

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light greenish-blue. They are positioned diagonally, with the blue one partially covering the green one.

Lec 3 - How to find a job + Databases



How to look for a job?

- And the secrets of landing one (hard work, mostly)



PEY

- Anyone know what's the current situation with PEY? Are there a lot of opportunities?
- Any tips?



Conversion Funnels

- Resume review (50%)
- Pre screen (30%)
- Interview (10%)
- Get a job! ($0.5 * 0.3 * 0.1 = 1.5\%$)



How to get ahead

- Resume review - apply often!
- Pre screen - take your time to prep
- Interview - do more interviews
- Get a job!



Resume

- Keep it to one page
- Set a timer for 20s, see how much info you can read
- Ruthlessly cut down to size



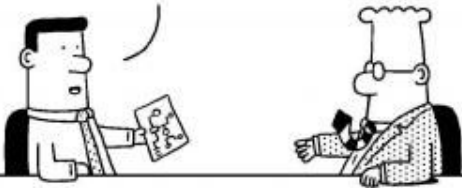
Prescreen

- This is where you shine, now show them what you know
- Do preparation before attempting the real one
- Don't cheat - will be caught

Interviews

JOB INTERVIEW

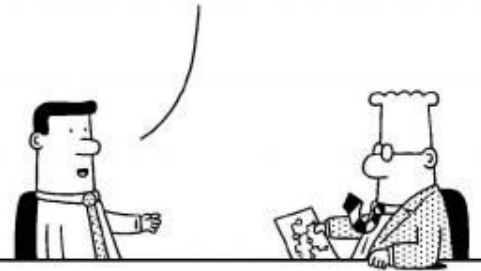
WE NEED SOMEONE WHO CAN SOLVE THE BIGGEST ENGINEERING PROBLEM WE HAVE EVER ENCOUNTERED.



JUST DISTRIBUTE THE POWER SUPPLY ACROSS BOTH FUNCTIONS AND DOUBLE THE FAN SIZE.



THANKS. IF I NEED ANYTHING ELSE, I'LL INTERVIEW YOU AGAIN.



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Interviews

- If this is your first interview, you are doing it wrong
- How many people are looking for a job?
- How many people have never done an interview before?



How to treat lectures?

- Tutorials are super important
- You are gaining context and background info to understand topics better



Storage

```
1 #!/bin/bash
2
3 db_set () {
4     echo "$1,$2" >> database
5 }
6
7 db_get () {
8     grep "^$1," database | sed -e "s/^$1,/" | tail -n 1
9 }
```



What's missing?

- Schema
- SQL
- Read performance
- Resiliency
- Scalability



How to improve read?

- What about in memory dictionary that records key + offset
- All keys must fit in RAM
- Crash recovery takes a long time



Is this useful?

- Yes! WAL is basically a version of this



Everything is tradeoff

- Everytime you improve something, something else gets worse
- Typically it's system gets more complex
- Key to your job as engineers



More to follow

- We will cover distributed systems at the end of the course



SQL

- Relational - how different objects are related
- Declarative
- ACID complaint (typically)



NoSQL

- Twitter hashtag
- Greater easier scalability
- Open source vs commercial
- Specialized queries/models (graph)
- Schemaless (document)



Document (Mongo)

- Schemaless? Schema on read?
- How does it compare to programming?
- When to use document db?



Graph (Neo4j)

- Different data model, more expressive when full of many-to-many
- Complex queries that's graph based



Dependency Injection

- Injecting dependency into objects dynamically (typically through constructor parameters)
- Similar to first class functions