Giving a Presentation

How to give a good presentation

How to give a good peer review feedback

School of Computing and Information

Department of Computer Science

Presentation Logistics

- We'll have 2 presentation sessions per day
  - 15 minute talk
  - 5 - 10 minutes Q & A

- All talks must be emailed to me by Thursday midnight the day before your presentation
  - Preferred format: PDF
  - Alternative format: Powerpoint
  - Please put a cover page with title, name, and project (So that reviewer knows who you are and where you worked)
  - Please number your slides

Now let's talk about giving a good talk

Outline

- Why am I presenting in front of all these people?

- How to structure my talk

- Issues you want to avoid
  - Slide Design
  - Slide Delivery

Outline

- **Why am I presenting in front of all these people?**

- How to structure my talk

- Issues you want to avoid
  - Slide Design
  - Slide Delivery

Why am I presenting in front of all these people?

1. You have experience worth sharing with your peers
   - Your internship was valuable one way or another
   - Disseminate value to your peers (you know, like a TED)

- Could be …
  - Detailed design of a product;
    What happens behind the scenes to make it work?
    Why was a certain tech used and not something else?
  - Software development methodology;
    How did you feel about it? Did it increase productivity?
  - A new interesting job category;
    How does it compare to SW developer? Did you like it?
  - Any challenges you faced and how you solved them;
    Can be technical, interpersonal, organizational

Why am I presenting in front of all these people?

2. To gain practice in giving a technical talk
   - Learn how to structure your ideas
   - Learn how to design slides effectively
   - Learn how to deliver your ideas impactfully

- You have an active role in giving peer reviews on where your friend needs to improve in the future

3. **NOT** to report your internship to your instructor

- If that was the purpose, I would not have 20+ busy people sit down with me while you talk

- That purpose is already fulfilled by your report

- Your presentation should be directed at your peers, not at your instructor

Outline

- Why am I presenting in front of all these people?

- **How to structure my talk**

- Issues you want to avoid
  - Slide Design
  - Slide Delivery

Structure your talk based on your audience and the time that you have

Your audience: Generally smart individuals
- Computer Scientists? Yes
- Knowledgeable about your area? Maybe
- Knowledgeable about your problem? Probably not

Time is usually limited
- Invited talk: < 1 hour
- Conference talk: 20 minutes or so
- Elevator talk: < 2 minutes
- Your talk: 15 minutes

This is not a lot of time...

Bottom line: Your audience should learn something from your talk

That's not a lot of time, how should I structure my talk to relate to these people?

This is a hard problem...

... with interesting applications...

... that builds on prior work...

Two sub-parts:
- You solved a problem
- You used neat technological advancements to do this
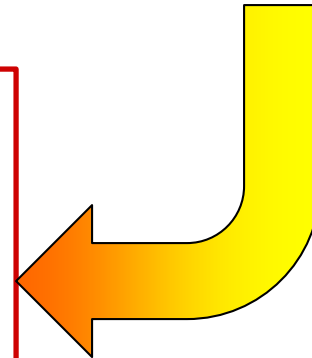
Give context and big picture

- **Do not lose sight of the big picture**
  - Audience should always know where you are taking them
  - Why are you telling me this? Where does it fit in?
  - Audience may need refocusing from time to time

- **Give context**
  - Don't just say I did this and I did that
  - How did it help your organization?
  - How did it help the end-user?
  - What considerations went into the decisions?
  - What constraints did you have?

Outline

- Why am I presenting in front of all these people?

- How to structure my talk

- **Issues you want to avoid**
  - **Slide Design**
  - Slide Delivery

Admire my beautiful slide

Admire my beautiful slide

- A slide is not a work of art – curb your enthusiasm

- Fonts, colors, and style should be consistent
  - If not, the difference should convey a meaning

- Also remember, a portion of population is color blind

- By the way, was that outline slide *really* necessary?
  - Most talks are structured that way – no information content

Look at my code, my code is amazing

Algorithm 1 A simple recursive scoring scheme.

