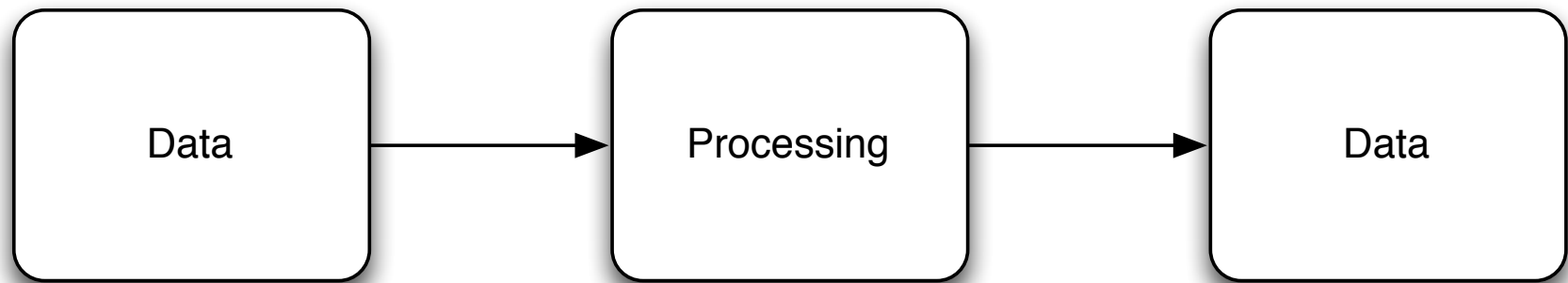
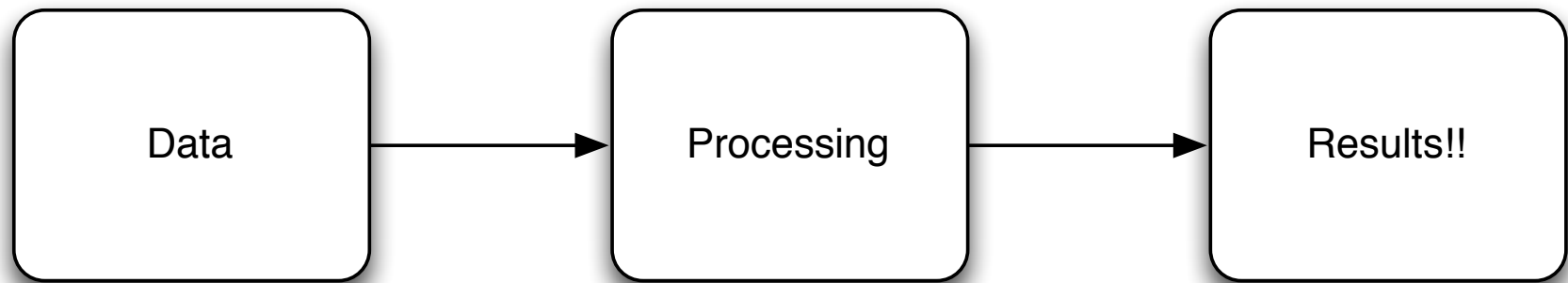


