

# CSE 341

## Programming Languages

*Performance Patterns, Macros*



Zach Tatlock  
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When I was a novice programmer, I spent many hours trying to "speed up" my code. One day, after many agonizing attempts at this feat, my mentor approached and asked how things were going. Upon hearing of my troubles, he imparted this sage wisdom:

"The CPU," he said, "runs at a certain speed. It can execute a fixed number of instructions per second, and no more. There is a finite limit to how many instructions per second it can execute."

"So there is no way, really, to make code go faster, because there is no way to make instructions execute faster. There is only such a thing as making the machine do less."

He paused for emphasis.

"To go fast," he said slowly, "do less."

## Optimization

The 1<sup>st</sup> rule of optimization:

*Don't do it.*

The 2<sup>nd</sup> rule of optimization(experts only):

*Don't do it ... yet.*

## Optimization

Seriously, only optimize with profile in hand.

Otherwise, two very nasty consequences:

1. time wasted
  - life is short! **YOLO**
2. code unnecessarily complex
  - need more beauty in the world