CSE 403

Software Engineering
Autumn 2012

September 24, 2012

Software Engineering

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- TA's: Megan Campbell, Tom Lehmann, Anton Osobov
- Class Twitter: **@uwcse403** // follow this account to get real time communication about this class, use **#uwcse403** hashtag
- Lectures (ARC 160): MWF 10:30a-11:20a
- Quiz Sections (Sieg 225): TTh 9:30a-10:20a (but....)
- Office Hours (CSE 458): MW 11:30a-1:00p, Th 10:30a-12pm, *by appointment*
- **http://www.cs.washington.edu/403**

This week

- Formulate project proposal and present it
- Reading
  - http://www.cs.washington.edu/403 (especially Project Milestones)
  - github: http://www.github.com
  - git: http://www.vogella.com/articles/Git/article.html
  - **Team Structure.** McConnell, Steve. *Rapid Deployment, Ch. 13.*

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What is software engineering?

A methodical and rati… for creating and …ware.

Process. People. Tools.

Predictable. Efficient. Rational.

“An engineer is a person who can do for a dime what any fool can do for a dollar”

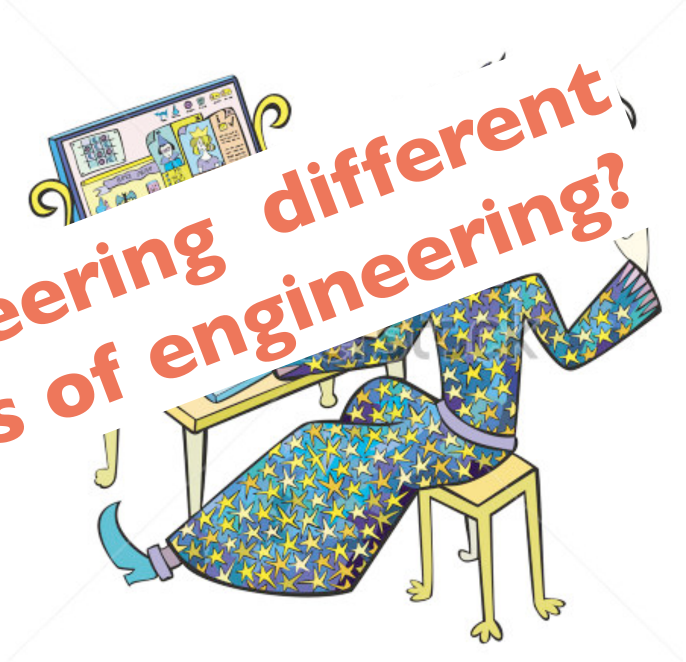
What is software engineering?

Magic.

“A mere matter of programming”

What is software engineering?

More like this...



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...or more like this?

Is software engineering different than other kinds of engineering?

What is software engineering?

A career.

How should you think about it today?
How will you manage it in the future?

What you should get out of this class

- An understanding of the fundamentals of software engineering
- Experience building a software project using software engineering fundamentals
- Useful “stuff” to help you as a software professional