1: **Function** score$(p \in \mathcal{P}, A.R \in \mathcal{R}, v \subseteq \mathcal{V}) : \mathbb{R}$
2: // Filter credentials and initialize storage vector
3: $C = \{c_i \mid c_i \in v.C \wedge \mathsf{head}(c) = A.R\}$
4: Discard all $c_i \in C$ of the form $A.R \leftarrow P', P' \neq P$
5: $\overline{s} = [1, 0, \ldots, 0]$ // vector in $\mathbb{R}^{|C|+1}$
6:
7: **for all** $c_i \in C$ **do**
8: $\quad \overline{w_i} = v.\mathcal{A}.\mathsf{weight}(c_i)$ // weight vector for c_i
9: $\quad$ **if** $c_i = A.R \leftarrow P$ **then**
10: $\quad\quad \overline{t} = [1, 1]$
11: $\quad$ **else if** $\mathsf{body}(c_i) = B_1.R_1 \cap \cdots \cap B_k.R_k$ **then**
12: $\quad\quad \overline{t} = [1, B_1.\mathsf{score}(p, B_1.R_1), \ldots, B_k.\mathsf{score}(p, B_k.R_k)]$
13: $\quad$ **else if** $\mathsf{body}(c_i) = A.R_1.R_2$ **then**
14: $\quad\quad$ Find $B \subseteq A.R_1$ such that $\forall B_j \in B : P \in B_j.R_2$
15: $\quad\quad \overline{t} = [1, max_{B_j \in B}(B_j.\mathsf{score}(p, B.R_2))]$
16: $\quad$ **if** $\overline{t}$ contains any 0 entries **then**
17: $\quad\quad \overline{s}[i] = 0$
18: $\quad$ **else**
19: $\quad\quad \overline{s}[i] = \overline{t} \cdot \overline{w_i}$
20:
21: // Get master weight vector and combine all weights
22: $\overline{w} = v.\mathcal{A}.\mathsf{weight}(A.R)$
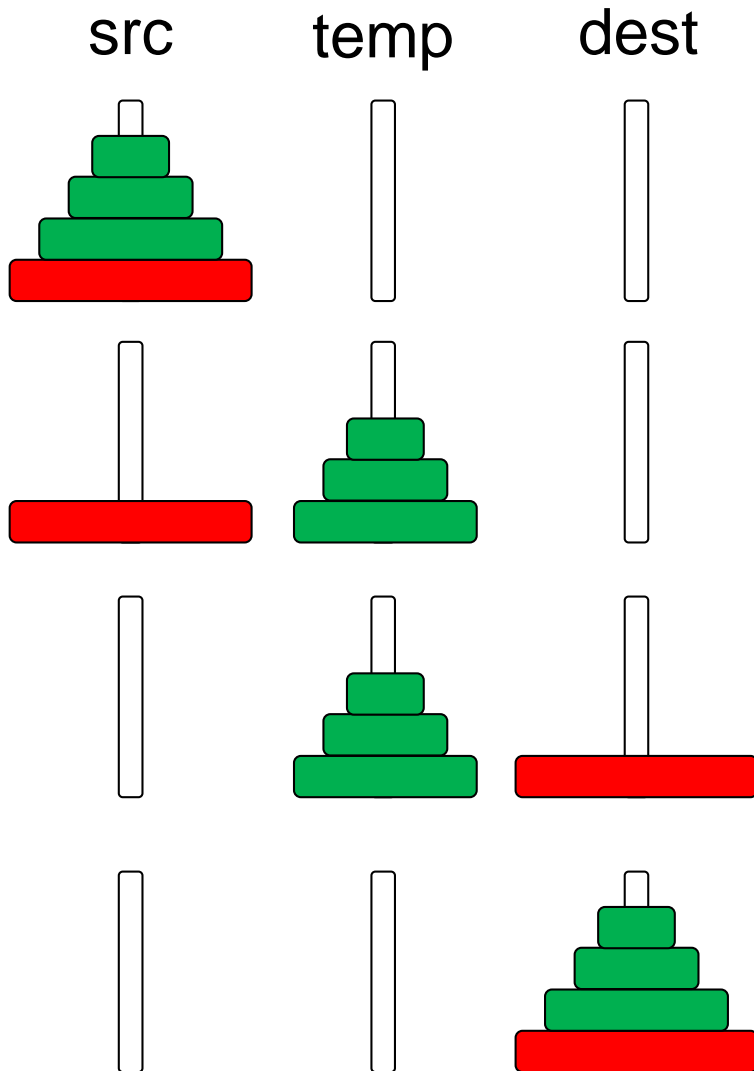23: **return** $\overline{s} \cdot \overline{w}$

