Administrivia

✔ Contextual Inquiry assignment due today at end of class.
Teams

✔ “A team is a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable.” - K&S

✔ Unpacking this statement...
Teams: Small numbers

Two problems arise when teams get too big:

* Centralization: a few people dominate, and several hardly contribute at all
* Communication: the overhead for communication goes up with the number of people
Team size

✔ Team sizes vary of course. For CS160-style project work, it seems like 4-7 is the ideal range.
Team Size: Brooks Law

✓ In the “Mythical Man Month”, Fred Brooks observed that per-programmer productivity in teams decreases with size of the team.
✓ This is often called “Brooks Law” (programming teams are less than the sum of their parts).
Team Size: Communication

✔ Sproull & Kiesler studied team programming in courses at CMU and found:

✔ Teams that did more communication by email rather than in face-to-face meetings were more productive. Teams with only F2F meetings were less productive.
Team Size: Communication

- Sproull and Kiesler’s work reinforces the idea that communication impacts group effectiveness.

- Email is good for routine coordination and communication.
Common Purpose

✔ Sense of purpose is a big part of team success.

✔ K&S: Set measurable performance goals
Goal setting

✔ Defines specific work products
✔ Facilitates communication and constructive conflict
✔ Attainable: maintain focus
✔ Leveling effect: focus on task rather than status
✔ Defines small wins as part of the larger purpose
✔ Goals are compelling
Common purpose

✔ Common purpose is helped by group affinity (people liking each other), but that is not necessary.

✔ Common purpose can also be achieved by interdependence (group members evaluated and rewarded together).
Communication again

✔ Face-to-face meetings are a good way to:
  ✔ Create and foster common purpose
  ✔ Resolve conflict

✔ Email and phone are good for
  ✔ Routine communication and decision-making
  ✔ Coordination, reporting
Constructive Conflict

✔ Sometimes, groups strive for harmony and strong consensus.

✔ Generally speaking, the better the group feels about a decision, the less effective that decision is. (groupthink)

✔ Good decision-making involves resolution of differing viewpoints - constructive conflict
Conflict and Creativity

✔ In fact the most effective generator of creativity in a group is an authentic dissenter:

✔ Someone who is credible and who genuinely disagrees with the rest of the group.

✔ Some groups use “devil’s advocates” for this reason. They’re not as effective.
Conflict and Creativity

✔ The key to constructive conflict is to focus on the task, and on individual ideas.

✔ Ideas and opinions must be detached from the individual.

✔ Ideas have to be clarified and developed before they can be criticized.
Team membership

✔ Skills:

✔ Technical/functional (experts)

✔ Problem-solving/decision-making

✔ Interpersonal skills
Interdisciplinary teams

✔ Communication on the programming team was a problem. For the interdisciplinary team, it is a big problem.

✔ Teams often depend on “gatekeepers” or facilitators with interdisciplinary skills and vocabulary to help team members understand each other. The differences are:

✔ Vocabulary, Meaning, Purpose
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Building teams: Urgency

✔ Establish Urgency
✔ Purpose is worthwhile
✔ There is a clear way to move ahead
Building teams: Select for Skill

✔ Manager should choose team based on skills of members, and potential skills.

✔ Should personality be a factor?... stay tuned.
Setting rules of behavior

✔ E.g. no phone calls in meetings
✔ no sacred cows
✔ one conversation at a time
✔ encourage wild ideas
✔ no finger-pointing...
Set a few immediate goals

✔ Make them performance-oriented

✔ When results occur, the team starts feeling like a team
Bring in fresh facts and ideas

✔ Fact: teams do not share enough information (Hinds 199x).

✔ Regular updates and exchanges are much more valuable than they seem.

✔ This builds a sense of community and common knowledge.
Spend time together

✓ Casual or “unstructured” interactions are very important for building shared context.

✓ Putting people in the same space is the best way to do that.

✓ Recreating this online is a bit of a challenge.
Positive Feedback

✔ Don’t miss an opportunity to reward or encourage legitimate effort.

✔ Positive reinforcement encourages more effort and performance beyond expectations.