

ch2. Automates

1. Machine de Turing simplifiée.

2. Définition

$\langle \Sigma, Q, q_0, F, \delta \rangle$

3. Représentation

- table de transition

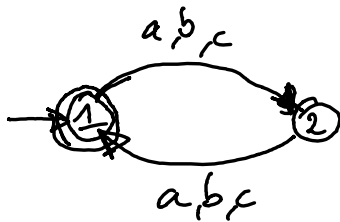
- graphe d'états

4. Langage reconnu

5. Exemples & manipulations

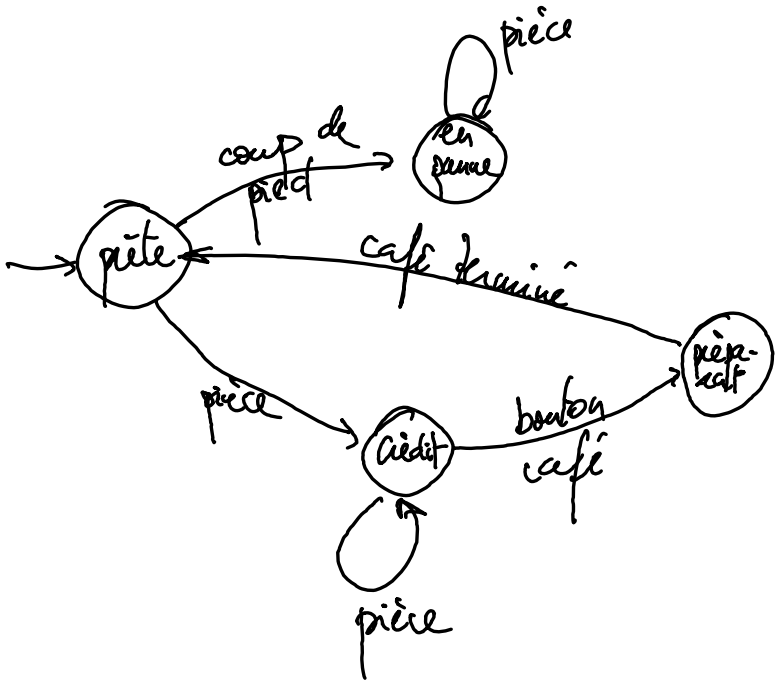
Ex: sur $\{a, b, c\}$: mots de longueur paire.

$ab \in \mathcal{L}$ $abc \notin \mathcal{L}$ $aaa \notin \mathcal{L}$ $aaab \in \mathcal{L}$.

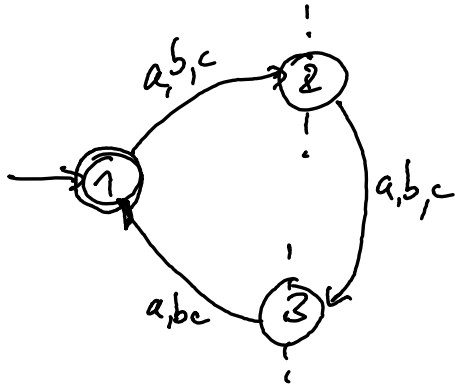


$abacaa \in \mathcal{L}$
1 2 1 2 1 2

$abb \notin \mathcal{L}$
1 2 1



piete pièce pièce pièce bouton prepaat
 credit credit credit



mot de longueur = $3k$.

$aacabaaac$ $\notin \mathcal{L}$
 1 2 3 1 2 3 1 2 3

aac $\in \mathcal{L}$
 1 2 3 1

$ababababab$ $\notin \mathcal{L}$
 1 2 3 1 2 3 1 2 3 1

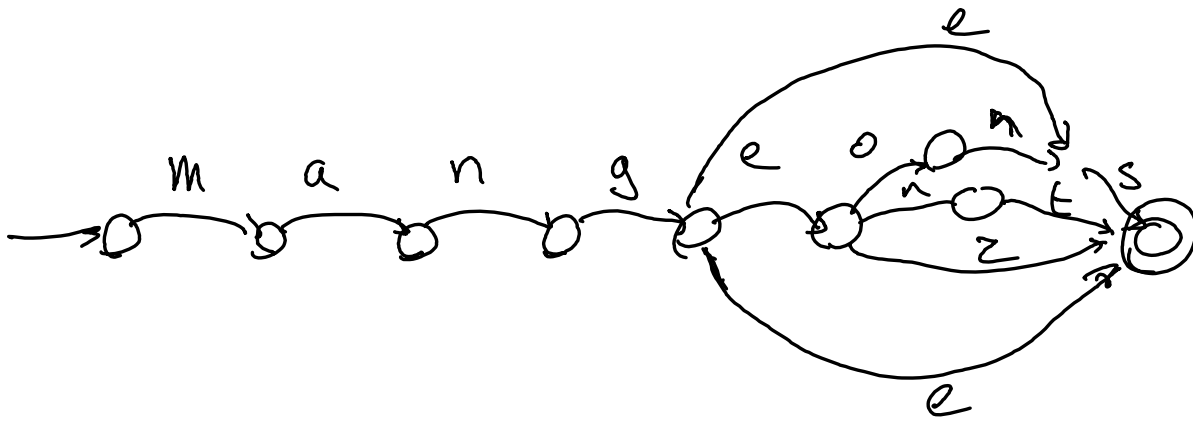
Automate:

- machine à faire des calculs

- machine à reconnaître des mots

$$\Sigma = \{a, b, c\}$$

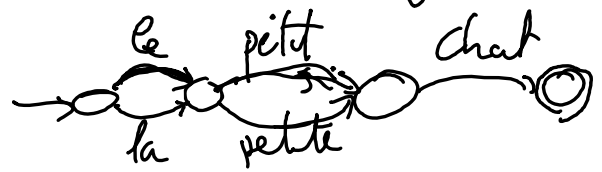
$$\Sigma^* = \{ \cancel{aaa}, \cancel{baa}, \cancel{acba}, bbb, \dots \}$$

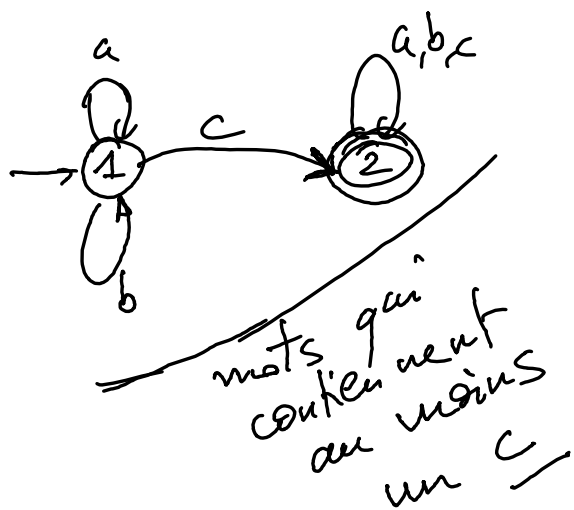


- mange
- manges
- mangeons
- mangez
- mangent

non déterministe .

UniteX
(Nooj)





mots qui
contiennent
au moins
un c

abcab
1 1 1 2 2 2

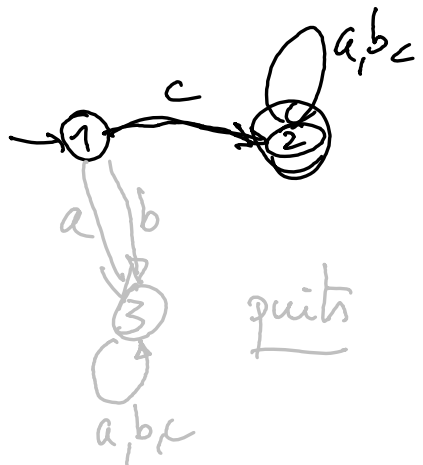
$\in \mathcal{L}$

aabaa
1 1 1 1 1 1

$\notin \mathcal{L}$

cab
1 2 2 2

$\in \mathcal{L}$



quits

mots
qui
commencent
par c

incomplet

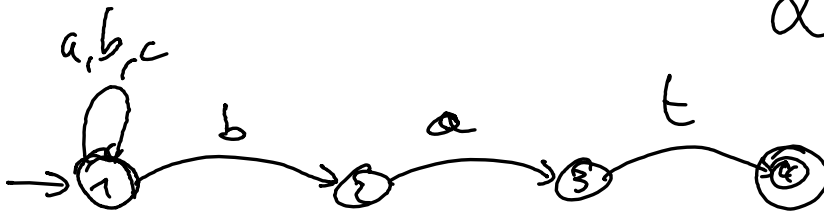
caabc
1 2 2 2 2 2

aac
1? incomplet.

aac
1 3 3 3

	a	b	c
→ 1	3	3	2
← 2	2	2	2
3	3	3	3

\mathcal{L} non deterministe



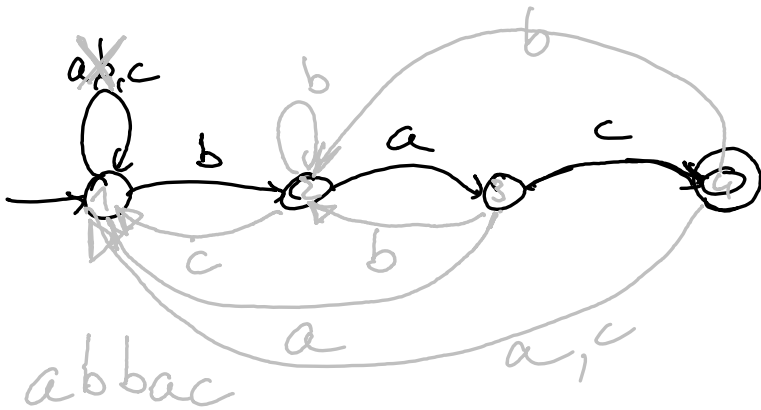
abba $\notin \mathcal{L}$
 1 1 1 1 1
 1 1 1 2 3
 1 1 2 —

abat $\in \mathcal{L}$
 1 1 2 3 4
 1 1 1 1 —

	a	b	c	t
1	1	1/2	1	
2	3			
3				4
4				

babab $\notin \mathcal{L}$

bata $\notin \mathcal{L}$



abbac

bc bac

... baabac

bacbac $\in \mathcal{L}$
 1 2 3 4 2

baaaaa $\notin \mathcal{L}$

	a	b	c
→ 1	1	2	1
2	3	2	1
3	1	2	4
← 4	1	2	1

deterministe .
 (+ complet)