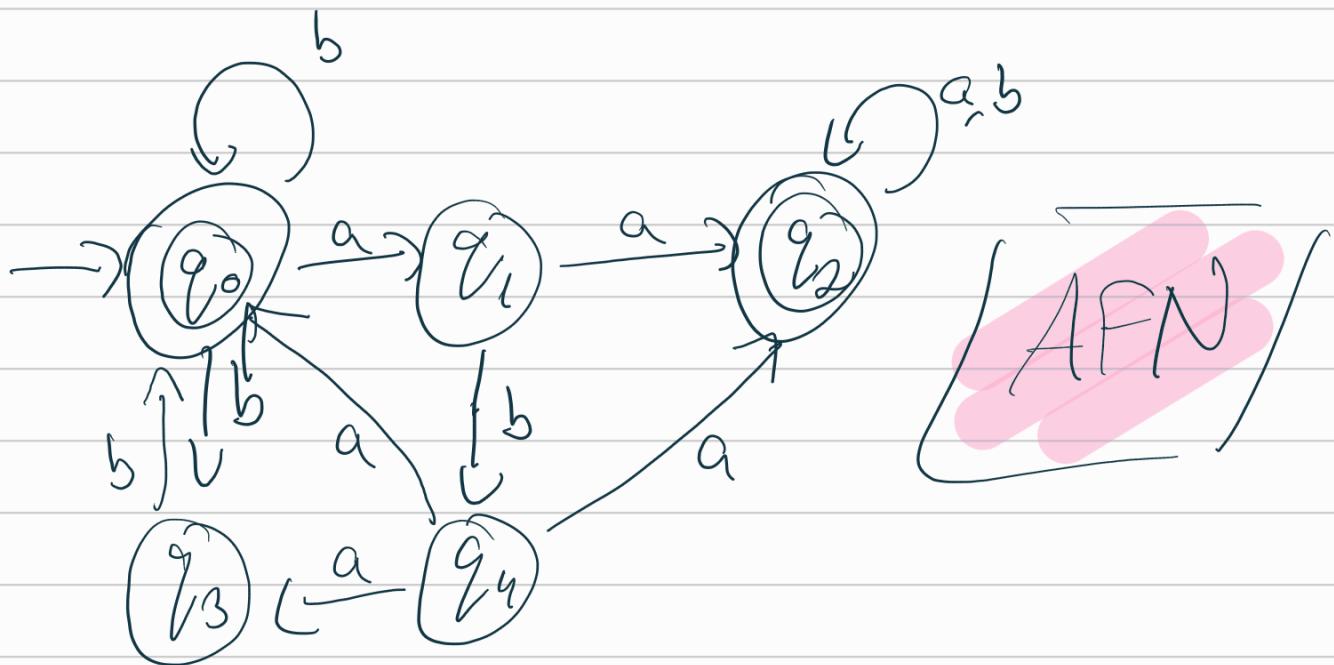
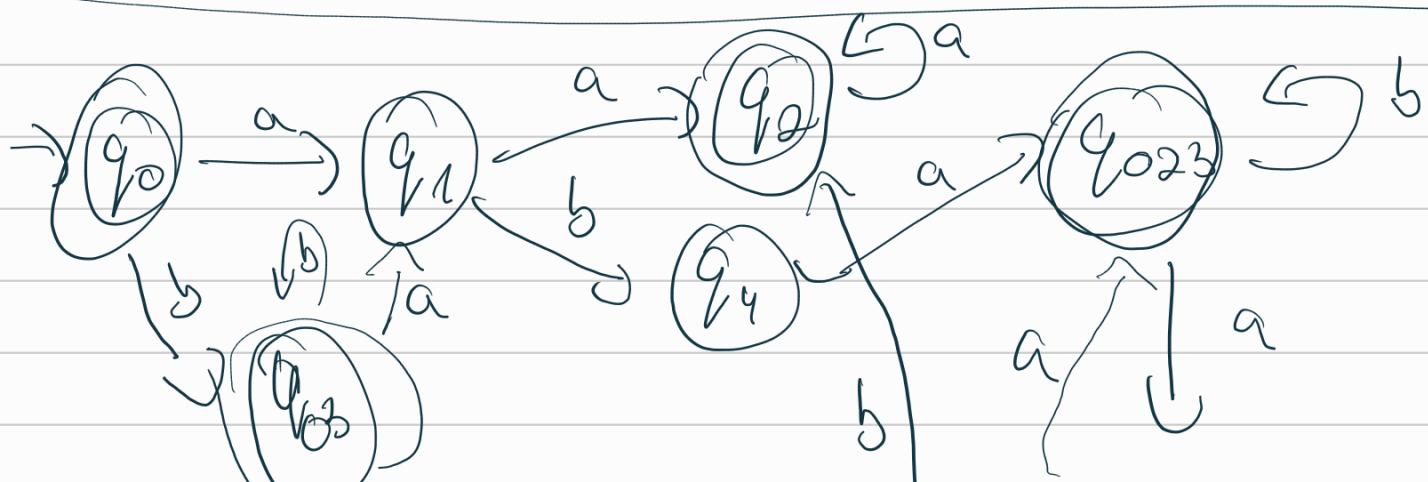


