ECE 1778:
Creative Applications for Mobile Devices

Lecture 6

February 15th, 2011

Today

1. Logistics
2. Assignments
3. Project Planning and Execution
4. Plan Discussions

Logistics

Schedule

- There is a lecture next week – Feb 22
  - Grad classes do continue in reading week!
- There is **no** lecture the subsequent week – March 1
  - I'm away at a conference

Project Eventline

1. Forming Groups
2. One-Page Proposal
3. Design Plan
4. **Plan Presentations**
   - This week and next based on submitted document;

4.5 Initial Working App – Spiral 2

   - exemplar of Spiral/Agile/Incremental method
   - March 8th (more on this later)

5. **Final Presentations**
   - Weeks of April 5 & 12 - REVISED
6. **Final Report Due April 12th - REVISED**

Assignments

Assignment P3 & A3 Due Thursday

- Extension given to alleviate time pressure
- Any issues?
  - Apologies on the mention of accelerometer & Camera in Apper A3 assignment, that was a mistake

Assignment P4

- Threads, Internet Files and Databases
  - Read a file from an Internet
  - Emit searches on Google for the names on the thread, and display one by one
  - Use threads (separate processes) to do the separate tasks.

- Due in two weeks – March 1
  - No class that day.

- This is the last assignment, there is no P5

Assignment A4

- Use accelerometer to cause a picture to be taken
- Due in two weeks – March 1
  - No class that day.
- This is the last assignment, there is no A5

Last Two Proposal Discussions

Proposals

1. Paint Ball Gun Controller – Igharoro, Merat
2. Car Pooling – Javed, Lourduraj, Hassan

Project Management and Execution

Your Project Plans

- Should have given you a well-defined goal
  - We'll look and see that today and next week
- Should also have broken up work up into pieces
  - The block diagrams required in proposal

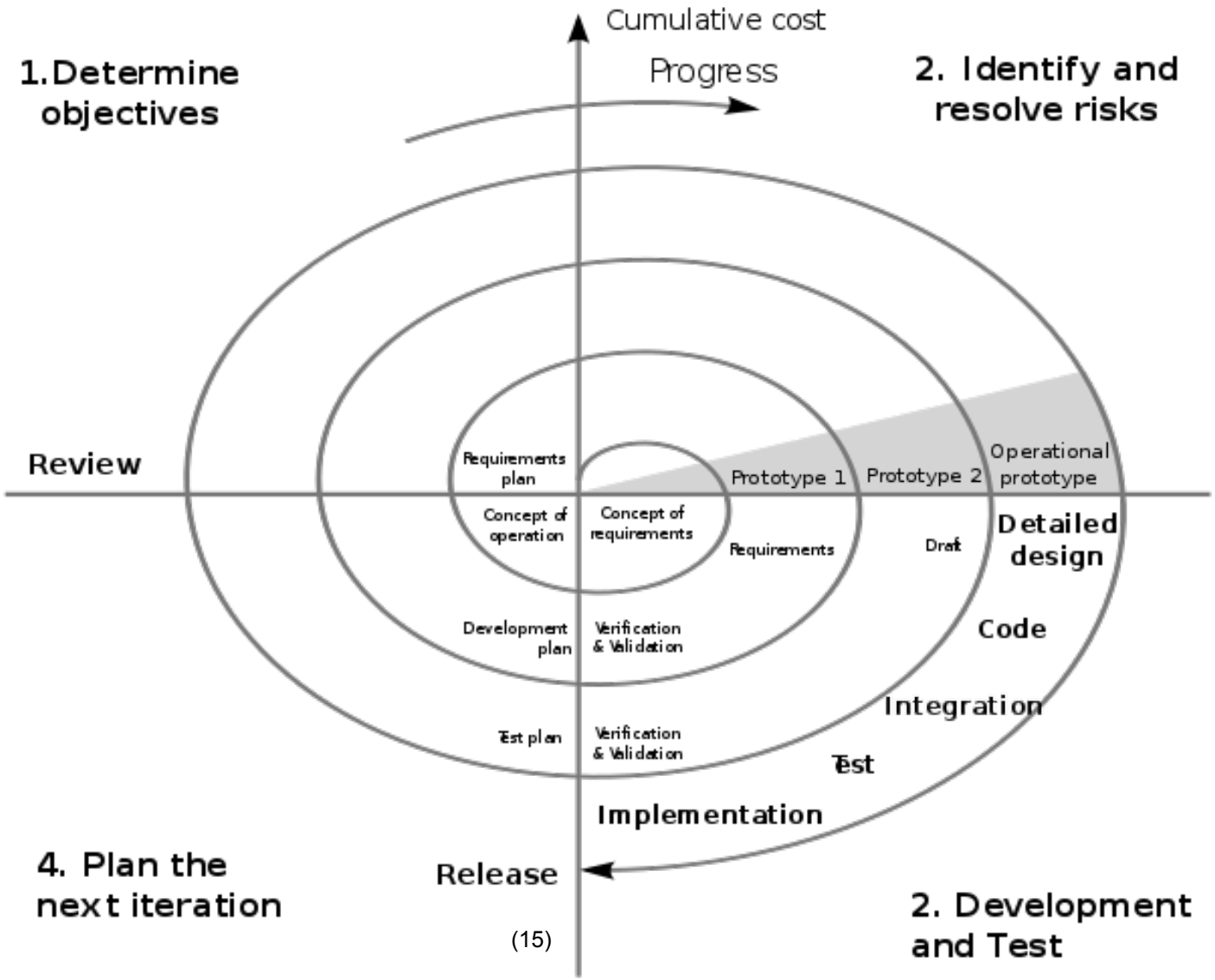
Now: Start Executing! How?

