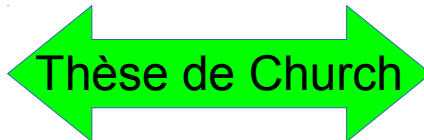


# Machines de Turing

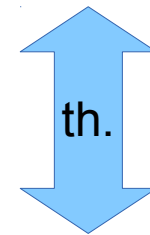
François Schwarzentruher  
ENS Cachan – Antenne de Bretagne

# Thèse de Church

Fonctions  
qu'une `machine`  
(cerveau,  
ordinateur etc.)  
peut calculer

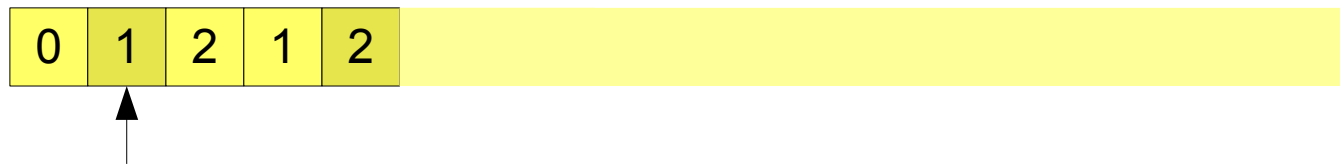
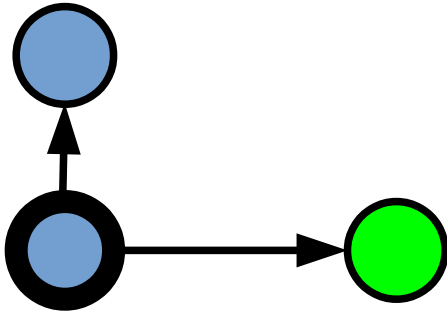


