

Leksiline analüüs

Regulaaravaldise teisendamine automaadiks

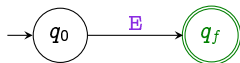
Determineeritud lõpliku automaadi koostamine

Regulaaravaldiste teisendamine automaadiks

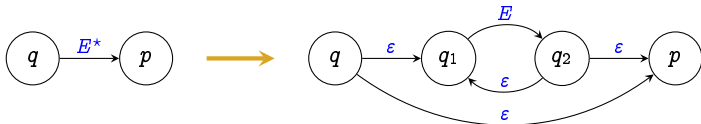
Regulaaravaldise teisendamine automaadiks

Thompsoni konstruktsioon regulaaravaldise teisendamiseks (mitedetermineeritud) lõplikuks automaadiks:

- regulaaravaldisele E seame vastavusse "automaadi":

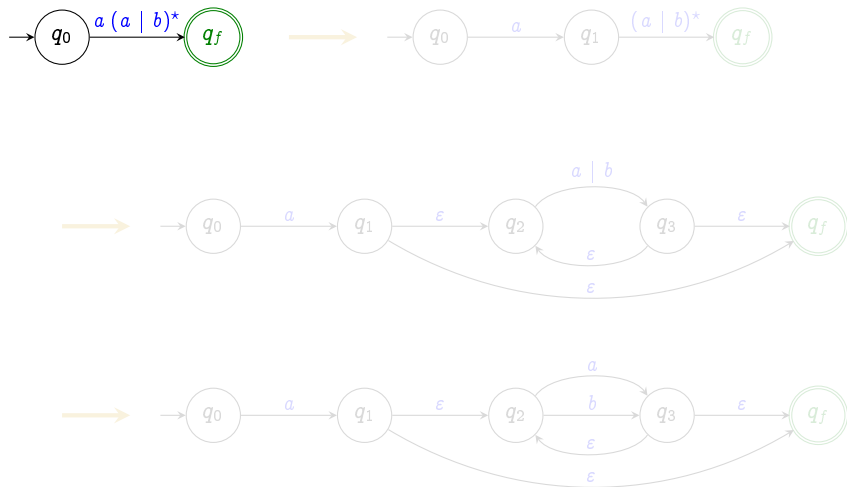


- teisendame "automaati" järgmiste reeglite abil, kuni kõik üleminekud on kas ϵ või üksikud tähed:



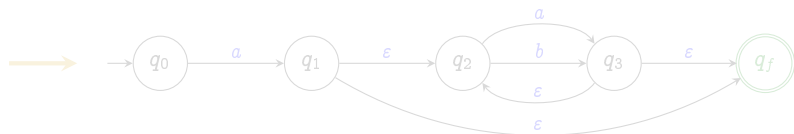
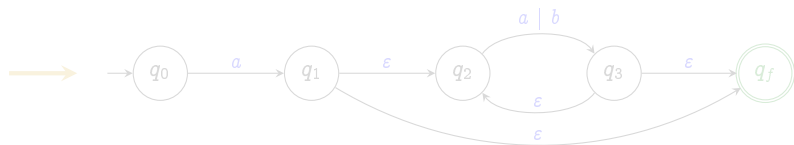
Regulaaravaldise teisendamine automaadiks

Näide:



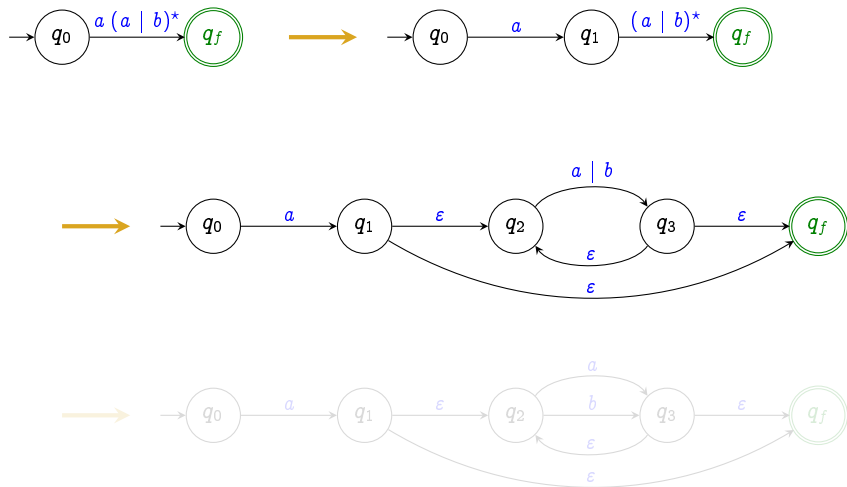
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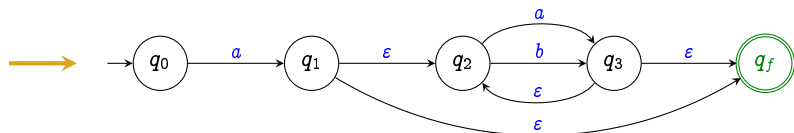
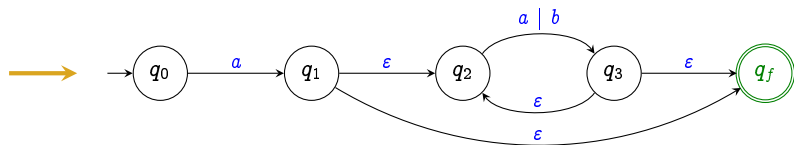
Regulaaravaldise teisendamine automaadiks

Näide:



Regulaaravaldise teisendamine automaadiks

Näide:



Determineeritud lõpliku automaadi koostamine

Determineeritud lõpliku automaadi koostamine

- Mittedetermineeritud lõpliku automaadiga
 $A = \langle Q, \Sigma, \delta, q_0, F \rangle$ ekvivalentse determineeritud lõpliku automaadi $A' = \langle Q', \Sigma, \delta', q'_0, F' \rangle$ konstrueerimine osahulkade moodustamise abil.

- Abifunktsioonid:

- tühikäigusulundi funktsioon ε -closure : $2^Q \rightarrow 2^Q$

$$\varepsilon\text{-closure}(S) = \{p \mid q \in S, (q, \varepsilon, p) \in \delta^*\}$$

- ühe sammu funktsioon $move : 2^Q \times \Sigma \rightarrow 2^Q$

$$move(S, a) = \varepsilon\text{-closure}(\{p \mid q \in S, (q, a, p) \in \delta\})$$

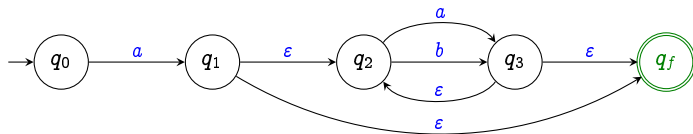
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Algoritm:

```
 $Q' := \emptyset; F' := \emptyset; \delta' := \emptyset;$   
 $q'_0 := \varepsilon\text{-closure}(\{q_0\}); U := \{q'_0\};$   
while  $\exists S \in U$  do  
   $U := U \setminus \{S\}; Q' := Q' \cup \{S\};$   
  foreach  $a \in \Sigma$  do  
     $T := \text{move}(S, a);$   
    if  $T \notin U \cup Q'$  then  $U := U \cup \{T\};$   
     $\delta' := \delta' \cup \{(S, a) \mapsto T\};$   
  end  
end  
 $F' := \{S \in Q' \mid S \cap F \neq \emptyset\};$ 
```