How computers work

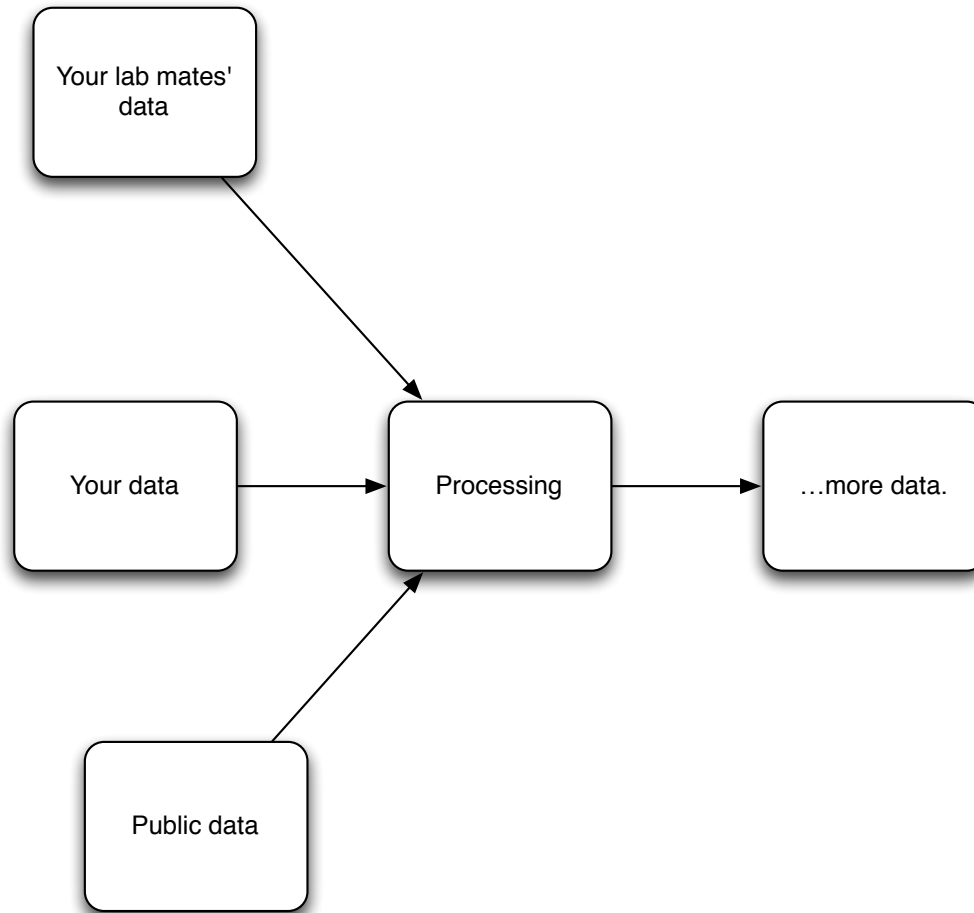
Fundamentally, computers:



