Working in Groups

CSE 331, Spring 2011
Section 9

What this *is*

- A collection of our personal experiences & observations from working on group software projects
    - (Capstone classes, software engineering projects, internships)
- Maybe some advice

What this is *not*

- A definitive guide to everything that could go wrong (or right!)
- A replacement for the valuable things you will learn struggling through your own group project(s)
    - There's nothing like first-hand experience!

The beginning of a project

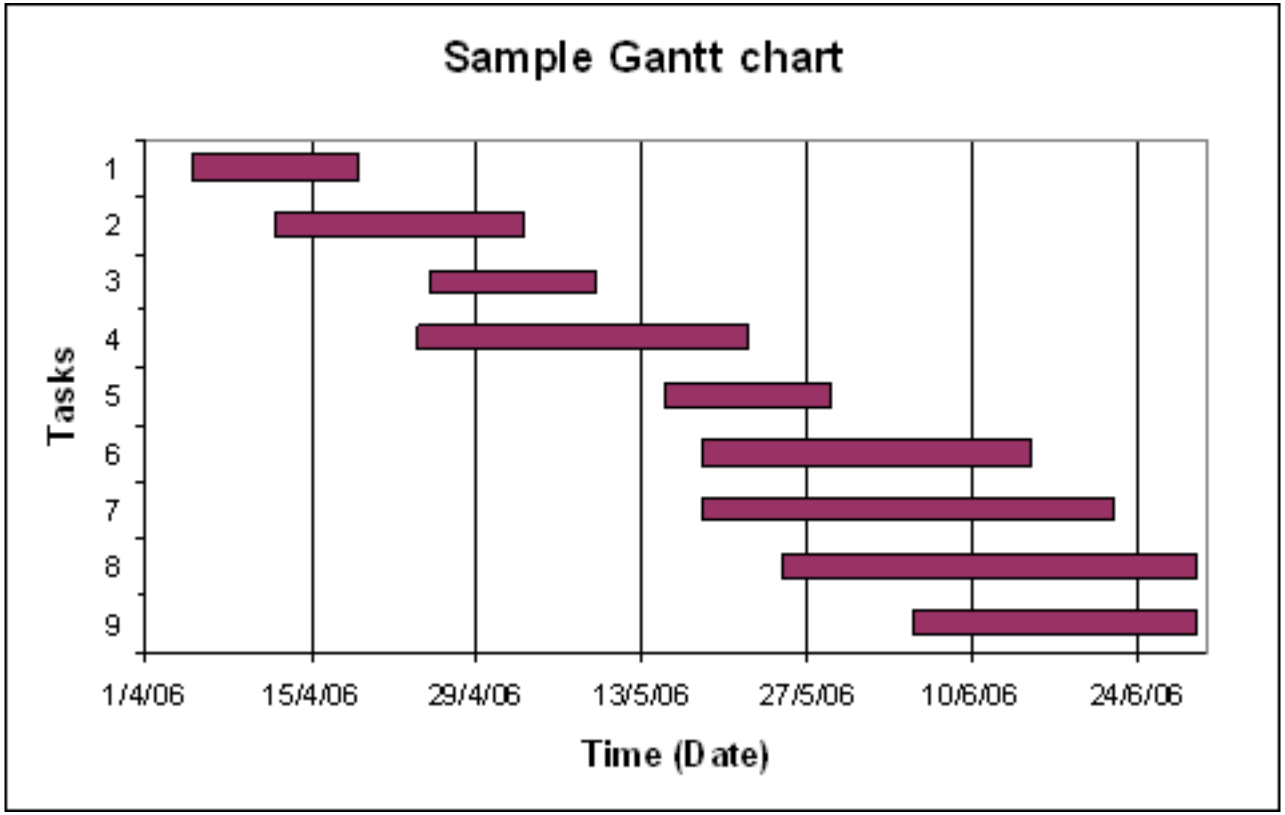
- The most important part!!

- Early decisions about the program structure / architecture will have a big impact later, so consider them carefully

- Early investment in the development "infrastructure" will pay off as the project gets larger
    - setting up a source code repository
    - scheduling meetings
    - deciding group roles / dividing up responsibilities
    - setting up automatic building & testing
    - coming up with a development plan
    - defining the interfaces / interactions between parts of the program

How to divide your project into tasks

- Try to avoid one member's tasks depending on the completion of another member's tasks



Dividing up tasks

- Give everyone a specific task
  - This way nobody gets confused about what they are supposed to do

- Write down who is doing what task and give the list to all group members
  - Forgetting what you agreed to do is not an excuse

Set mini deadlines

- Help you keep on schedule
- Demonstrates your progress to the rest of the group

Meet in person!

- Meet with your group, do not leave all contact to email

- Sit down and talk about the overall goal, and do the high-level design together.
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- It is not necessary to hammer out every last detail, but sketch out the interfaces so you know how each piece interacts when you split up the work

    - Once you have defined interfaces, try not to change them!

Pair programming

- Interesting/useful for particularly complex feature.
  - One person will 'drive' and the other will act as a second pair of eyes, catch things the other misses and offer alternate approaches

EXTREME PROGRAMMING
THE TWO OF YOU WILL BE A CODE-WRITING TEAM.
scottadams@aol.com
www.dilbert.com
STUDIES PROVE THAT TWO PROGRAMMERS ON ONE COMPUTER IS THE MOST PRODUCTIVE ARRANGEMENT.
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SOMETIMES I CAN WHISTLE THROUGH BOTH NOSTRILS. I'VE SAVED A FORTUNE IN HARMONICAS.

Communication with group members

- Once you've divided up responsibilities, a lot of your communication will be about the interaction between your parts of the project
    - One reason to keep the interfaces / interactions between parts of the program simple

- Consistency is very important
    - It takes a lot of time and energy to communicate "unusual" nuances of your interface
    - Better to just keep things consistent

Disagreements

- Disagreements happen all the time
  - A normal part of the design process
  - It doesn't mean your team is "dysfunctional" or "failing"

- Try not to take it personally!
  - They're not attacking you - just explaining a different perspective of a complex problem
  - Think of disagreements as opportunities to learn

- At some point, you need to resolve your disagreement and get back to work
  - An arbitrary decision is better than being stuck forever
  - Have a plan for resolving disagreements, e.g. "after X minutes of debate we will take a vote" or "flip a coin"

Now, your turn!

Yahtzee project discussion (part 1 / 4)

The actual program

- What have you done so far?
- What do you expect to have done by Saturday?
- What extra feature(s) are you thinking of adding?
- What has been the trickiest technical part? (*Besides* SVN and design decisions)

Yahtzee project discussion (part 2 / 4)

The development process

- What's your development strategy?
    - What code did you start working on first?
    - What are you saving for later?
- How are you developing the code?
    - Pair programming? Solo?
- Something that you like about your work / design so far?

Yahtzee project discussion (part 3 / 4)

Working in a group

- How is your group organized?
  - Roles? Functionality?
- Any team issues or challenges you didn't expect?
- How are you handling problems / code conflicts / disagreements?
- Best / worst thing about group work so far?

Yahtzee project discussion (part 4 / 4)

Questions

- Questions about the design of this project? (Or your particular design?)
- Questions about requirements or features?