl(q0)
		{q0,q1}



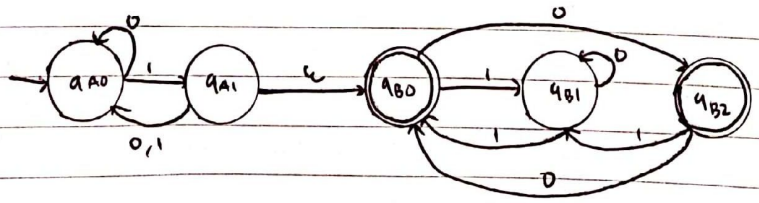
3. $L(m_3) = L(m_1) + L(m_2)$

$L(m_4) = L(m_1)\,L(m_2)$

a.)



b)



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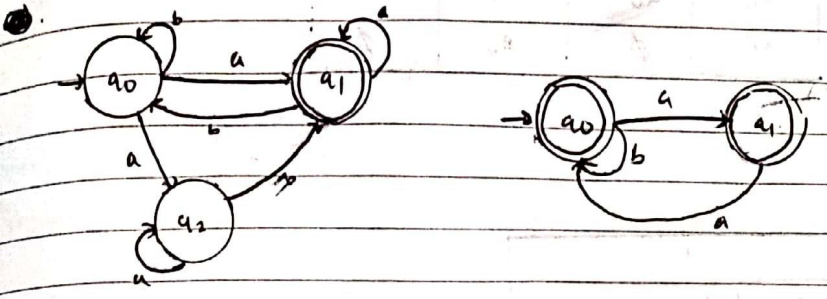
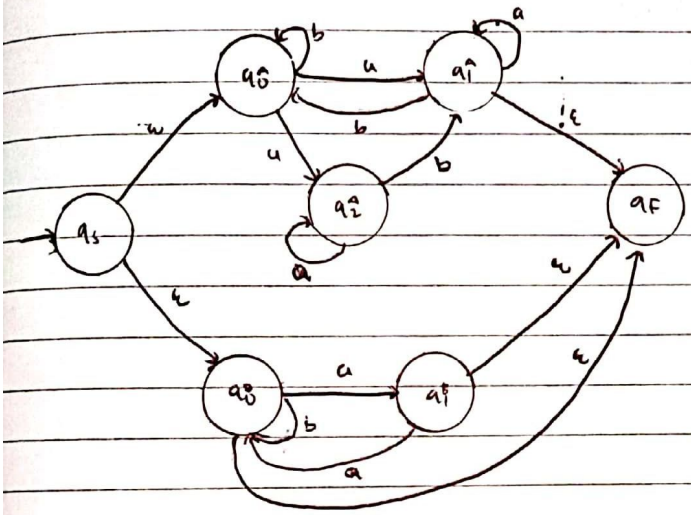
4. $L(m_3) = L(m_1) + L(m_2)$

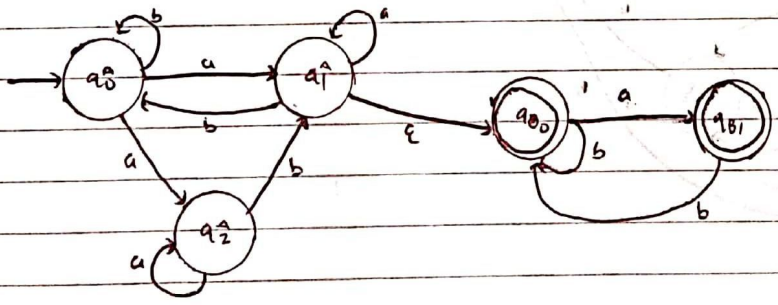
$L(m_4) = L(m_1)\,L(m_4)$



a. $L(m_3)$



b. $L(m_4)$



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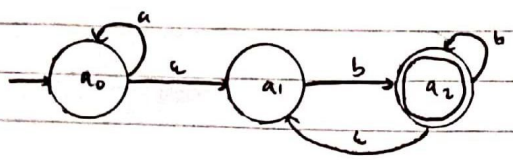
5. Buatlah NFA tanpa ε-move



tabel transisi

δ	a	b	ε
q_0	q_0	∅	q_1
q_1	∅	q_2	∅
q_2	∅	q_2	q_1

ε-closure (q_0) = $\{q_0, q_1\}$

(q_1) = $\{q_1\}$

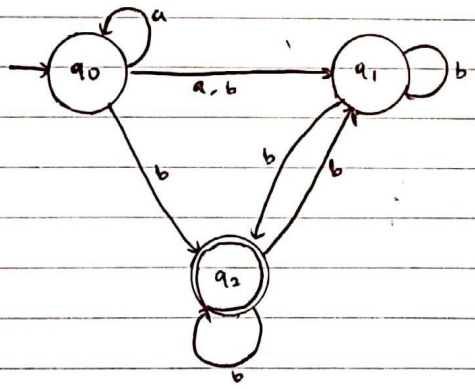
(q_2) = $\{q_1, q_2\}$

tabel transisi yg baru

δ	a	b
q_0	ε-cl$(\delta(\{q_0,q_1\}, a))$	ε-cl$(\delta(\{q_0,q_1\}, b))$
	ε-cl(q_0)	ε-cl(q_2)
	$\{q_0, q_1\}$	$\{q_1, q_2\}$
q_1	ε-cl$(\delta(\{q_1\}, a))$	ε-cl$(\delta(\{q_1\}, b))$
	∅	ε-cl(q_2)
		$\{q_1, q_2\}$
q_2	ε-cl$(\delta(\{q_1,q_2\}, a))$	ε-cl$(\delta(\{q_1,q_2\}, b))$
	∅	ε-cl(q_2)
		$\{q_1, q_2\}$

tabel transisi baru

δ	a	b
q_0	$\{q_0, q_1\}$	$\{q_1, q_2\}$
q_1	∅	$\{q_1, q_2\}$
q_2	∅	$\{q_1, q_2\}$



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