Look at my code, my code is amazing

- Hate to break it to you but …

- Nobody wants to read your code (if avoidable)
  - Nobody wants to read your code (if not avoidable)

- If you really feel the need …
  - At least explain at a high level what the code is trying to do
  - Focus audience attention at the part that is interesting

Towers of Hanoi

src   temp   dest

- Move all disks from a tower to another. You can use a third temporarily.

- Move n-1 disks into "temp"

- Move 1 disk into "dest"

- Move n-1 disks into "dest"

By the power of recursion!!!

- Recursive solution for the Hanoi towers

```
void solve_hanoi(n, src -> dest, temp)
{
    if (n == 0) return;    Solve moving 0 disks!
    solve_hanoi(n-1, src -> temp, dest);
    move(1, src -> dest);  Moving one disk is easy
    solve_hanoi(n-1, temp -> dest, src);
}
```

Solve moving n-1 disks with the power of recursion!

I am a math whiz

$$\text{score}(p, A.R, v) = \sum_{(C_i, w_i) \in \text{osets}_\omega(v.C, A.R)} w_i \cdot \frac{1}{2}^i$$

$$\omega_{len}(C_s, \_) = \gamma^{\max_{p \in \text{paths}(C_s)}(\text{length}(p))}$$

$$\omega_{ind}(C_s, C) = 1 - \frac{\max_{C_i \in C \setminus \{C_s\}}(|C_s \cap C_i|)}{|C_s|}$$

$$\omega_{li}(C_s, C) = \alpha \cdot \omega_{len}(C_s, \_) + \beta \cdot \omega_{ind}(C_s, C)$$

I am a math whiz

- **Well guess what. Many are not.**

- **Translate math to plain English whenever you can**

- **At least highlight what matters, and what is the take home message**

$$\omega_{ind}(C_s, C) = 1 - \frac{\max_{C_i \in C \setminus \{C_s\}}(|C_s \cap C_i|)}{|C_s|}$$

Increasing the elements of C_s decreases the value of the function

Just read my text

- ## Proof sketch:

Monotonic. To prove the monotonicity of Equation 6, we proceed by induction. We first assume that principal p has previously discovered the (ordered) collection of proofs and weights $(C_1, w_1), \ldots, (C_n, w_n)$ for the role $A.R$. The base case that we must consider is that a new pair (C_s, w_s) is discovered such that no weight w_i is less than w_s. In this case, this new pair will introduce a new term to the end of the summation calculated by Equation 6, thereby increasing principal p's score for the role $A.R$.

Assume that (C_s, w_s) can be inserted before up to n terms in the sequence of (c_i, w_i) pairs while still preserving the monotonicity requirement. Now, assume that p has previously found proofs of authorization with the sequence of weights $S = (C_1, w_1), \ldots, (C_i, w_i), \ldots, (C_{i+n}, w_{i+n})$ and has now discovered a (C_s, w_s) pair such that $w_s > w_i$, thereby needing to be inserted before $n + 1$ terms in the sequence S. We first note that replacing (C_i, w_i) with (C_s, w) will generate a sequence S' that—when used in conjunction with Equation 6—will produce a score greater than that produced using S, since $w_s > w_i$ and all other terms are the same. By the inductive hypothesis, (C_i, w_i) can then be re-inserted before the n final terms of S' while still preserving monotonicity.

Just read my text

- **Then why am I listening to you?**

- **Having too much to read can interfere with listening**
  - Did you know?
    Reading and listening exercise the same part of the brain

A picture is worth a thousand words
But only if you explain it!