# Seminar 2

12.03.2025

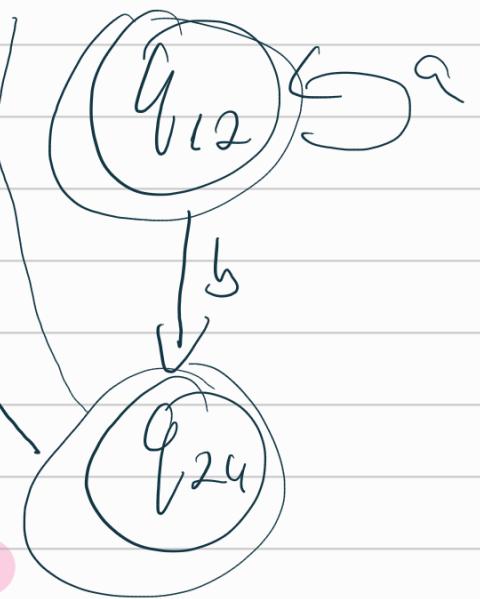


$\Sigma_{AFN}$	a	b
init. * $q_0EF$	$\{q_1\}$	$\{q_0, q_3\}$
$q_1$	$\{q_2\}$	$\{q_4\}$
$q_2EF$	$\{q_2\}$	$\{q_2\}$
$q_3$	$\emptyset$	$\{q_0\}$
$q_4$	$\{q_0, q_2, q_3\}$	$\emptyset$



SAFD

	a	b	
init.	$q_0CF$	$q_1$	$q_{03}$
$q_1$	$q_2$	$q_u$	
$q_{03}CF$	$q_1$	$q_{03}$	AFD
$q_2CF$	$q_2$	$q_2$	
$q_u$	$q_{023}$	$\emptyset$	
$F \ni q_{023}$	$q_{12}$	$q_{023}$	
$F \ni q_{12}$	$q_{12}$	$q_{24}$	
$F \ni q_{24}$	$q_{023}$	$q_2$	



AFD:  $(q_0, ababbab) \vdash (q_1, babbab) \vdash (q_u, aabbab) \vdash$

$\vdash (q_{023}, babb) \vdash (q_{023}, bab) \vdash (q_{023}, ab) \vdash$

$(q_{12}, \underline{b}) \vdash (q_{24}, \underline{a}) \Rightarrow ababbab$  cuv. acceptat

A

F

AFN:  $(q_0, ababbab) \vdash (q_1, babbab) \vdash (q_4, abbab) \vdash$

$\{(q_0, bab), (q_3, bab), (q_2, bab)\} \vdash$

$\{(q_0, bab), (q_3, bab), (q_2, bab)\} \vdash$

$\{(q_0, ab), (q_3, ab), (q_2, ab)\} \vdash$

$\{(q_1, \lambda), (q_2, \lambda)\} \vdash \{((q_4, \lambda), (q_2, \lambda))\}_{CF}$

$\Rightarrow \{q_4, q_2\} \cap F \neq \emptyset \Rightarrow ababbab \text{ acceptat}$