Fonctions récursives  
totales

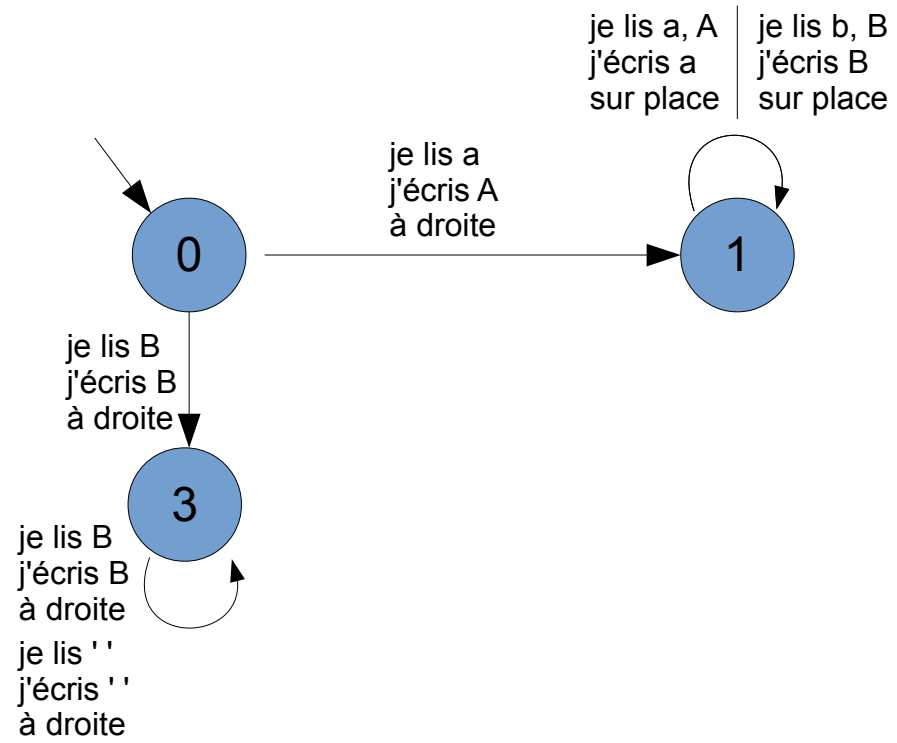


Fonctions calculables par  
machine de Turing

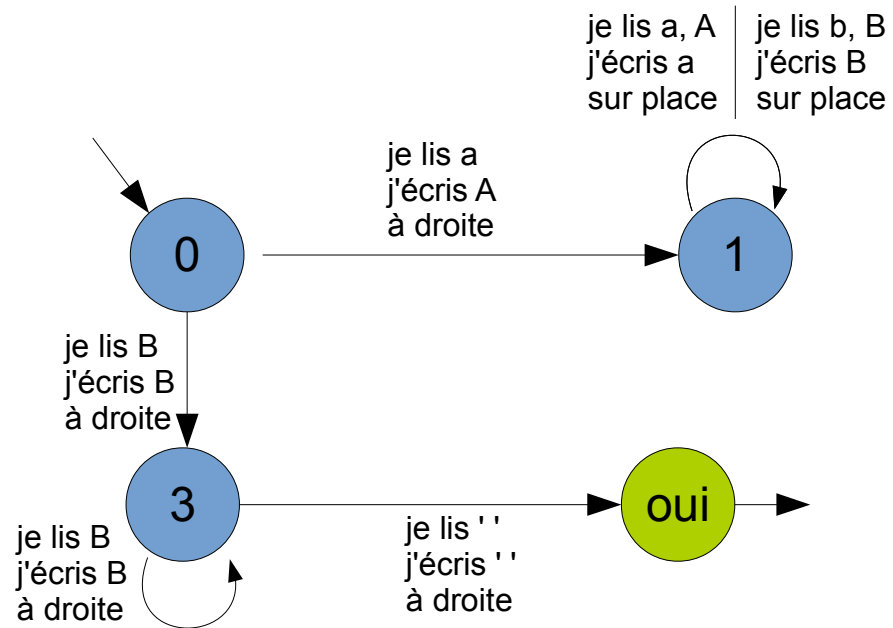