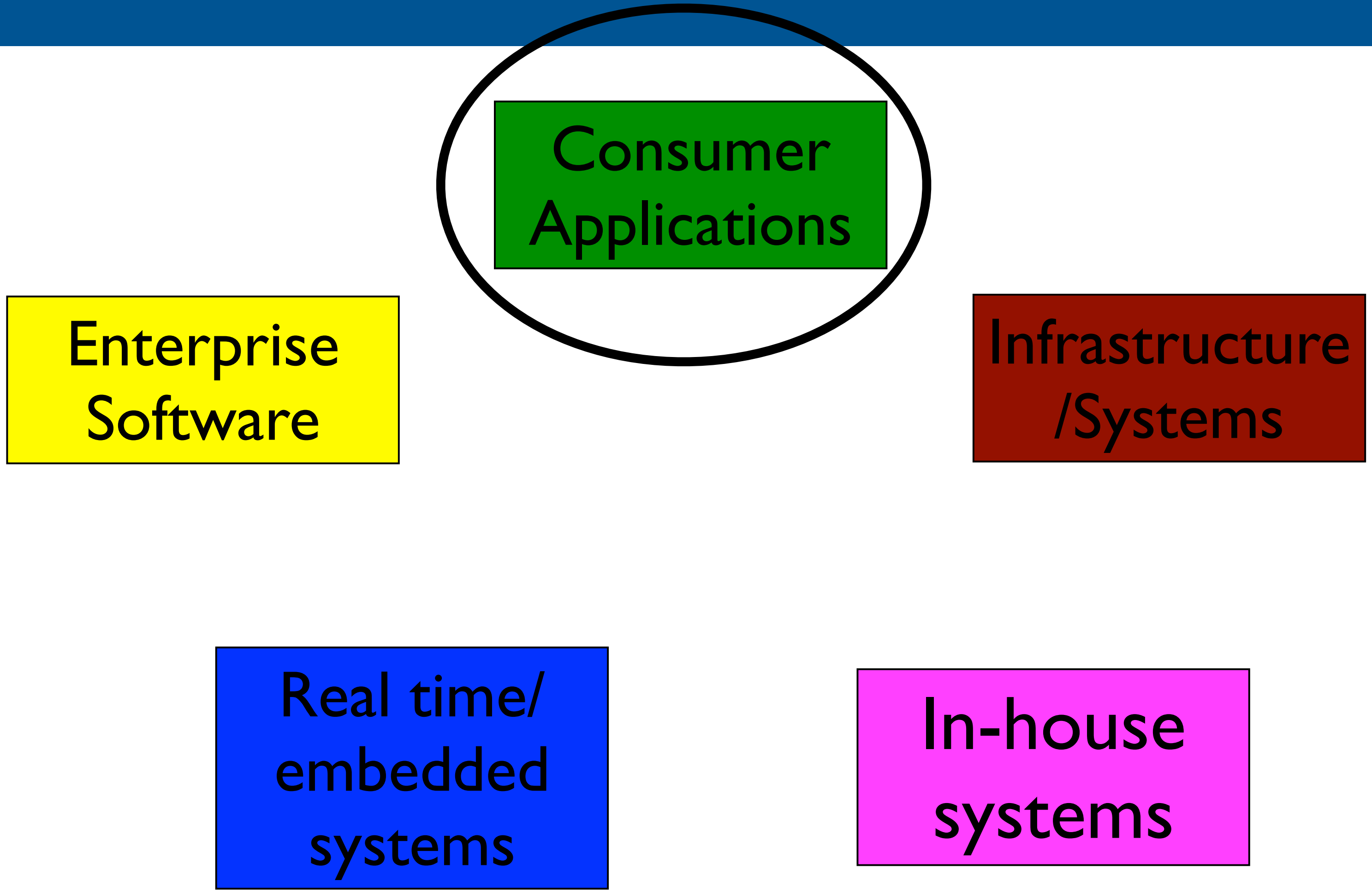
Grading

- Individual work (40%), including final exam
- Project work (60%)
- See website for details

Unique aspects of this class

- Cross disciplinary nature of the subject
- Larger-size teams
- Opportunity to propose and work on your own ideas
- Instructors and TA's in the "coach" role
- (Some) mistakes along the way are encouraged not penalized
- Few clear right/wrong answers
- Plans always change

