Agile Estimation
(Planning Poker)

“No plan survives contact with the enemy”

Field Marshal
Helmuth Graf von Moltke
Prussia (later Germany)
Years of service: 1822-1888

Project Planning – Basic Questions

1. What am I getting?
2. When will I get it?
3. How much will it cost?

A good plan is one that supports reliable decision making
"The plan is nothing; the planning is everything"

- Dwight Eisenhower
- Allied supreme commander during World War II
- 34th President of United States (1953-61)

**Project Planning**

Cost (Budget)  Time (Schedule)  Functionality (Scope)  Business Value

The Project Triangle
Planning

“A good plan violently executed now is better than a perfect plan executed next week” –

General George S. Patton

Estimation Accuracy

Accuracy

Effort
Project Scheduling

- Identify tasks
- Estimate tasks
- Allocate resources to tasks
- Schedule tasks
- Define product delivery schedule

How Long Will it Take?

- To read the latest Harry Potter book?
- To drive to Niagara Falls?
- To do your calculus homework?
**Size & Duration**

- **Size**
  - Lines of Code (LOC)
  - Distance
  - Words

- **Duration**
  - LOC/ Hour
  - Speed
  - Words/Min
  - Hours
  - Days
  - Weeks
  - Months

**Answering the Right Question**

- Size = 80 Java source lines
- Rate = 10 Lines/Hour
- Duration = ??

Ideal time = 8 hours

There are 40 hours in a work week, so the task will be completed on Monday!

but – On Mon/Tues there were three hours of meetings, two hours of emails and three hours of field support

Elapsed time = two days
Velocity

Ideal Time (8 hrs) \[ \frac{\text{Velocity (0.5)}}{\text{Elapsed Time (16 hrs)}} \]

Agile Estimating

- Estimate by analogy
  - Compare features or “stories” being estimated with one another.
  - “This story is a little bigger than that story”
  - aka Triangulation

- Evidence that we are better estimating relative size than absolute size

- Unit-less estimates also known as “story points”
Assign “Dog Points” to these breeds:

- Labrador retriever: 5
- Dachshund: 1
- Great Dane: 10
- Terrier: 3
- German Shepherd: 5
- Poodle: 3
- St. Bernard: 9
- Bulldog: 3

Planning Poker

- Wideband Delphi Technique (circa 1946)
- Allows groups to quickly reach consensus
- Everyone’s voice is heard
- Exposes important project questions
- Emphasize relative estimation
Playing Poker

- One member of the team reads the feature story to be estimated
  - “Customer logs in to the reservation system”
  - “Customer enters search criteria for a hotel reservation”

- Each member selects a card without revealing their estimate (1,2,3,5,8,13,20,40)

- Cards are simultaneously displayed

- High and low estimates are explained, short discussion ensues

- Repeat as needed until estimates converge

Planning poker - an example

<table>
<thead>
<tr>
<th>Estimator</th>
<th>Round 1</th>
<th>Round 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Susan</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Vadim</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Ann</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Chris</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>
Remodel Your Room

- Install ceiling fan in existing electrical fixture
- Hang three shelves
- Paint four walls
- Paint trim
- Replace broken glass in window
- Paint ceiling
- Hang four posters
- Set-up desktop computer and monitor
- Shampoo carpet
- Hang plasma monitor
- Install door lock
- Assemble new desk

Velocity

- Relative estimates for each story
- Customer identifies priority
  - Each completed story has a business value
- Developers identify dependencies
  - Shampoo the carpet after painting
- Run the first iteration (two weeks), determine how many stories were completed.
- The total of story points is the team’s velocity
Back to Planning….

Stories (features)

# of Iterations = Total Story Points / Velocity

Scrum Planning….

Product Backlog

# of Sprints = Total Story Points / Velocity
Important caveats

- Successful projects deliver **working software** frequently that gives the customer business value.

- The project schedule is reviewed after each iteration and velocity is updated as needed.

- The agile approach requires a big commitment on the customer’s part to provide details for each story.

- Other planning techniques exist. Learn about several approaches and pick the one that best fits your project’s needs.