CIS 422/522

Project Review Comments
Group Dynamics
Documentation Principles

WHAT GROUP PROJECTS ARE SUPPOSED TO TEACH YOU — COMMUNICATION, RESPONSIBILITY, COLLABORATION, TEAMWORK

WHAT GROUP PROJECTS TAUGHT ME — COMMUNICATION, RESPONSIBILITY, COLLABORATION, TEAMWORK, TRUST NO ONE
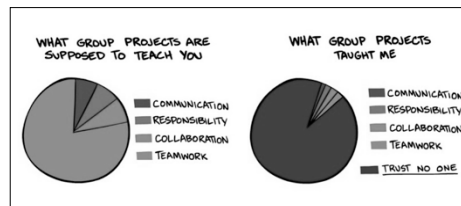
1

Project Review Comments

- Look at examples and other team's work to gauge your progress
- Sanity check: are we demonstrating an understanding of class materials?
  – Look at grading criteria
  – Review each other's work including those criteria
- Individual contributions: make sure each team member has concrete contributions
  – Developer logs should point to these

Changes to Use Cases

- Conflict between Wed. lecture and template
- Follow the Wed. lecture as more consistent
  – Use cases should focus on objectives rather than mechanisms (what not how)
    • E.g., "the moderator selects the MajorityVote" rather than "moderator left-clicks the MajorityVote radio button"
  – Put these Use Cases in the ConOps portion of the Requirements page (section 2 not 3)
  – Use section 3 for precise, technical requirements

QA Plan Examples

- Validation
  – Review customer input, identify assumptions, areas of incompletes, clarification questions
  – Develop Use Cases
    • Document in ConOps (or other)
    • Customer review
    • Revision
    • Customer signoff (i.e., written agreement)
    • Repeat for changes
- Verification
  – Define acceptance tests base on UCs
  – Define additional boundary and quality testing
  – Define module tests

Teamwork

Project and Professional

What is a project team?

- Members of the project team make all the decisions going from problem to solution
- Intellectual control - making correct decisions about:
  - System requirements, system structure (decomposition), interfaces, detailed design, etc.
  - Realizes the functional and quality requirements
- Managerial control - making effective decisions about:
  - Overall budget and schedule, allocation of people to tasks, tasks to time, when tasks are complete
  - Realizes requirements for on-time and budget delivery

What is a Great Team?

- Diverse Skills
  - People skills, management skills, communication and writing skills, design skills, implementation skills
- Coherence
  - Shared expectations
  - Ability to build and work toward a shared vision
- Mutual Respect and Responsibility
  - You don't *have* to like each other, but you *need* to trust and respect each other — and to earn your teammates trust and respect
  - This is an enduring part of professionalism in the real world

Roles and Responsibilities

- Roles should reflect *ownership of responsibilities*
- Each role is responsible for specific activities and artifacts
  - Manager: responsible for schedule
  - Tester: responsible for test plan, unit testing
- A person in the role *owns* the corresponding artifacts
  - Does not mean he/she does all the work
  - Does mean he/she is responsible for artifact's completeness and quality
- *Project Risk*: failure to be specific about individual responsibilities and holding people accountable
  - One of the most frequently cited project problems

What do software developers do?

- One way to measure: how do they spend their time?
- IBM study (McCue 78):
  - 50% team interactions
  - 30% working alone
  - 20% not directly productive

i.e., Technical excellence is not enough

"Egoless" design

(Weinberg, Psychology of Computer Programming)

- Investing ego in group
- "Letting go" of ego investment in code, design, ideas
  - No winning or losing design debates
    (focus on improving the product)
  - Once contributed, ideas and artifacts belong to the group
  - Criticism is aimed at artifacts, not people
- The best designers criticize their own designs!
  - Our own assumptions are the hardest to critique
  - Corollary: A good critic is your best ally
    - The hardest lesson to learn but one of the most valuable

. . . but we are not egoless people

- Ego investment is normal
  - be aware of it, be in control of it
- Consider the egos of others
  - What are you attacking? Why?
  - What is motivation of the other person?
    - Are they feeling ignored? Not valued?
- Pride in accomplishment is ok, unless it interferes with accomplishment

Consensus decision making

- Consensus is not counting votes
  - Democracy is 51% agreement
  - Unanimity is 100% agreement
- Consensus is neither
  - Everyone has their say
  - Everyone accepts the decision, even if they don't prefer it
  - It is "buying in" by group as a whole, including those who disagree
- Usually best approach for peer groups

Consensus takes time and work, but is worthwhile

Conflict

- Can be healthy and productive
- Can destroy a team if not carefully managed
- Manage conflict constructively
  - Soothe and protect egos
    - Everyone's job, but especially the manager's job
  - Keep conflict on a technical level (not personal)
  - Reward conflict resolution
- If team really cannot reach resolution, talk to instructor

Being a Good Team Member

- Attributes most valued by other team members
  - Dependability
    - When you say you'll do something, you do it
    - Correctly
    - On time
  - Carrying your own weight (doing a fair share of the work)
  - People will overlook almost everything else if you do these
- Also part of your grade
  - Collect from peer evaluations, blogs, etc.
  - Can significantly raise or lower project grade

A Word on Managing

- A good manager supplies what is needed for the team to succeed. This includes (but is not limited to)
  - Resources
  - Planning and coordination
  - Pitching in when needed
  - Protection (especially from upper management)
  - Emotional support, etc.
- Good managers are are leaders not dictators (especially true for *peer* teams)
- Good managers are rare

Effective Meetings

Notes on effective meetings

- Only hold meetings if <u>necessary</u>
  - "Necessary" means that the most cost effective way to accomplish a goal is by meeting
- Have a goal, and a plan (agenda)
  - Clear meeting objectives
  - Known to all in advance (I.e, distribute via email)
- Plan to goal:
  - Participants - Invite only the necessary people
  - Schedule
  - Intended outcome
- Prepare
  - Cost of wasted time = Time x people x hourly cost
  - Cost of individual prep time is much less

Notes on effective meetings (2)

- Start on time, end on time
- Write down and disseminate the results
  - Leaves an audit trail of decisions
  - Makes people feel included
  - Limits the number of (informational) invitees
- End with concrete, specific action items
  - What must be done
  - Who should do it
  - What the follow-up is

Questions?