

## Calculabilité & Complexité – cours du 10/03/11



Rappel : RAM = W = PPR

Car RAM = PPR

$n \mid$

$w$

**Compilateur :**

$\text{Comp}(P) = \text{Comp}(\text{Bloc})$

$\text{Comp}(\text{Bloc}) = \text{Comp}(\text{seq instruction})$

$\text{Comp}(\text{seq instruction}) = \text{Comp}(i_n) \circ \text{Comp}(i_{n-1}) \circ \dots \circ \text{Comp}(i_1)$

$\hookrightarrow \text{seq} = i_1, i_2, \dots, i_n$

$\text{Comp}(\text{instruction}) = \begin{cases} \text{Comp}(\text{aff}) & \text{si instruction} = \text{affectation} \\ \text{Comp}(\text{while var} \neq 0 \text{ do Bloc}) & \text{si instruction} = \text{while} \end{cases}$

$\text{Comp}(\text{mavar } 3 = \text{mavar } 1 \text{ op mavar } 2) = R_k = R_i \text{ op } R_j$

**Traduction du bloc :**

$R_{spe} = R_{spe} + 1$

*IF*  $R_k \neq 0$  *then goto*  $h + 2$

*IF*  $R_{spe} \neq 0$  *then goto*  $h + 2$  avec  $h = 1 \text{ comp}(\text{bloc})$

*comp*(Bloc)

*IF*  $R_{spe} \neq 0$  *then goto*  $h + 2$

$\text{Comp} : W * \mathbb{N} \rightarrow \text{RAM} * \mathbb{N}$  (programme while  $\rightarrow$  programme RAM)

$\text{int} : \text{RAM} * \mathbb{N} \rightarrow W * \mathbb{N} \Rightarrow \langle x, y \rangle$

$\Rightarrow$  execute le programme RAM  $x$  sur l'entrée  $y$