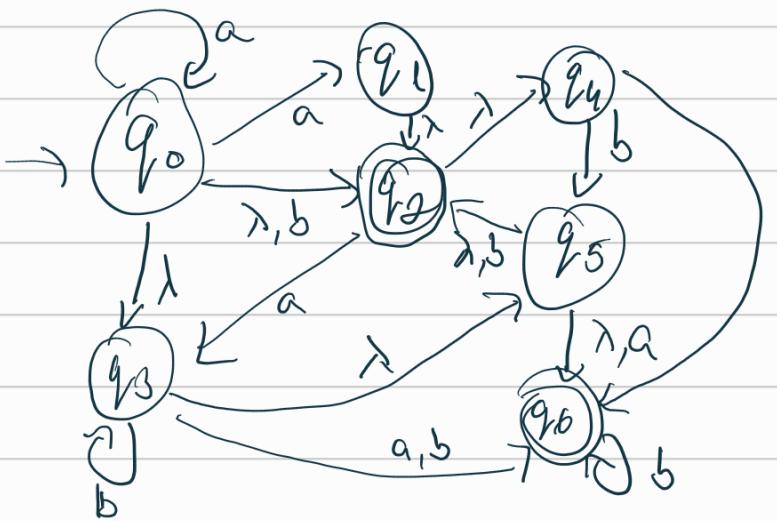
AFN- $\lambda = (\mathbb{Q}, \Sigma, \delta, q_0, F)$

$\delta: \mathbb{Q} \times (\Sigma \cup \{\lambda\}) \rightarrow 2^{\mathbb{Q}}$

$\lambda$  - Inciderea unei stări

$\rightarrow$  este multimea de stări în care se poate ajunge plecând din starea  $q \in Q$  și aplicând  $\lambda$  sau mai multe  $\lambda$ -tranzitii

$$\langle q \rangle = \{ \sim | \sim \in \hat{\delta}(q, \lambda^*) \}$$



AFN -  $\lambda$

$$\langle q_0 \rangle = \{ q_0, q_2, q_3, q_4, q_5, q_6 \}$$

$$\langle q_1 \rangle = \{ q_1, q_2, q_4, q_6 \}$$

$$\langle q_2 \rangle = \{ q_2, q_4, q_6 \}$$

$$\langle q_3 \rangle = \{ q_3, q_2, q_6, q_4, q_5 \}$$

$$\langle q_4 \rangle = \{ q_4, q_6 \}$$

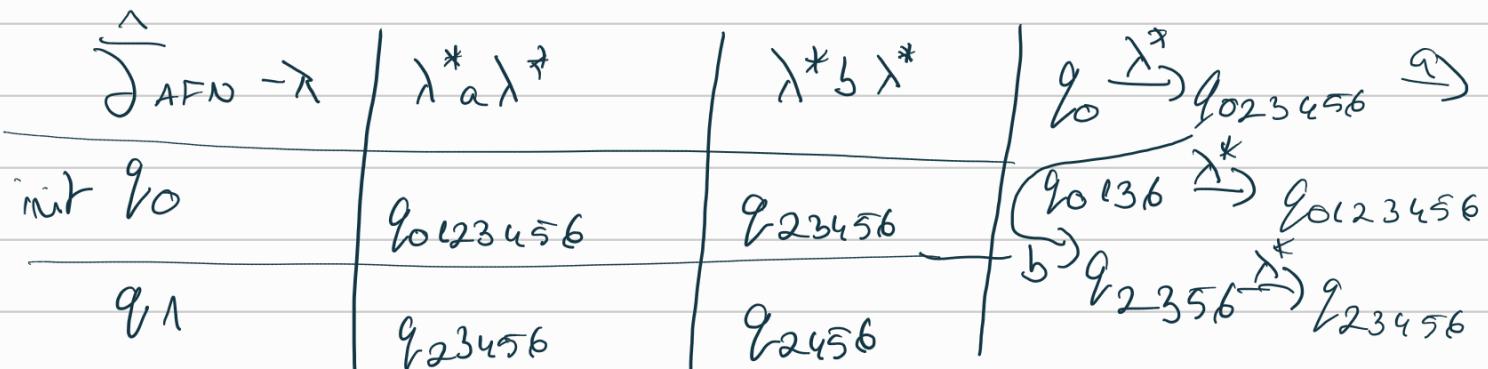
$$\langle q_5 \rangle = \{ q_5, q_6, q_2, q_4 \}$$