- Don't leave a picture hanging there and expect your audience to interpret it

- If you have something on your slide that you don't explain, it is just **noise**.

60 - Monthly outgoing mail workload, millions of units

October 1968   October 1970   October 1972
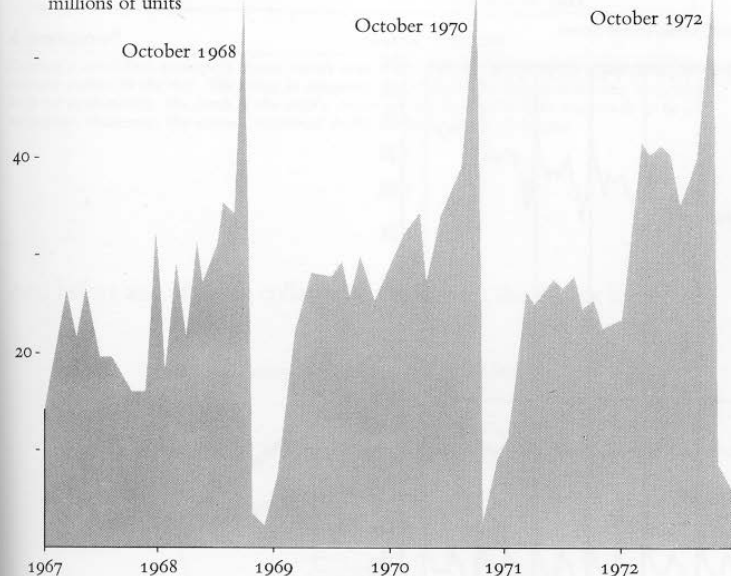
The graphic is worth at least 700 words, the number used in a news report describing how incumbent representatives exploit their free mailing privileges to advance their re-election campaigns:

A picture is worth a thousand words
But only if you explain it!

- **Put in graphical cues to focus attention**

- Actually point to the figure and explain

- Interpret the figure on behalf of the audience

60 - Monthly outgoing mail workload, millions of units

October 1968   October 1970   October 1972

Election year

40 -

20 -

1967   1968   1969   1970   1971   1972

Number of letters sent by congress.

The graphic is worth at least 700 words, the number us___ news report describing how incumbent representatives ___ free mailing privileges to advance their re-election campaigns:

FRANKED MAIL TIE TO VOTING SHOWN

Testimony Finds the Volume Rises Before Elections

WASHINGTON, June 1 (AP) —New court testimony and documents show that much of the mail Congress sends at taxpayer expense is tied directly to the re-election campaigns of Senate and House members. According to material filed in a lawsuit in Federal Court:

¶Senate Republicans put two direct-mail experts on the public payroll to advise them on how to use their free mailing privileges to get votes.

¶An election manual prepared for Senate Democrats refers to newsletters as a "free forum," and sets up a timetable for sending them as an integral part of a model re-election campaign.

¶Senator John G. Tower, Republican of Texas, mailed more than 800,000 special-interest letters at taxpayer expense as part of his 1972 re-election effort and received campaign volunteer offers and donations in response.

¶Senator Jacob K. Javits, Republican of New York, gave written approval in 1973 for a tax-paid mail program intended to better his image and pay off at the polls. He focused his mail on areas where he needed votes.

¶The volume of "official" Congressional mail rises in election years and peaks just before the general election.

None of this activity necessarily violates any law or regulation, since Congress has wide discretion in the use of tax-paid mail. Congress gave itself the right to send official mail at Government expense at the founding of the republic, and only Congress polices against abuses of the free mailings.

Complaints of political use of the free-mailing privilege, called the franking privilege, are heard every election year. Recently, however, the volume and cost of franked mail has multiplied. A new Federal law will limit what out-of-office challengers can spend to unseat incumbents.

In 1972, Congress passed a law prohibiting mass franked mailings within 28 days before an election. The sponsor of that legislation, Representative Morris K. Udall, Democrat of Arizona, said in an interview that further changes were needed to curtail political abuse of the frank.

