

# HOMWORK #2

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Step/Exec	Freq	Total
for ( <u><math>i=1</math></u> ; $i \leq \text{rows}$ ; $i++$ )	1	1
for ( $i=1$ ; <u><math>i \leq \text{rows}</math></u> ; $i++$ )	1	$\text{rows} + 1$
for ( $i=1$ ; $i \leq \text{rows}$ ; <u><math>i++</math></u> )	1	$\text{rows}$
for ( <u><math>j=1</math></u> ; $j \leq \text{cols}$ ; $j++$ )	1	$\text{rows}$
for ( $j=1$ ; <u><math>j \leq \text{cols}</math></u> ; $j++$ )	1	$\text{rows}(\text{cols} + 1)$
for ( $j=1$ ; $j \leq \text{cols}$ ; <u><math>j++</math></u> )	1	$\text{rows}, \text{cols}$
print (*)	1	$\text{rows}, \text{cols}$
print(new line)	1	$\text{rows}$

$$\text{Total} = 3 \cdot (\text{rows} \cdot \text{cols}) + 5\text{rows} + 2$$

$$T_{\text{worst}} = T_{\text{Best}} = T_{\text{Average}} = O(\text{rows}, \text{cols}) = \Omega(\text{rows}, \text{cols}) = \Theta(\text{rows}, \text{cols}) = \Theta(n^2)$$

In table, I separate for loop in 3 parts to show how many execution each part (initialization, condition, update)