Categorizing software



Consumer Applications

Enterprise Software

Infrastructure /Systems

Real time/ embedded systems

In-house systems

Consumer Applications

Enterprise Software

Real time/Embedded systems

In house

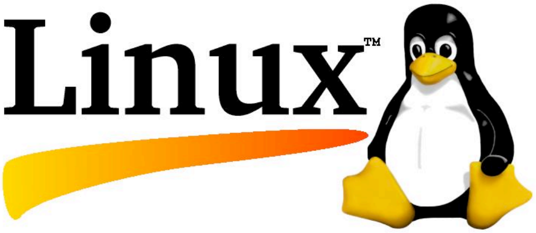
THE
HOME
DEPOT
®

IBM

UNIVERSITY · OF · WASHINGTON
LVX · · SIT
· 1861 ·

WELLS
FARGO

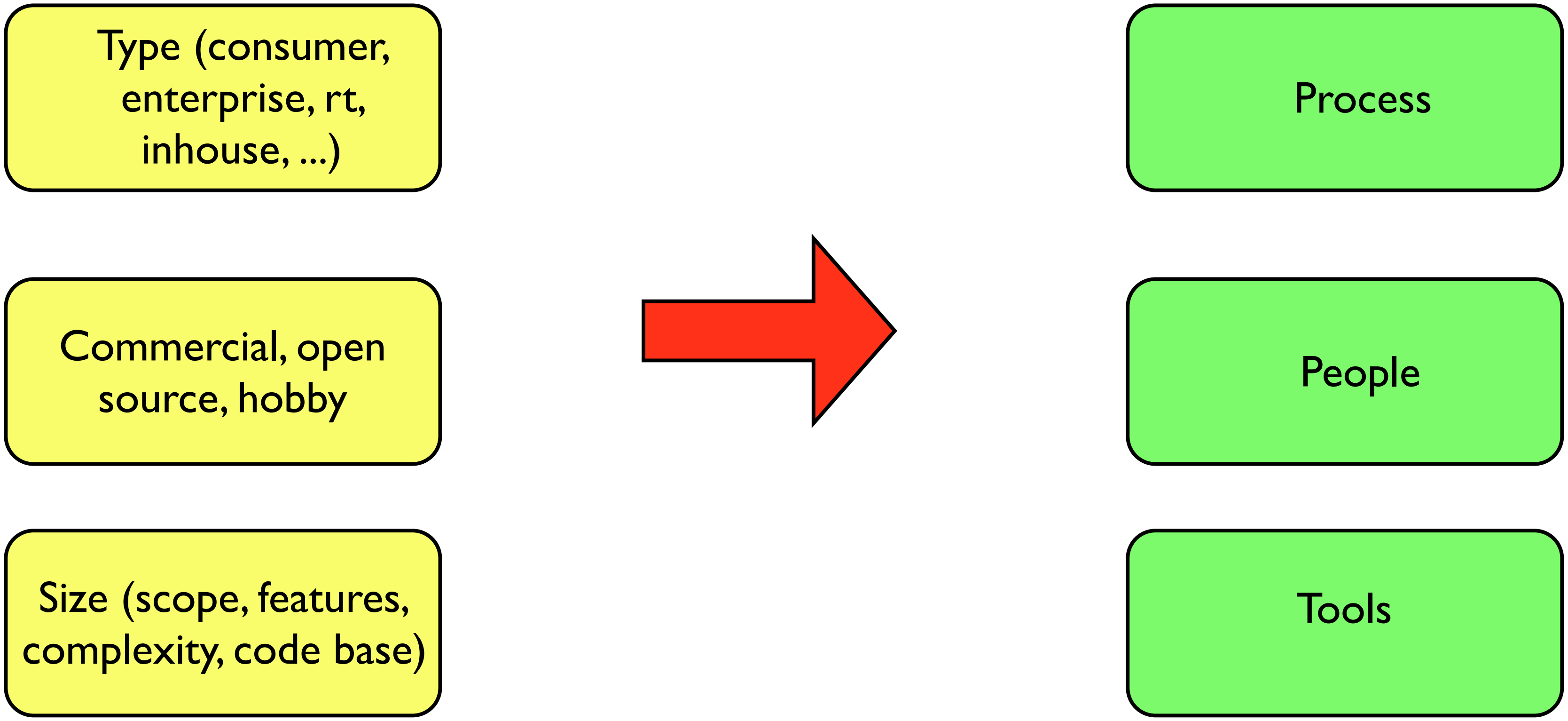
Infrastructure



Other factors affecting how you do software engineering

- What is the size/scope of the the effort?
- Commercial software or open source? A "hobby?"
- What's all ready in place?
- What you do today, might not what you do tomorrow, but....