Mr. Udall urged a 60-day pre-election cutoff for mass mailings and said he favored closing a loophole that recently allowed defeated Representative Frank M. Clark, Democrat of Pennsylvania, to send a franked newsletter to his old constituents after he had left office. Mr. Clark is seeking to regain his old post.

Practice Documented

Seldom has the political use of franked mail been so well documented as in recent testimony and documents filed in a Federal Court by Common Cause, the lobby group, which is suing for an end to tax-financed mass mailings by Congress.

For example, Joyce P. Baker, a political mail specialist, said in a 1973 job proposal that she wanted to set up direct-mail programs for Republican Senators using franked mail. "The purpose of such a program is to help an incumbent Senator get re-elected," she said.

She was put on the Senate payroll at $18,810 a year in 1973 and 1974 and testified that during that time she aided Republican Senators Robert J.
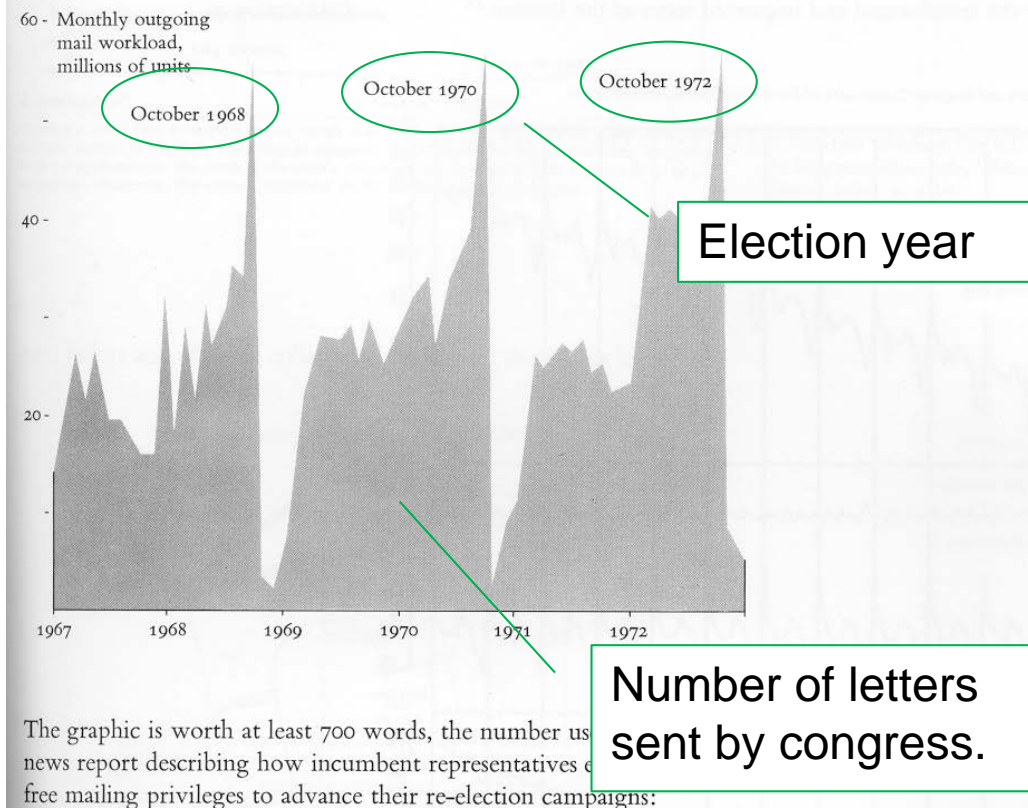
Dole of Kansas, Peter H. Dominick of Colorado, Charles McC. Mathias Jr. of Maryland

Another political mail specialist, Lee W. MacGregor, wrote a proposal for the use of franked mail by his chief, Senator Javits, in 1973.

"The over-all objective of the franked mail program can be to get the recipient of the mail to identify positively with a particular stand you have taken or a bill you have introduced; the kind of identification that can be translated into a vote at the polls on election day," Mr. MacGregor said.

Mr. Javits was out of the country and could not be reached. His administrative assistant, Donald Kellerman, defended the use of franked mail.

