CPSC 491

Lecture 11: Estimation (cont) Planning

From Last Time

- Estimation for project planning
- Using story points versus dev days or dev hours
- Estimating a backlog in story points
- Story-points to hours approximation
  - Take a reference story estimated at story points $p$
  - Estimate how long story will take to finish in time $t$
  - Thus, the ratio $p:t$ can be used to estimate backlog in time

Today: More on estimation … incl planning poker & velocity
**Planning Poker**

Everyone has a deck of planning poker cards

Each card has a number (story points, dev days/hours)

- Note: effort implies **design**, **code**, **test**, and **deliver**

What is meant by:
- 0 ...
- ? ...
- coffee cup ...

What’s with the seq?
Exercise

Try out planning poker for story points….
- Find a 1-point “reference” story
- Estimate 2 other stories based on the “reference” story

Try planning poker for hour estimates …
- Determine consensus hour estimates for 2 stories

Estimates (cont)

Estimate
- prediction of how long a project will take
- at a certain cost, scope (and quality) level

Target
- like an external (business) objective
- “We need version 2.1 ready for a trade show in May”
- “We need the release before the holiday sales cycle”

Commitment
- a promise to deliver product by a specific date
- also can include specific scope, cost, and quality
When things go wrong ...

Targets vs Estimates
- may be the same, more aggressive, more conservative
- useful to know! … e.g., change scope, hire more devs

Problems arise when there is a **large gap** between ...
- the commitment and the estimate!
- specifically commitment << estimate

When is a gap okay?
- depends on the project
- e.g., if \( \leq 20\% \) of each other (to adjust scope, …)

We want estimates that we are **confident are accurate**

“This process is called estimation, not exactimation” (Armour)

Estimates often “single-point” numbers (e.g., dev days)
- suggests both high accuracy and confidence

Estimates have inherent uncertainty
- better to think of as ranges and/or confidence levels
- rule of thumb: aim for “**90% confidence**” in estimates
  - e.g., range big enough to get 9/10 stories right on avg
Exercise: Redo your user story estimates (use planning poker)

1. Make a “best case” estimate (min possible time/points)
2. Make a “worst case” estimate (max possible time/points)
3. Make a “most likely case” estimate (under “normal” conditions)
4. Your “expected case” estimate (avg over long run … 50% conf.)
   
   Expected = (Best + (4 x MostLikely) + Worst) / 6
   
   ... from Program Evaluation & Review Technique (PERT)