# Machine



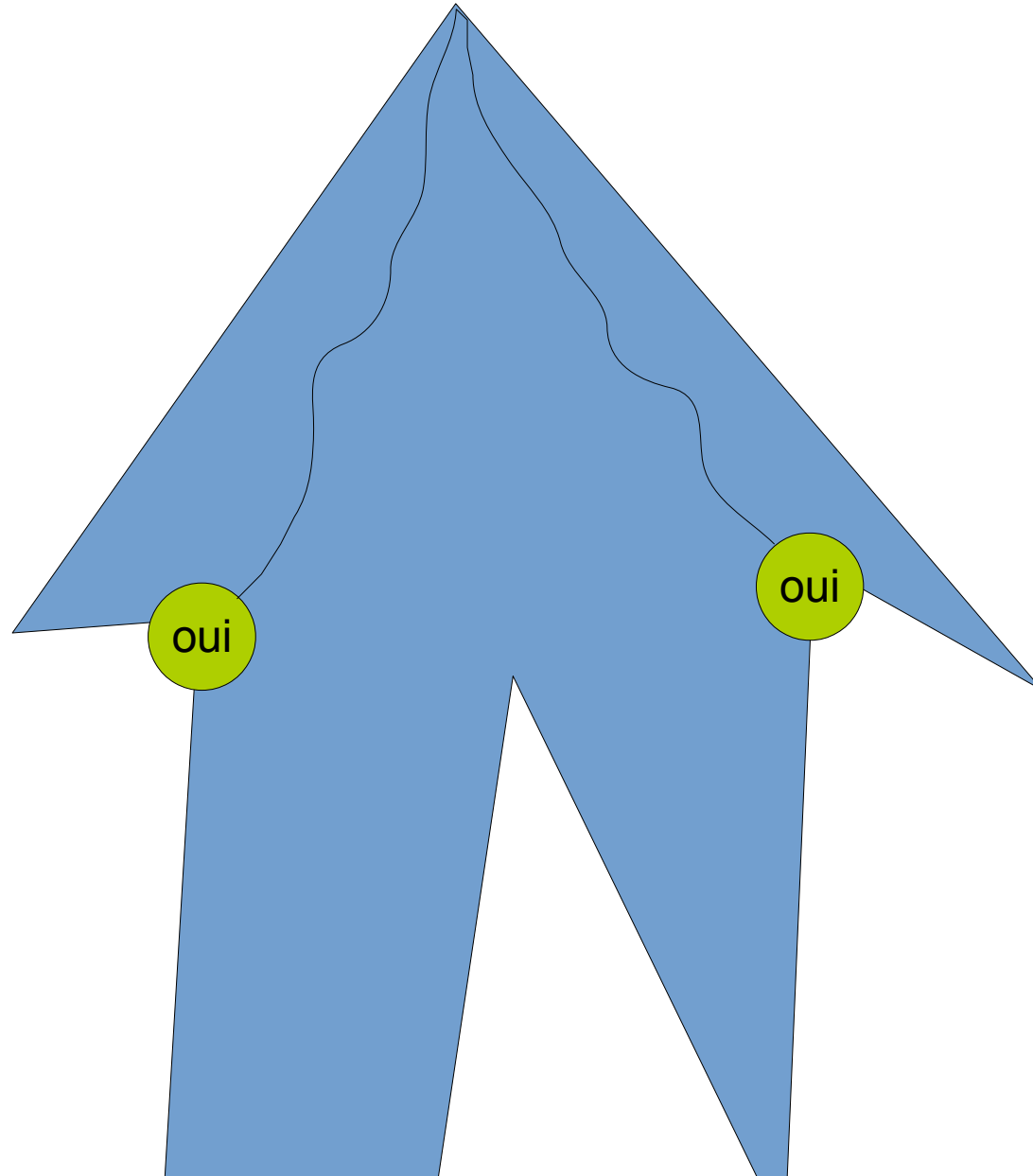
# Exemple



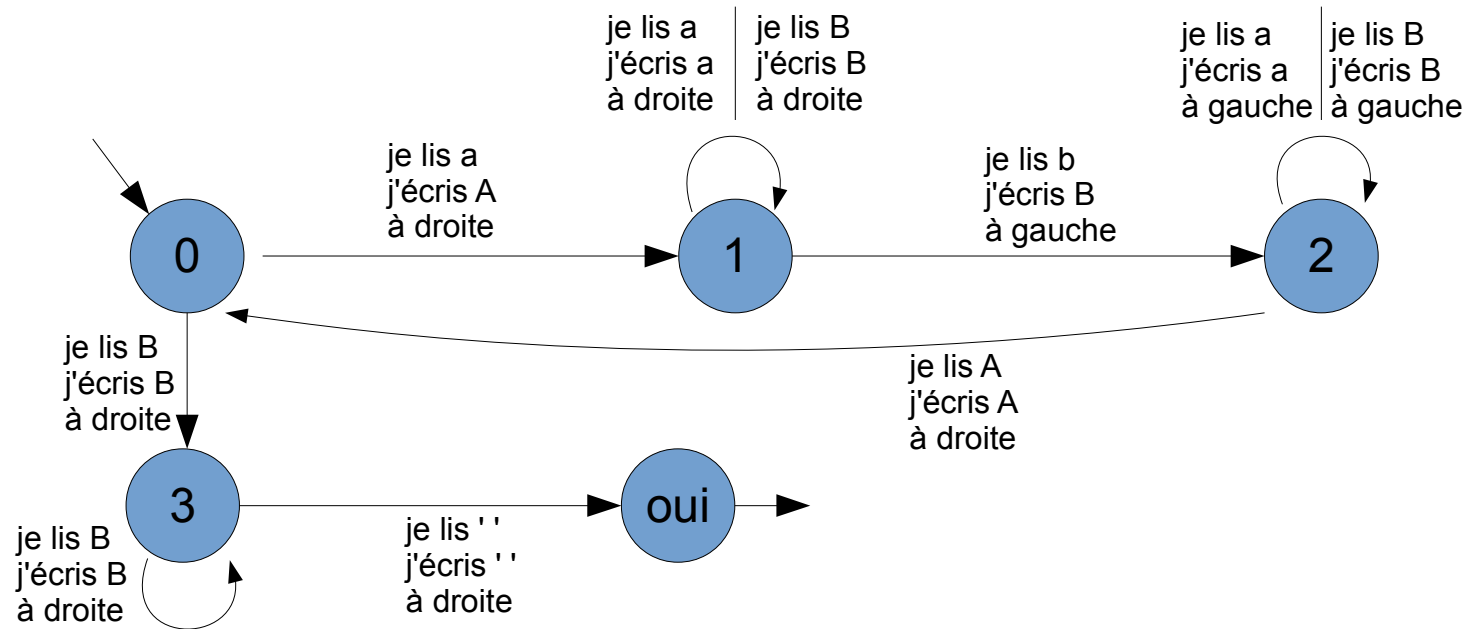
# Etat acceptant



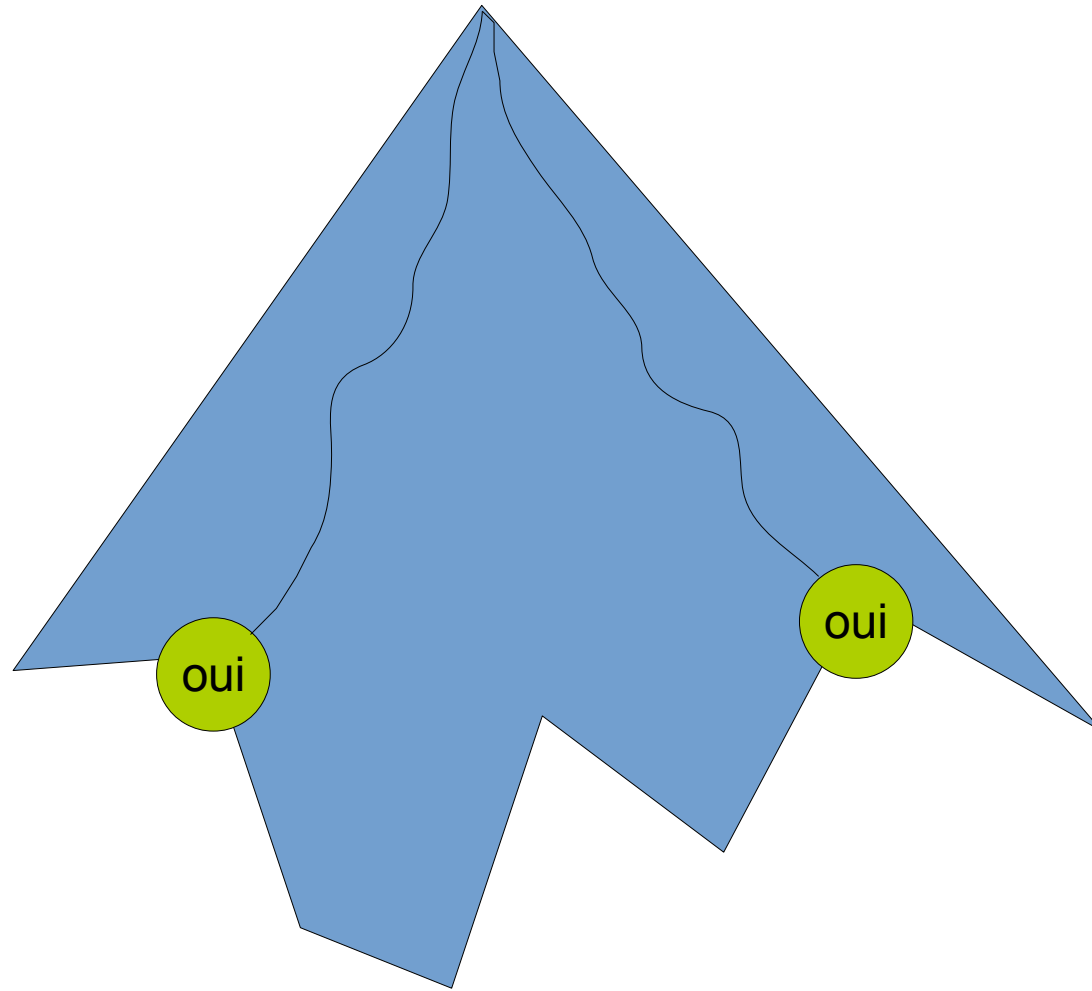
# Arbre de calcul (non-déterminisme)



# Langage décidé



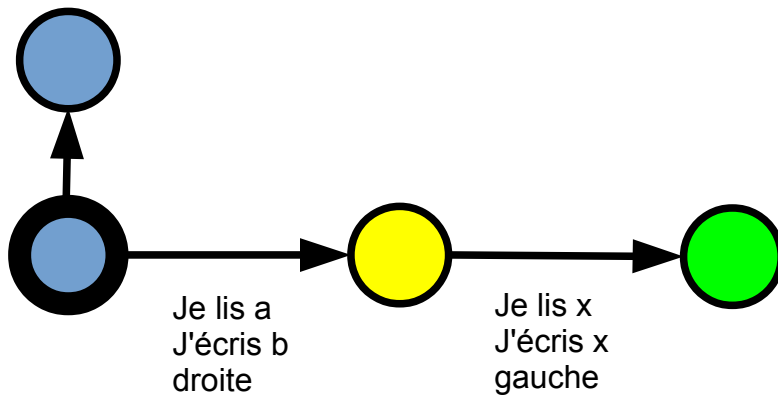
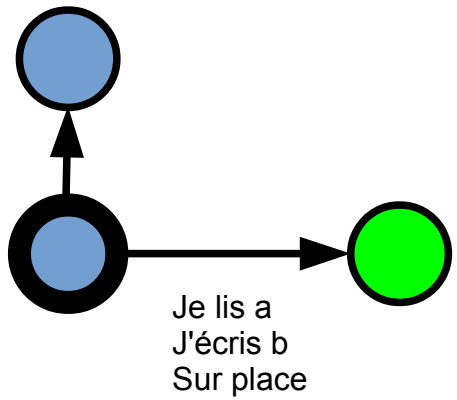
# Arbre de calcul pour un langage “décidé” (non-déterminisme)