"It is a standard device to let voters, not voters but citizens, know what the Senator is doing here in Washington," he said.

Senator Tower's use of franked mail in his 1972 campaign was documented by memorandums.

Tom Loeffler, a high-ranking campaign aide, wrote in a memorandum dated Oct. 27, 1972, that during the campaign Senator Tower had sent "31 special interest letters totaling approximately 803,333 franked mailings."

Mr. Tower was not available for comment. His administrative assistant, Elwin Skiles, said the Senator's use of franked mail in 1972 was within the law, and he defended the free-mailing privileges.

Postal Service figures show that in the 12 months before November, 1973, Congress sent 222.9 million franked pieces of mail. But in the next 12 months, covering the election season of 1974, Congress sent 350.6 million, a jump of 57 per cent about what's happening," Mr. Skiles said.

Acronyms and jargons are useful
But only if you explain them!

- IMHO, ARE = ADIH. TBH, FUBAR & 2M2H.
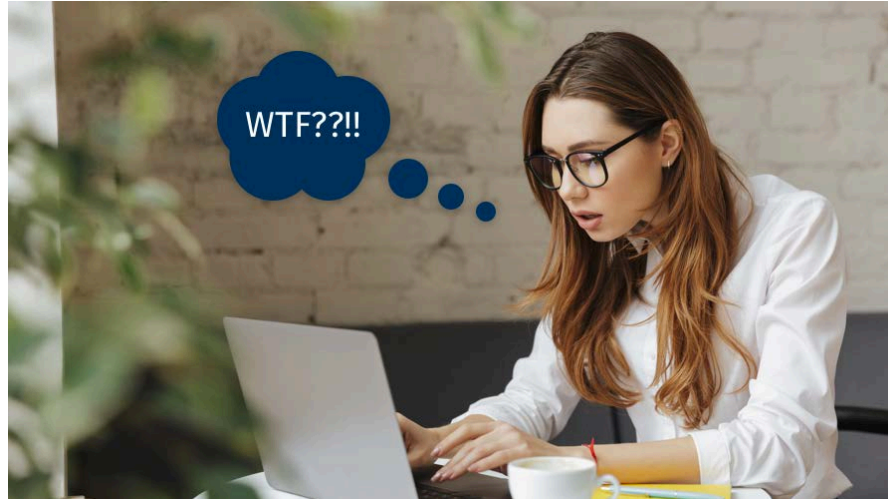
- Translated: In my humble opinion, an acronym rich environment is another day in hell. To be honest. Its f***ed up beyond all recognition and too much to handle.

Outline

- Why am I presenting in front of all these people?

- How to structure my talk

- Issues you want to avoid
  - Slide Design
  - Slide Delivery

It's not just *what* you say, but *how* you say it

Body language says a lot

- Make eye contact with your audience
  - *Corollary*: Face your audience
- Some movement is good
- Don't speak too fast (or too slow!)

Make useful slides

- One primary idea per slide
- Use slide titles to convey take-away message
- Do not read your slides!
  - But put all important information there!

Practice, Practice, Practice

- **Practice makes better**
  - *Alone*: Work on your "script," smooth out transitions
  - *Peer group*: Get used to other people being around
  - *Broader population*: Assess outsider comprehensibility

- **"Flash" is good, but too much flash is distracting**
  - *Good*: Animations to progressively build diagrams
  - *Bad*: Animating every slide transition, every line

- **Make sure you refer to every item on a slide**
  - If you don't, it is always better to remove that item