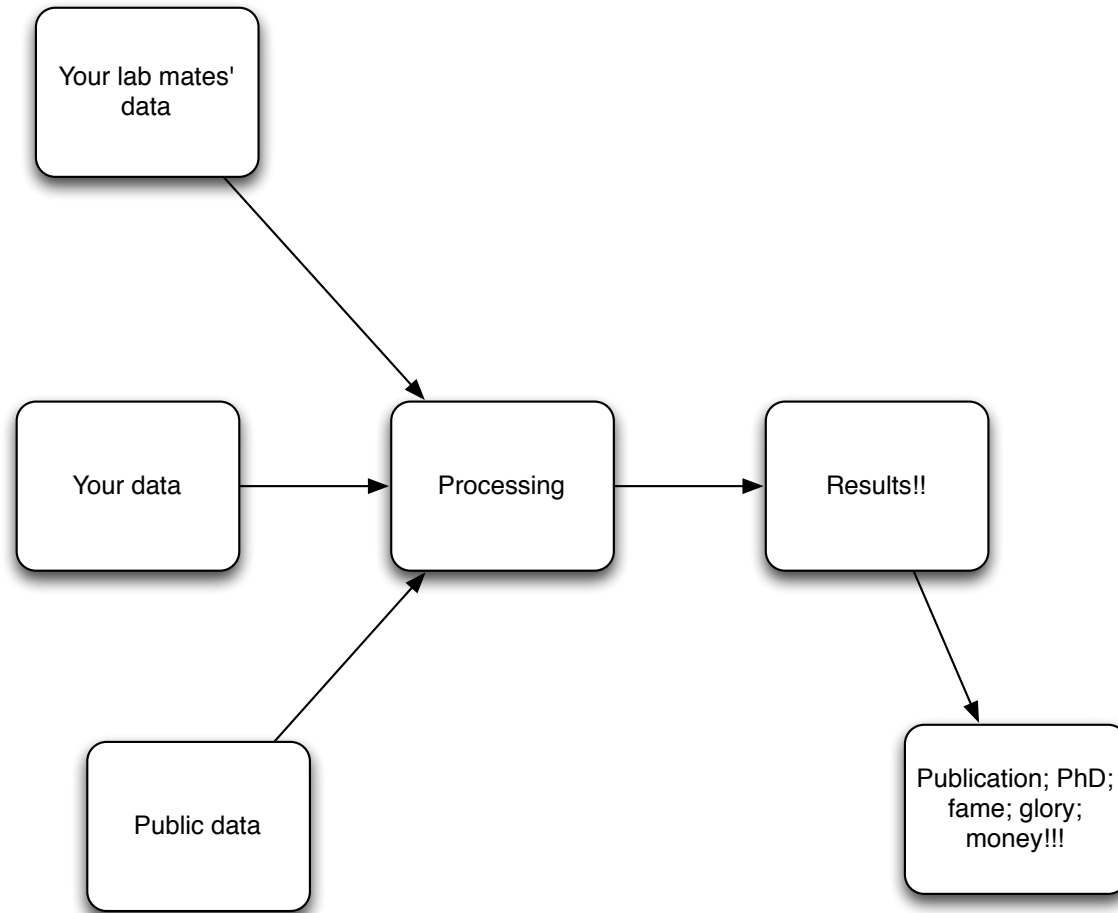
The romantic view



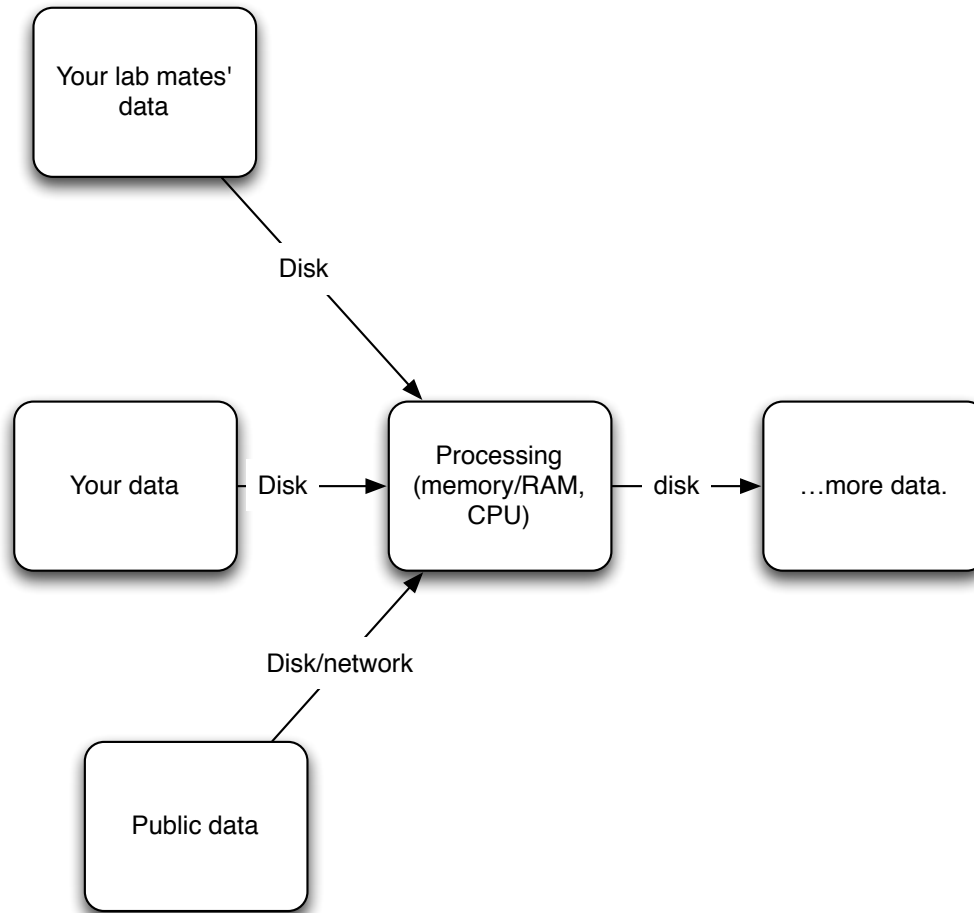
The romantic view, mixed with reality



The optimistic view



The sad reality



Issues to be raised...