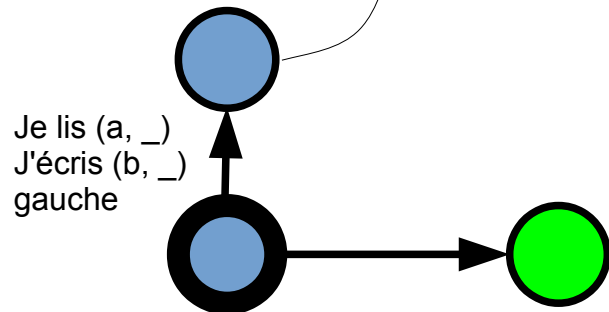
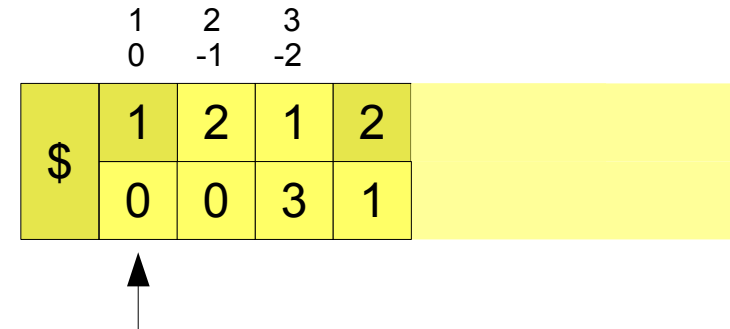
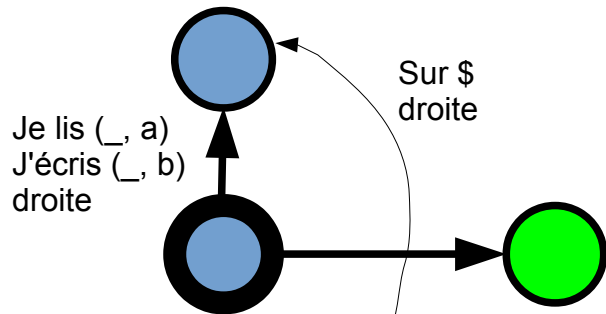
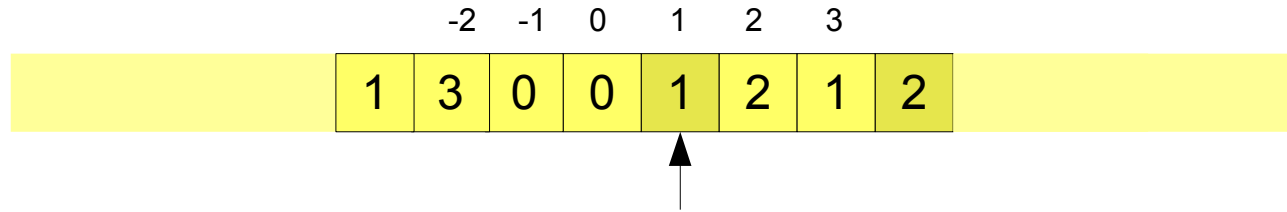
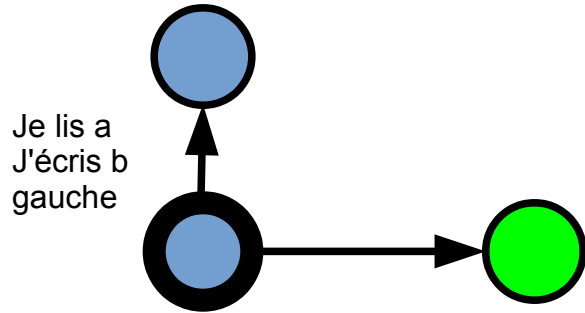


