What does *problem solving* mean in the real world

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From my experience ...

- 1977: BS, Mechanical Engineering., Indian Institute of Technology, Kanpur
- 1979: MBA, University of Maryland, College Park
- 1983-87: Manager/Partner, Meta Systems
- 1988-96: Director, Computer Sciences Corp.
- 1997-05: Partner, Accenture
- 2006-??: Ph.D. Computer Science (computational biology), Virginia Tech.

... problem solving ability is the single most important key to success
Your progress up the corporate ladder depends on the problems you’ve solved.

A typical IT organization:

- **Chief Technology Officer**
  - Corporate Banking
  - Consumer Banking
  - Credit Cards
  - Admin. Systems
  - Infrastructure

- **Your budget has been cut by 25%**

- **Online Systems**
- **Customer Service Systems**
- **Transaction Processing**
- **Security**
- **New Project**

- **Team of 5-15**

- **Account x doesn’t have the correct balance**

- **Implement cell phone banking by end of year**

- **We just bought another bank – merge in their systems & data**

- **ATM**

- **Backend Interface**

- **User Interface**

- **Backend Processing**

- **Data Processing**

- **Accountant**

- **VP of Finance**

- **Chief Financial Officer**
And it’s equally important for academic recognition and growth


Find a better (simpler, more accurate and faster) way to do biomolecular modeling

Find a better (faster) way to calculate the Boltzmann average
So what makes a good problem solver?

• Take full ownership – see the big picture
• Learn everything you can - about the problem and known solutions
• Break it down – into smaller easier problems
• Be persistent
• Follow through – implement your solution and prove that it works

And what do candy bars and pigeonholes have to do with this?
I hope the problem solving skills you learn in this class help you succeed in whatever career you choose.
Questions?