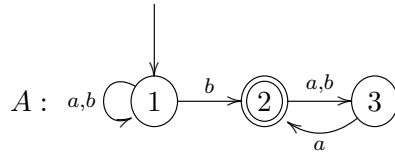
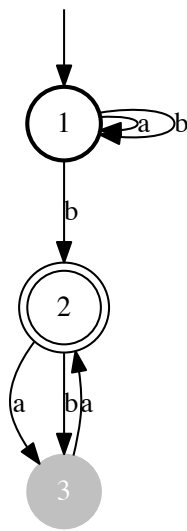


**Exercice 1 : Déterminez l'automate ci-dessous**

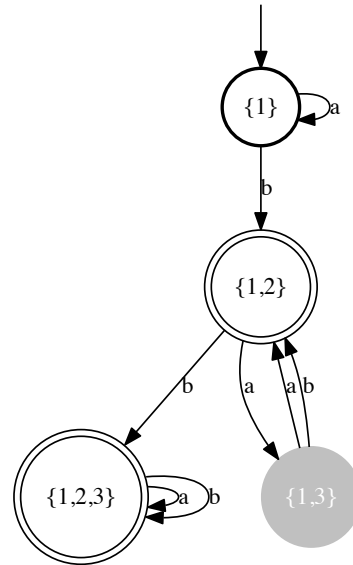


SOLUTION

A\_det\_2019



Full(Det(A\_det\_2019))



$A^D$	$\{1\}_i$	$\{1,2\}^a$	$\{1,2,3\}^a$	$\{1,3\}$
$a$	$\{1\}$	$\{1,3\}$	$\{1,2,3\}$	$\{1,2\}$
$b$	$\{1,2\}$	$\{1,2,3\}$	$\{1,2,3\}$	$\{1,2\}$

**Exercice 2 : Minimisez l'automate ci-dessous**

$A$	$1_i$	$2^a$	3	4	5	6	$7^a$	8
$a$			3	4	8		3	8
$b$	4	2	3	7	3	4	2	5
$c$	6	7	8	6	3	1	7	8

SOLUTION

On peut compléter l'automate A pour rendre explicite l'état puit (9)

$A$	$1_i$	$2^a$	3	4	5	6	$7^a$	8	9
$a$	9	9	3	4	8	9	3	8	9
$b$	4	2	3	7	3	4	2	5	9
$c$	6	7	8	6	3	1	7	8	9

puis on applique l'algorithme de minimisation pour calculer les classes d'équivalence d'états

Minimisation:

\* initial partition = { {1,2,3,4,5,6,7,8,9} }

states 1  $\sim\sim$  2 : NOT same accepting status

So, {1,2,3,4,5,6,7,8,9} is splitted into {1,3,4,5,6,8,9}  $\cup$  {2,7}

states 1  $\sim\sim$  4 : NOT same behavior on symbol 'b'

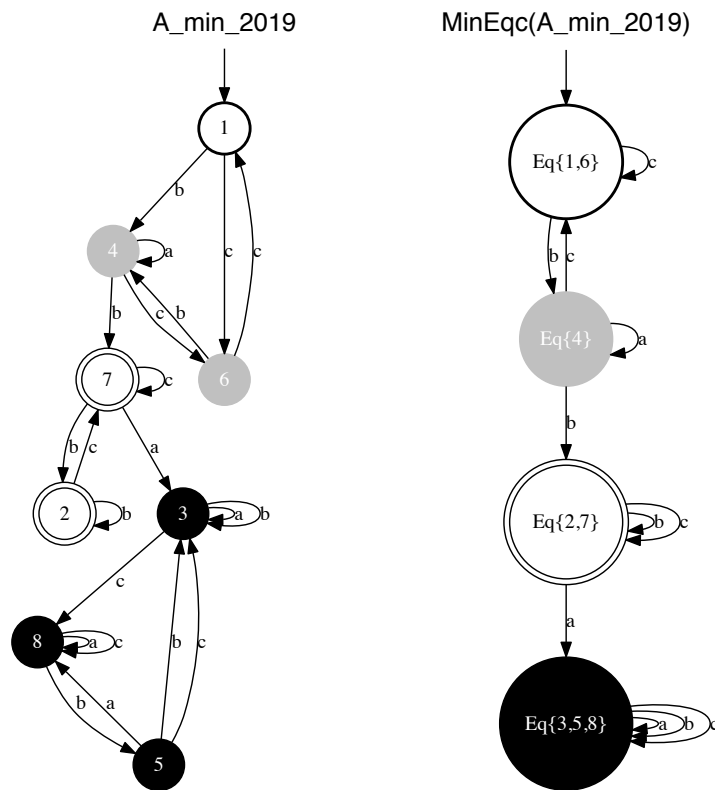
So, {1,3,4,5,6,8,9} is splitted into {1,3,5,6,8,9}  $\cup$  {4}

states 1  $\sim\sim$  3 : NOT same behavior on symbol 'b'

So, {1,3,5,6,8,9} is splitted into {1,6}  $\cup$  {3,5,8,9}

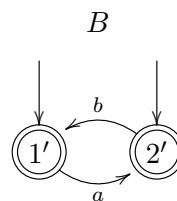
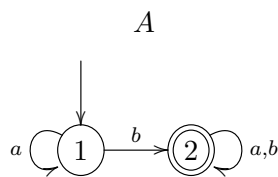
\* final partition = { {1,6} , {2,7} , {3,5,8,9} , {4} }

On construit l'automate minimisé dont les états sont les classes d'équivalence.




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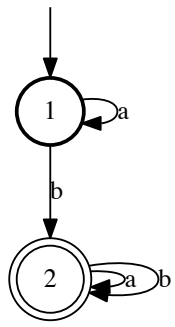
### Exercice 3 : Calculez $A \times B$



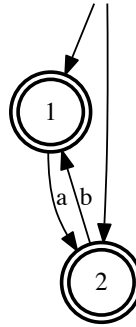

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SOLUTION

A\_prod\_2019



B\_prod\_2019



A\_prod\_2019\_x\_B\_prod\_2019