# Equivalence entre différents types de machine

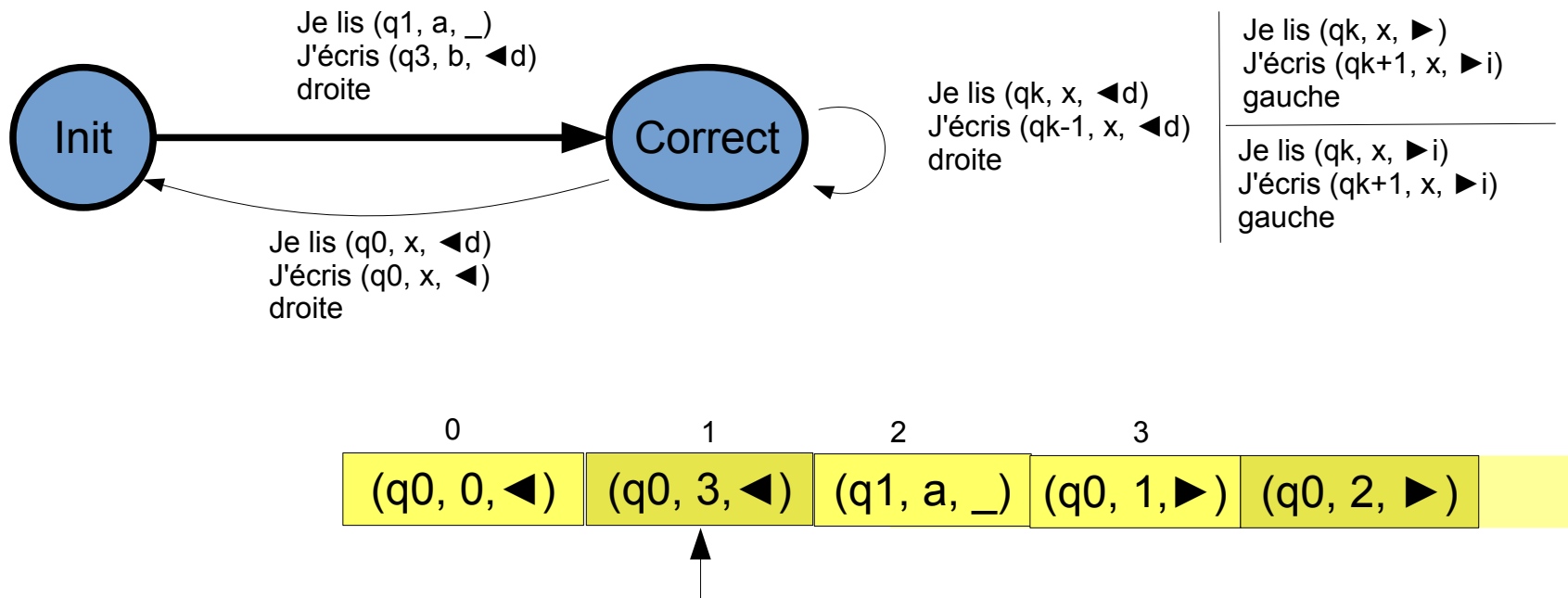
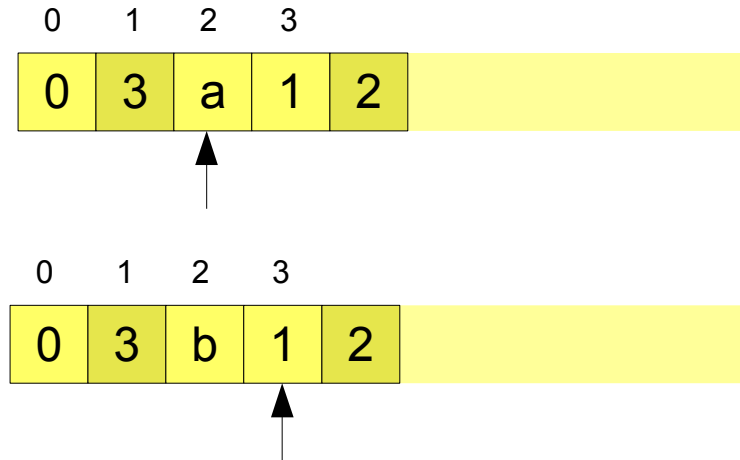
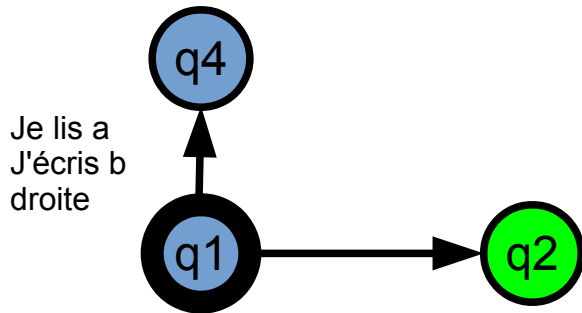
# > Supprimer le surplace



# Ruban infini des deux côtés > Ruban infini d'un seul côté

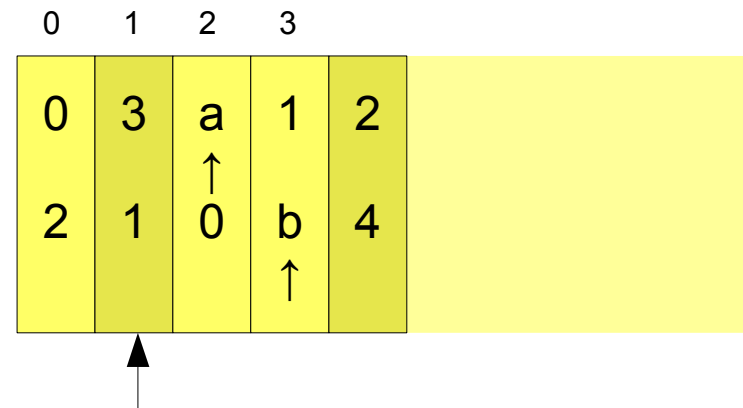
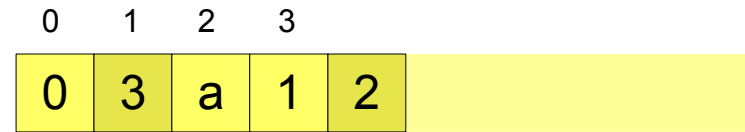