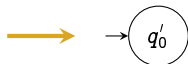
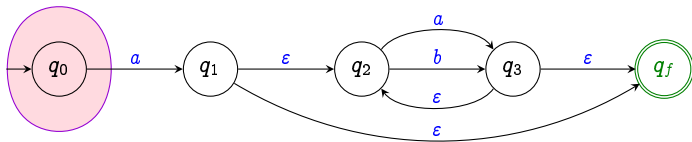
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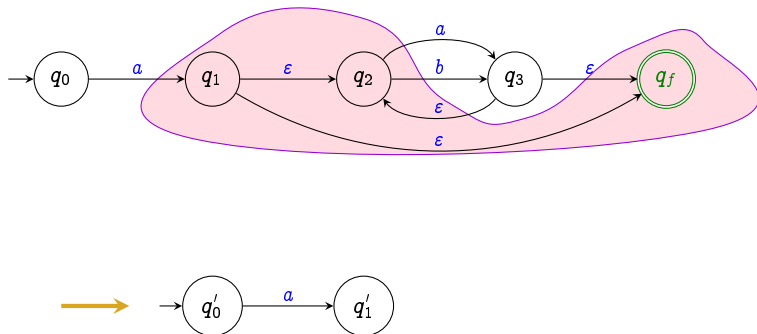
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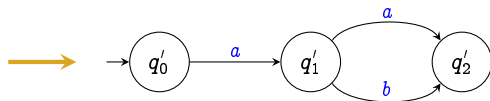
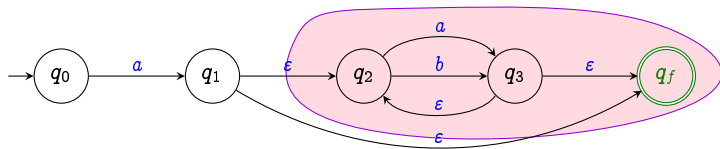
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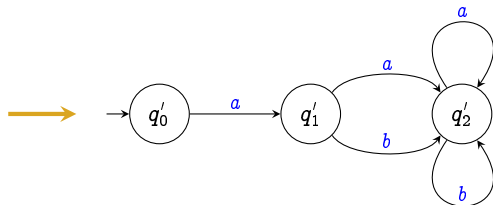
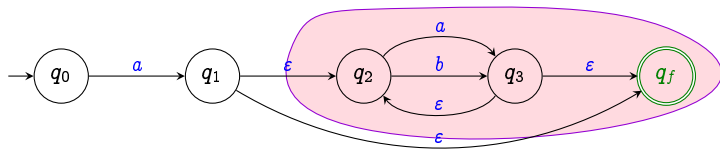
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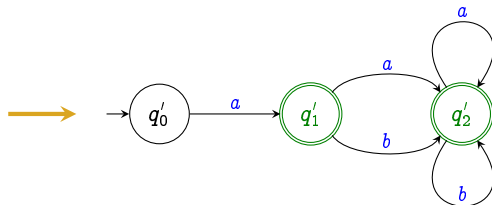
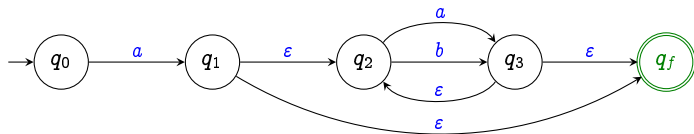
