Try out Classroom Presenter

- Draw a self portrait in a box
- Pass to your neighbor to do the same
- Tap the envelope with wings to submit
First – classic mistakes

Most popular in Sp06 403:

- 11 feature creep
- 7 overly optimistic schedule
- 7 inadequate design
- 7 abandonment of planning under pressure
- 4 wishful thinking
- 4 silver-bullet syndrome
- 4 overestimated savings from new tools/methods
- 4 lack of user input

Thanks, Erika!
Second – a quick look ahead

- We have two *yes two* guest speakers next week:
  - Monday
    - Asaph Zemach, Google
  - Friday
    - Wayne Yamamoto, Merchant Circle – Internet startup

- Please attend and use this as an opportunity to “see inside” some other successful companies!
- Attending both = 1% of your participation grade
## Looking ahead - due dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self/Peer Reviews</td>
<td>Sunday May 14th</td>
</tr>
<tr>
<td>Beta Feedback Meetings</td>
<td>TBD – next Wed/Fri</td>
</tr>
<tr>
<td>Essay 2</td>
<td>Sunday May 21st</td>
</tr>
<tr>
<td>Final Release</td>
<td>Tuesday May 30th</td>
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</tbody>
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Estimation

What to say when asked for an estimate

“I’ll get back to you”

Pragmatic Programmer
Outline

• Why are we talking about estimation?
• Mariner’s scenario - what’s your estimate?
• 15 deadly sin’s of estimation
• What’s your estimate now?
Readings on Estimation

- “Pragmatic Programmer”, Hunt and Thomas
  - p 64-69

- “Rapid Development”, Steve McConnell
  - Chapter 8, Sections 1-4

Deadly sins material adapted from

CSE 403, Spring 2006, Alverson
Why are we talking about estimation?

- In my experience, it’s REALLY hard for engineers to give estimates

- You WILL be asked for them. Saying “it’ll be done when it’s done”, isn’t helpful

- BAD estimates can be bad for you, the team, the company, the customer

- Let’s learn some skills and context to help answer the estimation questions better
With your 403 projects

- Has anyone been tracking
  - Estimated (target) completion
  - Actual completion

What’s been your experience with hitting your estimates?
Estimation Scenario

It’s June 1st in Seattle. You have a team of 4 developers, Reggie, Archie, Betty, and yourself. Marketing has asked you to create a system to manage Mariners souvenirs at Safeco field. You need a GUI, as well as way to enter and update inventory. Low inventory needs to be flagged. When can your team deliver?

Student Activity

YOUR ANSWER

Delivery date:

Factors:
How do you create an estimate?

What method did you use just now?
How do you create an estimate?

Some ideas:

- **Estimate pieces** of the project, then add the pieces together
- Refer to estimate data from **previous** projects
- Use an **algorithmic approach** based on lines of code, or number of functions
- Use **scheduling software**
- **Involve more people**, or outside experts in the project estimate

*Refine your estimate as you get further in development*
15 Deadly Sins of Estimation

Can you imagine these happening?

Estimating how long “it” will take to build before anyone knows what “it” is
Mariners system

Was “it” a beta release or a final release that you were estimating delivery of?

Circle your answer and submit:

- Beta
- Final

Student Activity
Deadly Sin #2

Assuming that the most reliable estimates come from the people with the most powerful vocal chords

You’re going to be doing a group estimate later today – beware! 😊
Deadly Sin #3

Creating an estimate for a new project by comparing it to a past project …
… which overran its estimates…
… and ultimately realizing that you based the new project’s plans on the past project’s *estimated results* instead of its *actual results*
Deadly Sin #4

Assuming that the sales department is better at estimating software projects than the programmers are.
Deadly Sin #5

Creating estimates that assume that no one will go to training ...
- or attend meetings ...
- or be called to work on another project ...
- or need to support a key customer ...
- or take a vacation ...
- or get sick ...
- or ...

A week of development effort may not equal a calendar week
Deadly Sin #6

Creating estimates that assume that no one will go to training ...
- or attend meetings ...
- or be called to work on another project ...
- or need to support a key customer ...
- or take a vacation ...
- or get sick ...
- or ...

How would you deal with this when estimating?

A week of development effort may not equal a calendar week
Mariners system

- Newsflash! Archie’s adoption came through, and he’s on paternity leave for a month!

- You’re down to 3 developers for that time.
Deadly Sin #7

Presenting estimates with a high degree of precision ("67.4 days") that are supported by only a low degree of accuracy ("±2 months")

General rule of thumb, if the project takes days, estimate in days, if takes years, estimate in years, etc.
Mariners system

What unit did you use for your Mariners system estimate?

Circle your answer and submit:

- Days
- Months
- Years

Student Activity
Deadly sin #8

Consider all engineers to be created equal
Newsflash! Reggie is a 12th grade intern, working with you until September.
Newsflash! You got promoted to chief architect! Congratulations, but now you need to spend 25% of your time on other projects.
Deadly Sin #9

Providing the most optimistic estimate

• Estimates are often taken as commitments
• Best to bound your estimate with a probability, a level of confidence, or a confidence interval
Deadly Sins #10-15

- Overestimating savings from new tools or methods
- Using only one estimation method
- Not including risk impacts into estimates
- Not anticipating customer changes or not discussing the tradeoffs when they occur
- Providing “off-the-cuff” estimates
- Being overly conservative

Why?
Mariners system

Marketing wants an additional feature to measure profit/loss and to identify which items are the “big winners”
Summary

- Getting an accurate estimate is hard!
- But we need estimates to avoid surprises and to coordinate with others
- Try to avoid deadly sins … these are just the tip of the iceberg (sadly)
Mariners System

It’s June 1st in Seattle. You have a team of 4 developers, Reggie, Archie, Betty, and yourself. Marketing has asked you to create a system to manage Mariners souvenirs at Safeco field. You need a GUI, as well as a way to enter and update inventory. Low inventory needs to be flagged. When can your team deliver?

- Archie is on leave for a month
- Reggie is a 12th grade intern, available until Sept
- You got promoted to chief architect, and have to spend 25% of your time on other projects
- Marketing wants a additional feature to measure profit/loss and which items are the “big winners”
- When can you deliver the FINAL release?
Mariners System – your estimate

Delivery date:

Factors:
One-minute feedback

What one or two ideas discussed today captured your attention the most?