These factors drive how you’ll *engineer* software



Type (consumer, enterprise, rt, inhouse, ...)

Commercial, open source, hobby

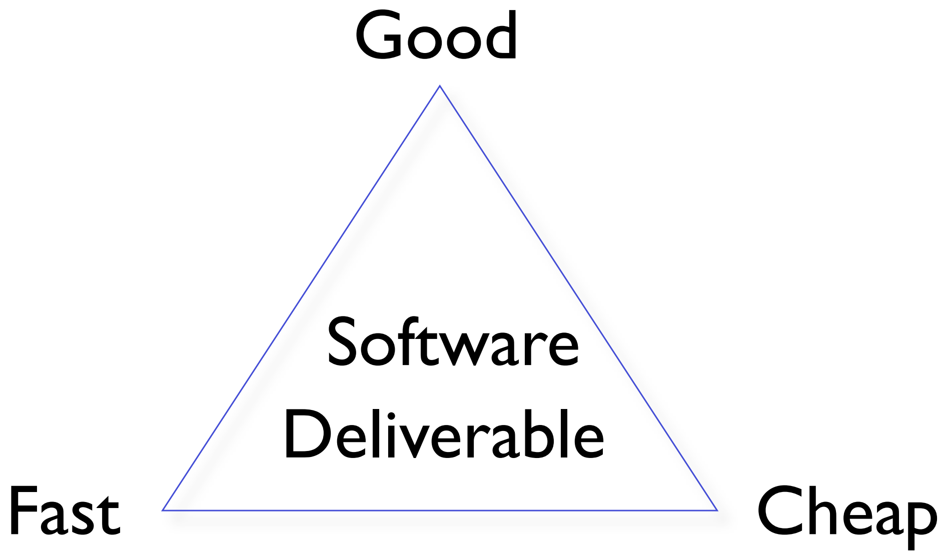
Size (scope, features, complexity, code base)