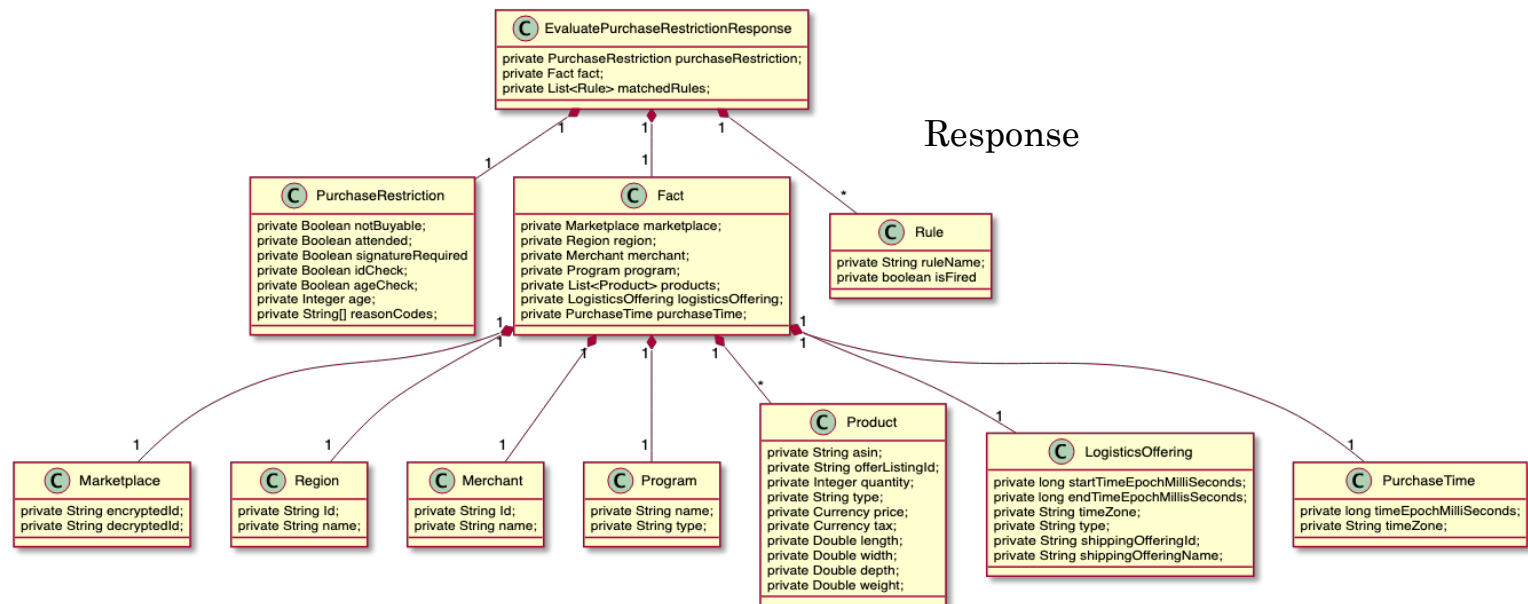It takes three weeks to prepare a good ad-lib speech
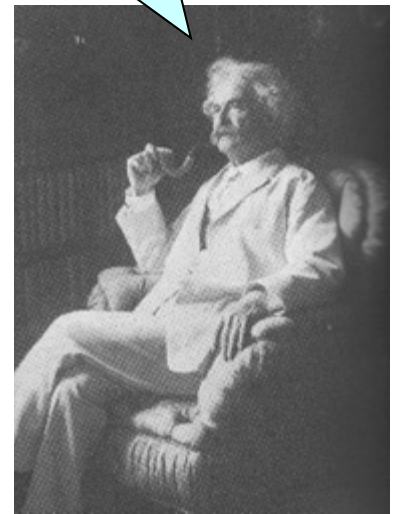
Let's Critique some Real Slides

From anonymous previous Capstone students

University of Pittsburgh

API With Purchase Document

Projects

Food and Beverage / Retail Software

Software: Android Studio

Server: MySQL

Worked on UI and worked to add functionality and new features

Fix bugs

Lib Project

Work on developing library that would send information to various hardware devices

Work with code on both sides to tweak it so it follows the specs

Actually released lib to other software houses for internal testing

Technologies

Project Overview

VersionOne Migration to Jira

Why?

- VersionOne is slower and inefficient
- VersionOne is more expensive
- Jira is compatible with other technologies that PNC uses
- PNC originally migrated from Jira to VersionOne manually, which resulted in the loss of images, conversations, and time.

Our Task

- Create a self service migration tool to automate the process
- Ensures that all information is carried in this migration process, such as conversations, images, etc.