- How do we keep track of what we've done?
- How do we know that what we've done is right?
 - Correct process?
 - Computer actually worked?
- How can we do things faster/more efficiently?
- How do we tell the computer what to do, anyway??

Issues to be raised...

- **How do we keep track of what we've done?**
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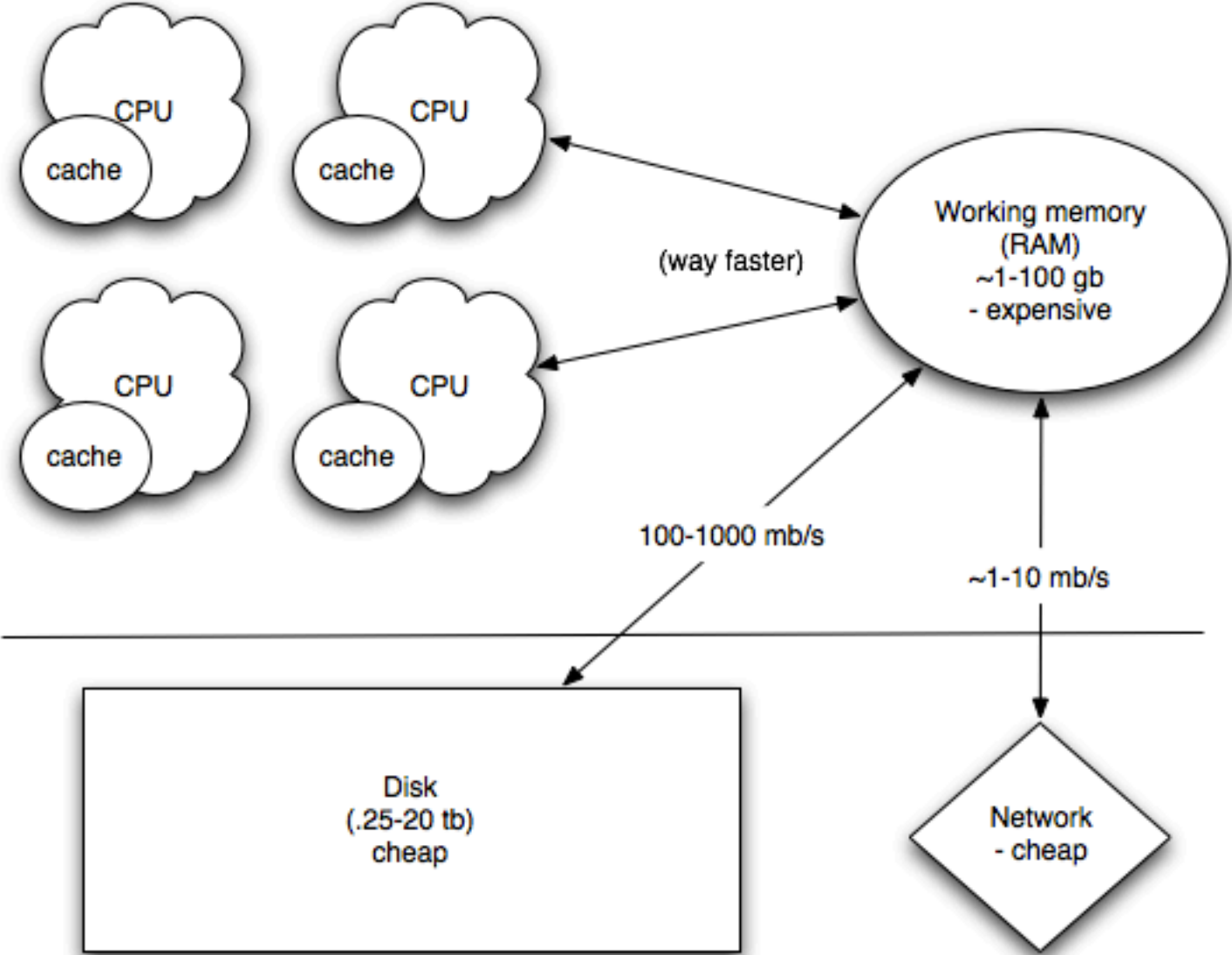
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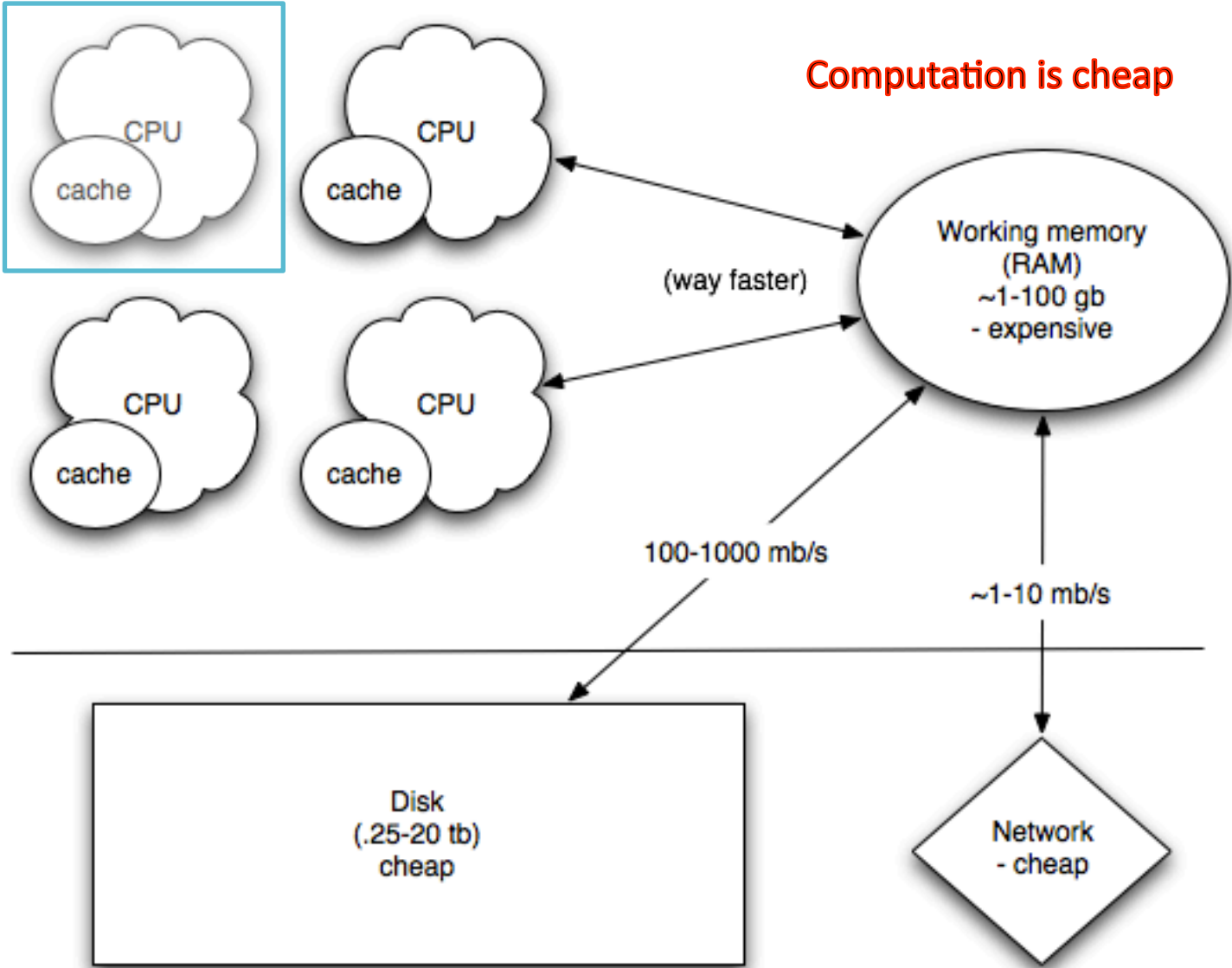
Efficiency