Process

People

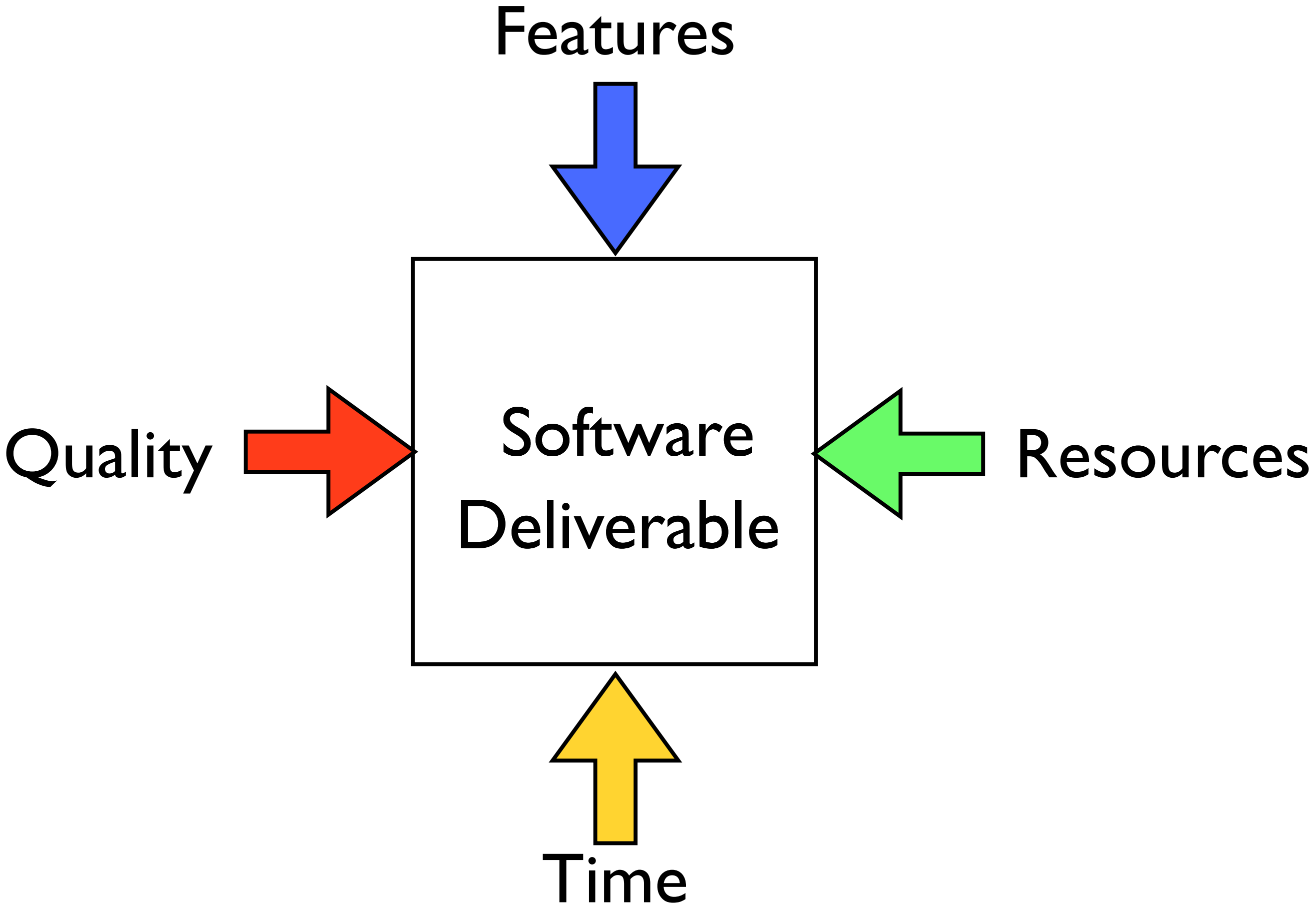
Tools

Software engineering is managing constraints



Choose 2...

Software engineering is managing constraints



Choose 3...(but this is a big lie, often told by mba types)

Software engineering is managing people conflicts

- Technical vs. non-technical
- Programmers vs. management
- Engineers vs. designers
- System programmers vs. web dev
- Executives vs. engineers

Class Project

Group project

- Build a software product from idea to deployment using software engineering principles
- Teams of about 7 people
- Deliverable in 10 weeks
- Encourage you to build a consumer web application, but....

This week...formulate an idea

- In teams of 3, make a proposal this Friday
- Vision, product proposal, architecture/tools proposal
- 3 minute presentation this Friday by one team member (4-6 slides)
- 1-2 page write up
- Not all ideas will become projects we execute
- Project groups will be finalized by Monday

Slide presentation (4-6 slides)

- Title page (name of project proposal, team members)
- What is your project (1-2 slides)
  - If 2 slides, 1 picture and 1 text description
- What is the Minimum Viable Product (1 slide)
- What is the technology stack (1-2 slides)
  - If 2 slides, 1 picture and 1 text description

Project hints

- Okay to have a project with a big vision
- ...but choose to execute on something small
- Getting your environment and processes in place is as important as a successful "working" product
- Know how much risk you are taking (i.e. don't take too much)
- Choose a consumer-facing web application?

What’s artificial?

- We’re learning about software engineering as we execute a project: process might be overkill
- Can’t simulate all aspects of software engineering
- Constrained by 10 weeks
- Overly focussed on engineering -- there are other external factors that impact a project