$$\langle q_6 \rangle = \{ \emptyset \}$$

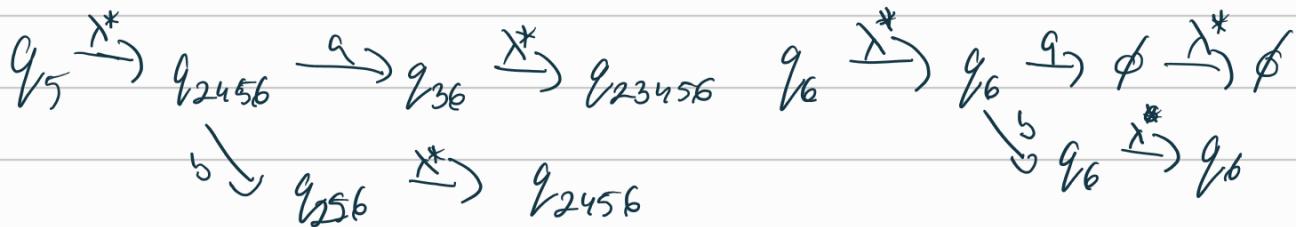
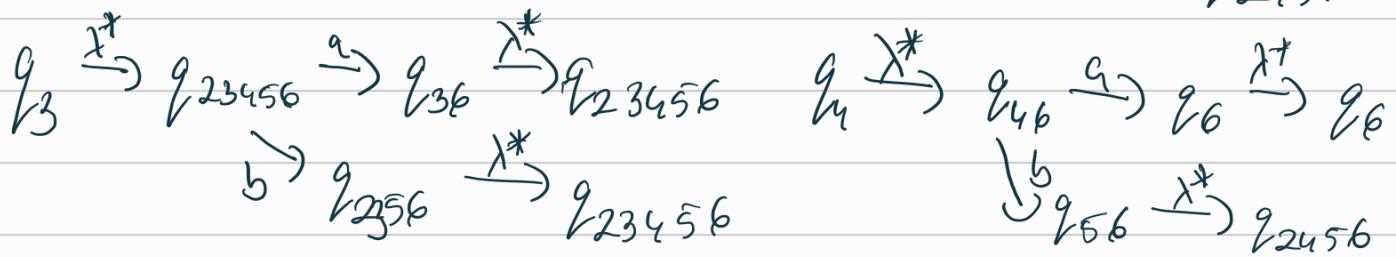
$$\begin{aligned}
 \text{AFD} \rightarrow: & (q_0, abb\alpha a) \xrightarrow{\lambda^*} (q_{023456}, abbaa) \xrightarrow{a} \\
 & \vdash (q_{0136}, bbaa) \xrightarrow{\lambda^*} (q_{0123456}, bbaa) \xrightarrow{b} \\
 & \vdash (q_{2356}, baa) \xrightarrow{\lambda^*} (q_{23456}, baa) \xrightarrow{b} \\
 & \vdash (q_{356}, aa) \xrightarrow{\lambda^*} (q_{23456}, aa) \xrightarrow{a} \\
 & \vdash (q_{36}, a) \xrightarrow{\lambda^*} (q_{23456}, a) \xrightarrow{a} (q_{36}, \lambda) \xrightarrow{\lambda^*} (q_{23456}, \lambda)
 \end{aligned}$$

$q_{23456} \cap F \neq \emptyset \Rightarrow abbaa$  avant acceptat

Transformarea  
AFN -  $\lambda \rightarrow$  AFD



$q_2 \text{ eF}$	$q_{23456}$	$q_{2456}$	$q_1 \xrightarrow{\lambda^*} q_{1246} \xrightarrow{a} q_{36} \xrightarrow{\lambda^*} q_{23456}$
$q_3$	$q_{23456}$	$q_{23456}$	$q_{56} \xrightarrow{\lambda^*} q_{2456} \xrightarrow{a} q_{23456}$
$q_4$	$q_6$	$q_{2456}$	$q_2 \xrightarrow{\lambda^*} q_{246} \xrightarrow{a} q_{36} \xrightarrow{\lambda^*} q_{23456}$
$q_5$	$q_{23456}$	$q_{2456}$	$q_{56} \xrightarrow{\lambda^*} q_{2456} \xrightarrow{a} q_{23456}$
$q_6 \text{ eF}$	$\emptyset$	$q_6$	$q_3 \xrightarrow{\lambda^*} q_{23456} \xrightarrow{a} q_{36} \xrightarrow{\lambda^*} q_{23456}$



$S_{AFD}$	$a$	$b$	$L = \{a, b\}^*$
$q_{023456 \text{ eF}}$	$q_{0123456}$	$q_{23456}$	
$q_{0123456 \text{ eF}}$	$q_{0123456}$	$q_{23456}$	
$q_{23456 \text{ eF}}$	$q_{23456}$	$q_{23456}$	