# > Machine à deux états seulement



> Uniquement 2 lettres  
(en plus de ' ')

# Machine à k rubans $> 1$ ruban



# Machine RAM

RAM

Registre 1

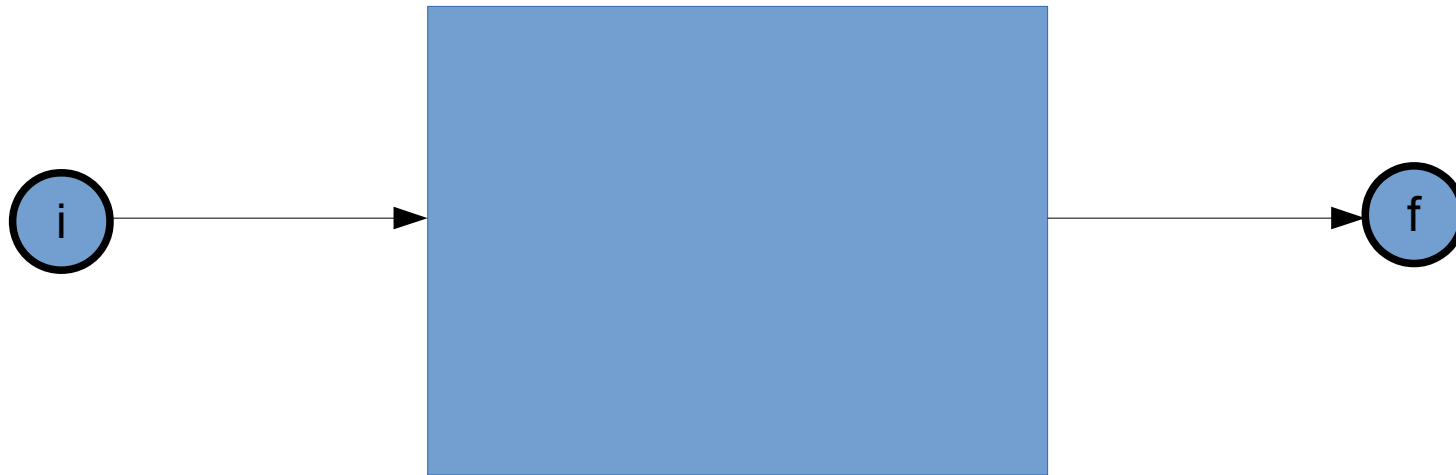
Registre n

PC

#0\*452#1\*4987#2\*4512#.....