- Cost/resource tradeoff.
- Faster and slower ways of doing things.
- Computers don't work like people :)
 - Simple, automated, explicit tasks => computer
 - Judgement, intuition, creativity => human

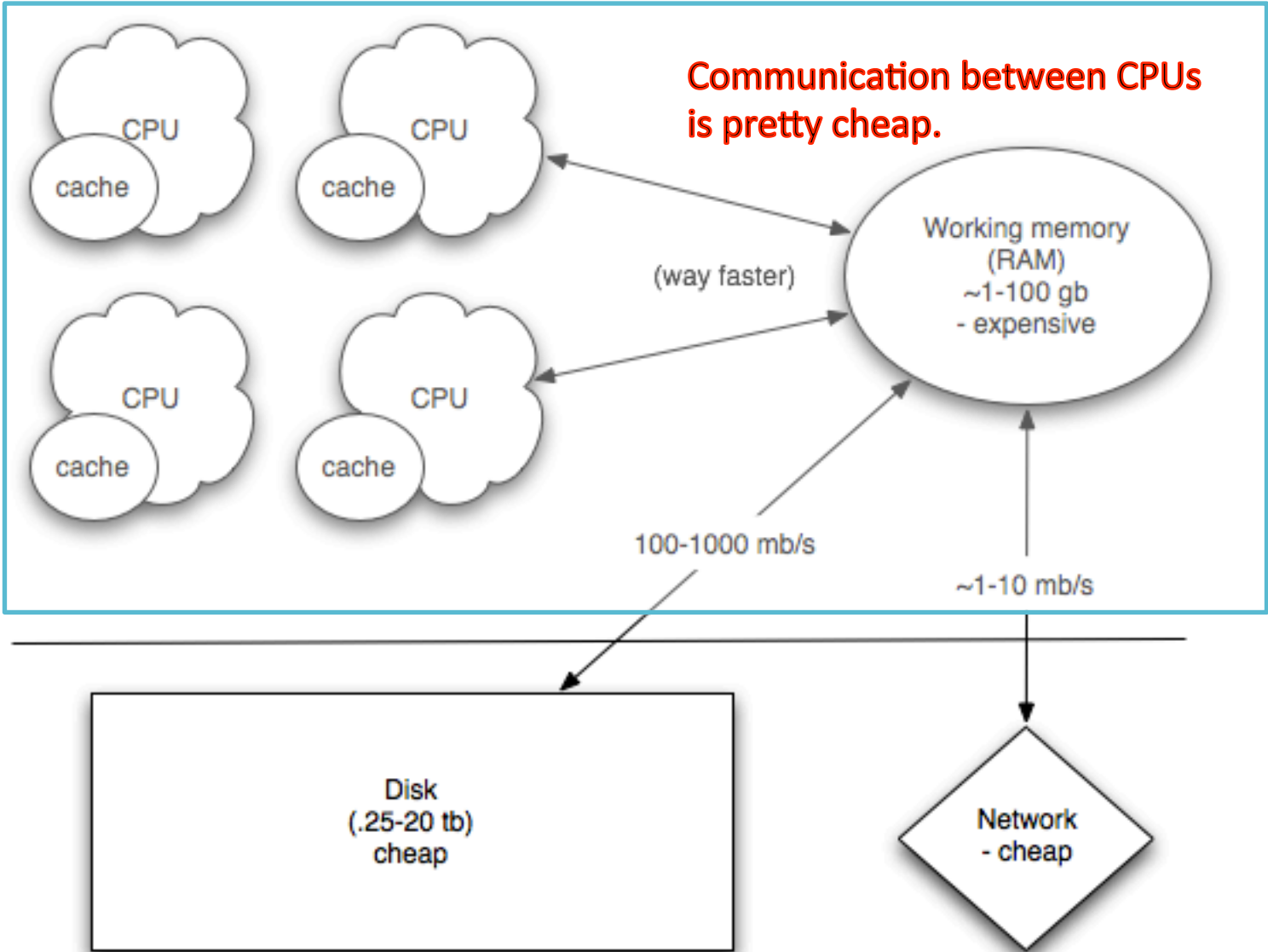
Computer architecture



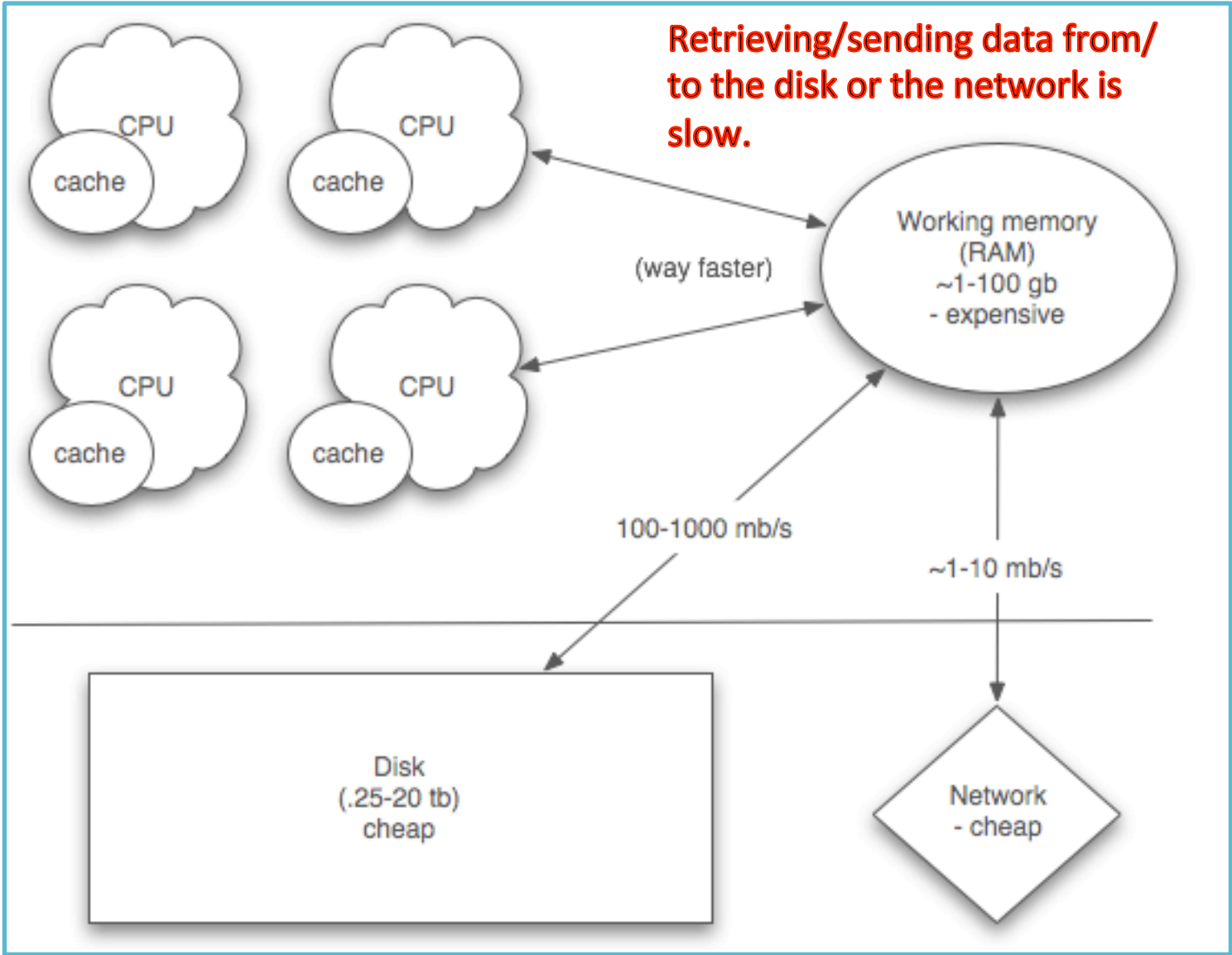