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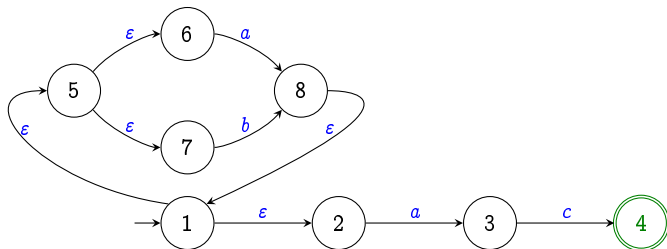
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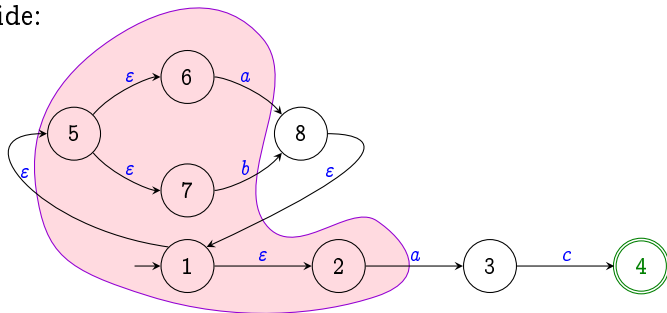
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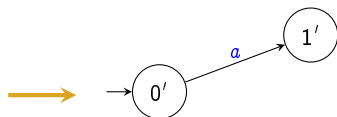
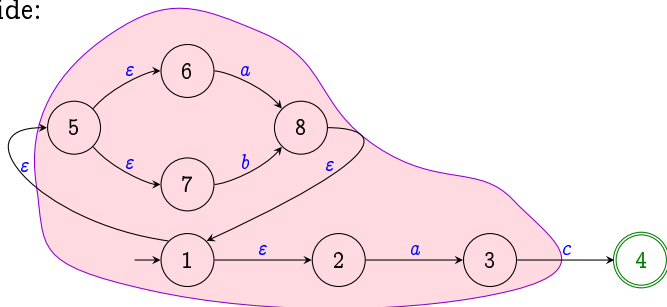
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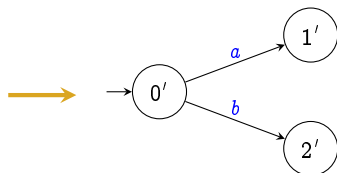
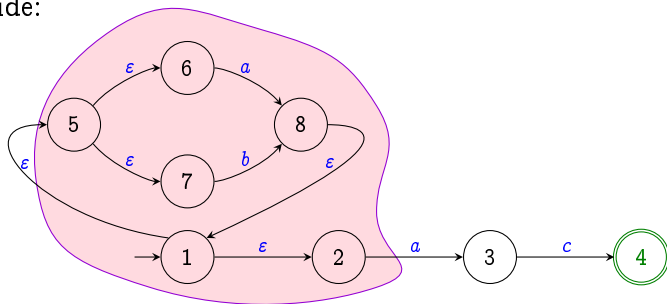
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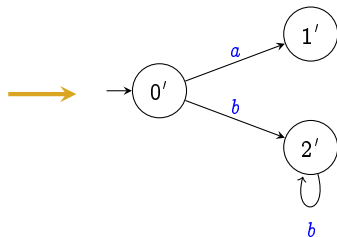