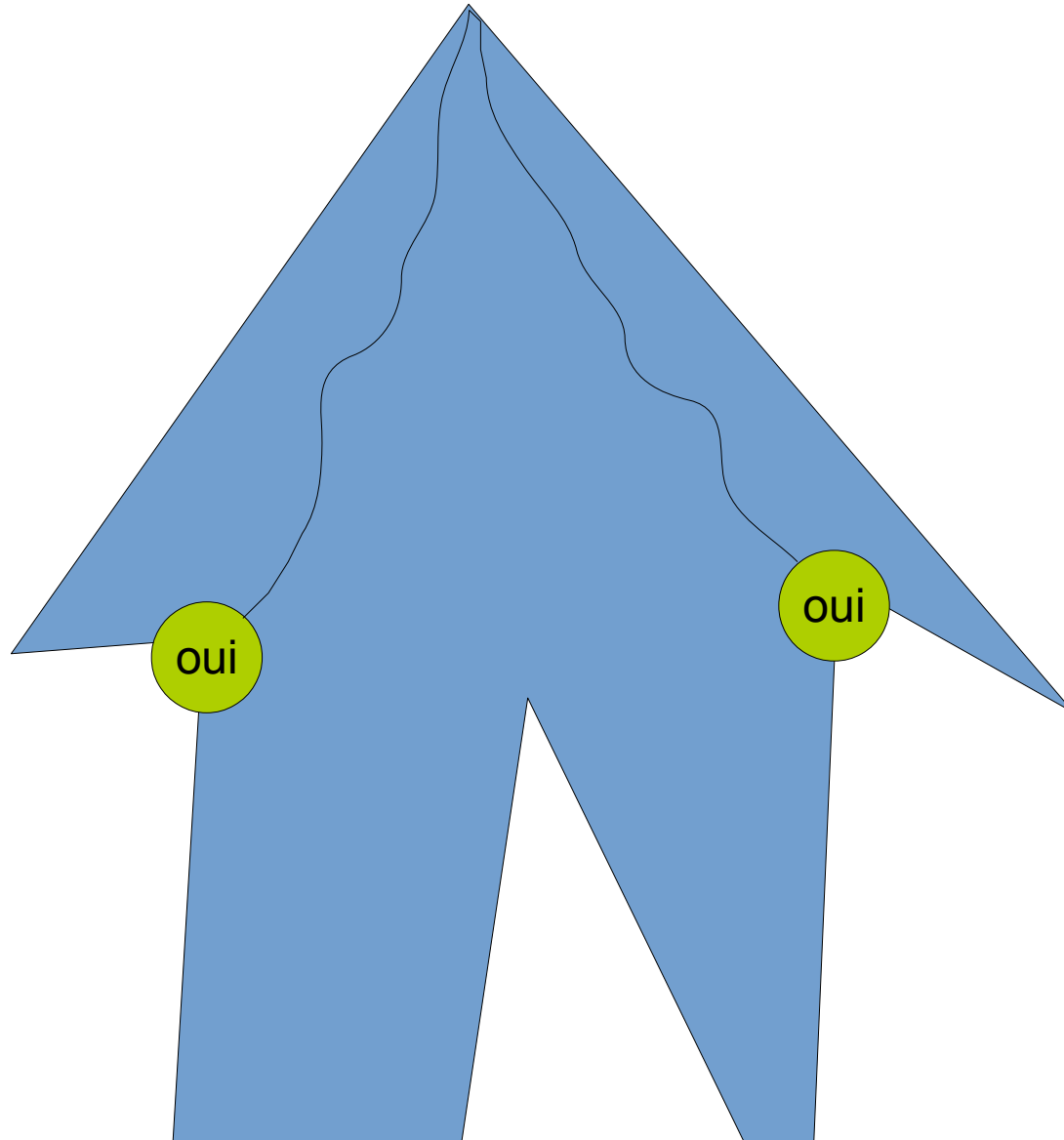
Add R1 R2

# Machine normalisée

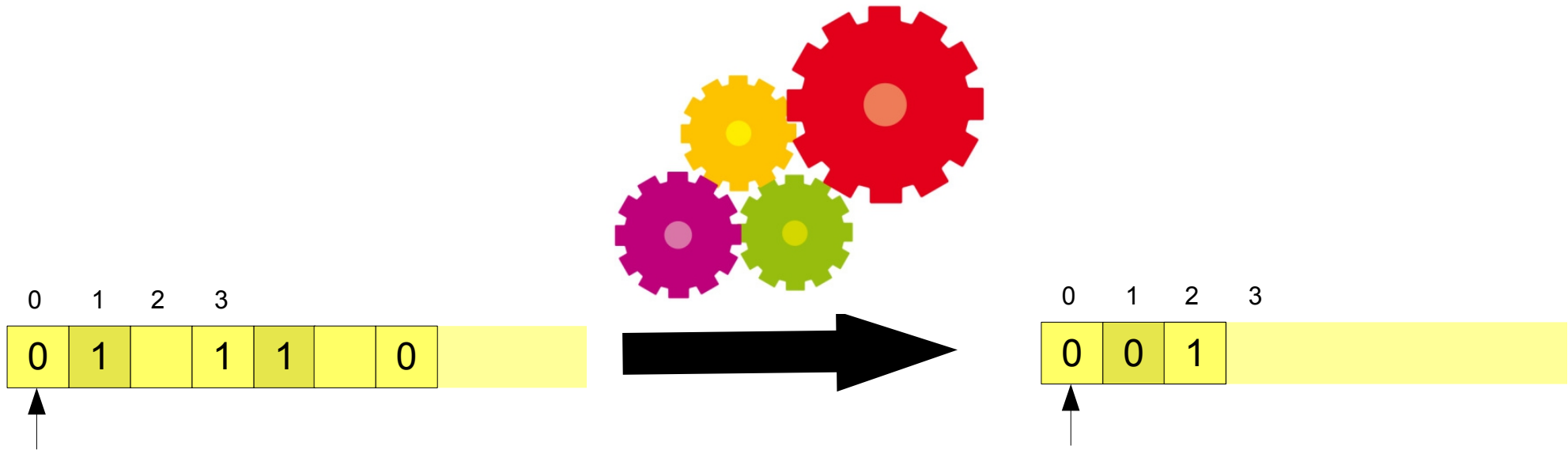




# Machines non-déterministe > déterministe



# Des fonctions récursives aux machines de Turing



# Des machines de Turing aux fonctions récursives