Computer architecture



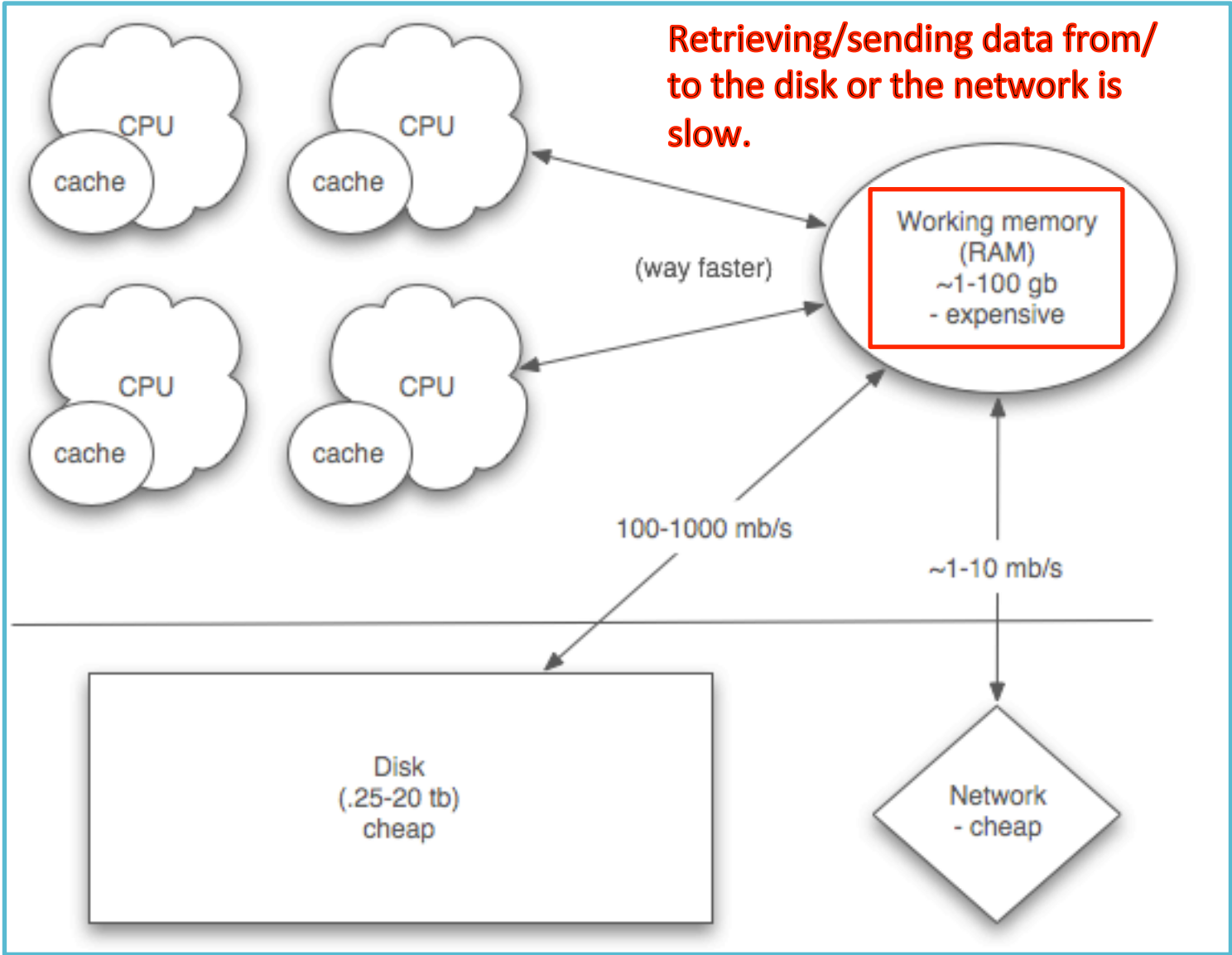
Computer architecture



Computer architecture



Computer architecture



Issues to be raised...

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Telling the computer what to do

- Translating your will => computer effort is technically challenging!
 - Shell commands (a few days to a few months)
 - Scripting (a few weeks to a few years)
 - Programming (a few months to a lifetime)
- Have to meet the computer halfway...
- Most important bit? Manipulating files and executing programs => “shell”