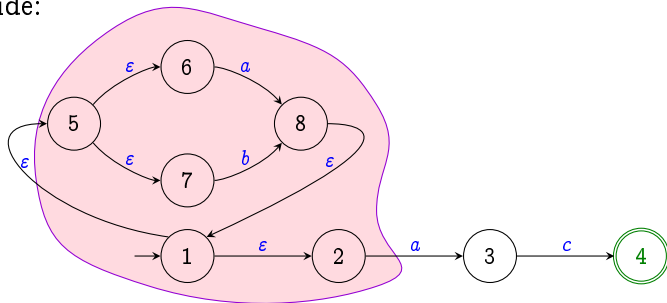
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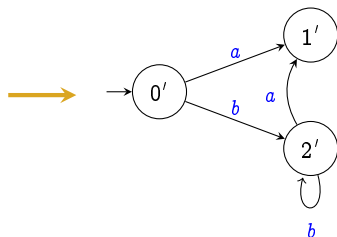
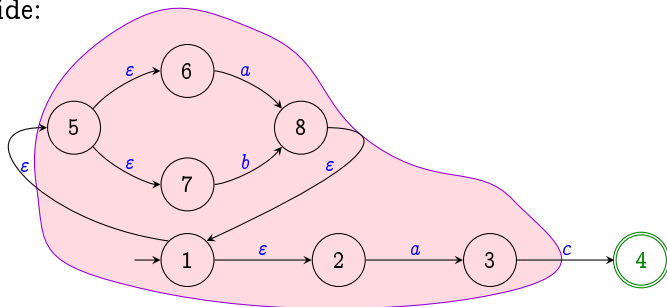
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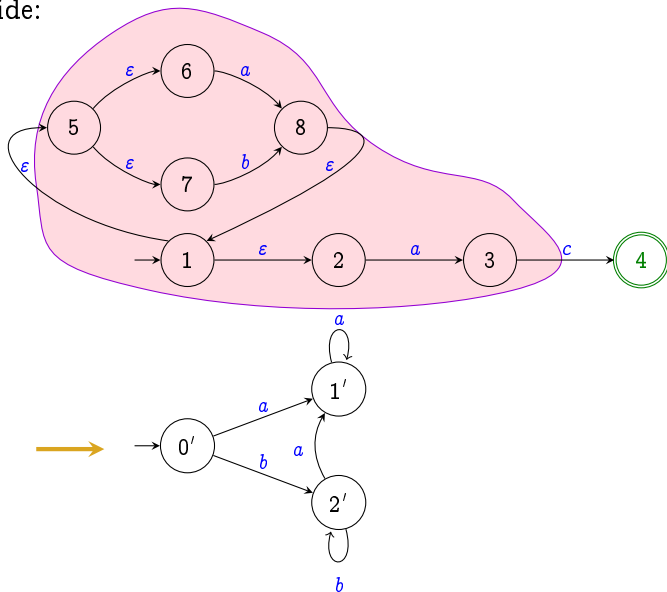
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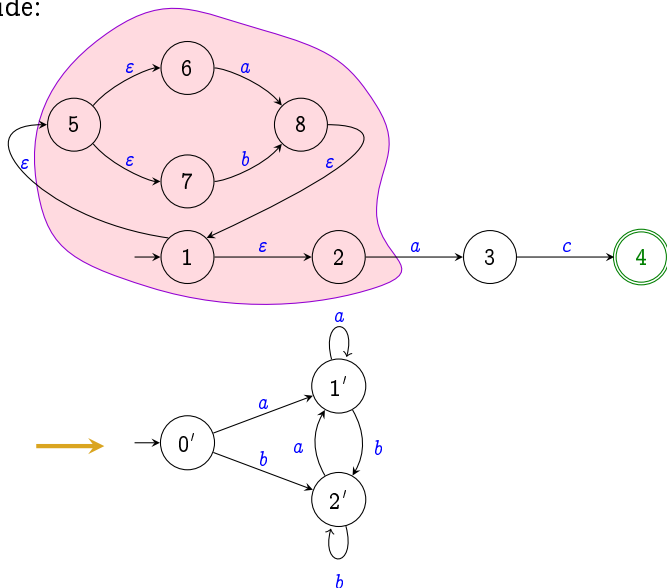
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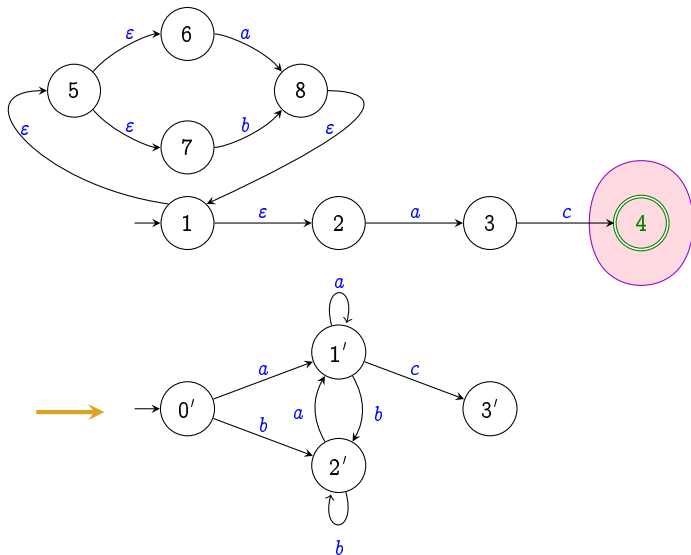
Determineeritud lõpliku automaadi koostamine

Näide:



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