Focus: Spiral/Agile/Incremental Method

- Get the smallest part of your App working as soon as possible.
  - Exercise it, revise it, and build on it
  - Use your common sense to see if it is working, and if your goals need to be adjusted
  - In today's presentations, let's identify what the first working useful version should be

- Spiral vs. Waterfall method
  - Waterfall means plan everything out, documenting carefully
  - Software really needs to be exercised to see how well it works
  - Particularly true for User Interface, but essentially true in all projects!

Boehm's Spiral Model



Agile Software Manifesto

Agile Software Values:

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

- while there is value in the items on the right, we value the items on the left more
  - From http://en.wikipedia.org/wiki/Agile_software_development

Spiral Method of Development

- To emphasize how important this is, I've added an important milestone Due March 8:
  - Call this "**Spiral 2**" goal
  - A demonstration of a minimal working version of your app, or a crucial part of your app
  - Describe what it does, show it, say what next
  - In today's proposal discussion we'll discuss what that might be

- Now, March 8 is three weeks from now, a long time
  - I suggest getting a working version of something prior to then
  - Call that **Spiral 1**

Next Steps

- Identify a Spiral 1 and Spiral 2

- Take your block diagrams, and break down into tasks
  - That lead to Spiral 1 and Spiral 2
  - Be prepared, of course, to adjust goals as you go along

Then:

- Define the tasks that need to happen
- Estimate how long they will take
  - If too long, re-do goals
  - Estimation is difficult; have to try; failure OK; can ask for help
- Assign Tasks to Each Team Member

Project Execution

- You're in a team, and you need to find an effective way to coordinate the team's work
- Agree
  - Who is doing what
  - When work will be done
- Have weekly or more frequent meeting; every 3 days?
  - If not in person, use Skype video or phone

Rule 1 for Effective teams:

- Make commitments,
  - check on commitments (task execution) each meeting
- Don’t be mean if commitment’s not met, work together
  - Figure out if commitment was too ambitious
  - Re-work goals/commitments to be done next
- Do have expectation that contributions of each team member are equal

What About Disagreements?

- You're in a team, you're likely to have disagreements
- If this is your first project experience of this kind, this can be stressful

- **Resolution of disagreements is a crucial skill**
  - Take this as a opportunity to learn how to do it

Issues and Relationships

There are often two things going on when there is conflict:

1. Specific issues that give rise to a problem
   - Factual/strategic differences of opinion
2. Relationship between people
   - Trust, respect

Modified from: http://www.execstrategies.com/Facilitator/ConflictResolutionStrategies.htm

Relationship Focus

- Trust is at the root of all good relationships
  - Personal and professional
  - Must establish common goals and work towards them together
  - Trust is created when everyone believes that everyone else has the same goals

1. Maintain a fair, respectful communication style with careful listening
2. Expect and accept another's right to disagree
3. Realize the value of disagreement

Issue Focus

1. Identify and define the conflict in specific terms
   - Make sure each person is given a chance to speak
   - Make sure each person listens
   - Best way to be sure is to play back **other's** issues in your own words, and ask if that is correct
   - Be respectful while doing so
2. Generate alternative solutions
   - give all everyone opportunity to suggest; write down all concrete ideas
3. Select best course of action
   - In a consensus-based discussion
   - Ultimately will need to make a decision; if consensus doesn't succeed, then need to give decision to one person.

Plans

Plan Presentations Today

1. Reprise Goal, make more precise
2. Rough design of what the user sees
   - Mock-ups of screens
   - https://gomockingbird.com/mockingbird/
   - Any drawing package will do
3. Block Diagrams of Code
   - Top down
   - With short prose description of each
   - Should be linked to the screens

Plan Presentation

4. Statement of Risks/Issues
   - What roadblocks/issues/challenges do you foresee?
   - App-wise, programming-wise, hardware-wise, ethics-wise
5. What do you need to learn that you don't know
   - all members
6. For Groups with Appers
   - Separate Discussion on how Apper contributes to project.

Plan Discussions

- Each group member should contribute to discussion
- Come up to front
  - Others contributions welcome!
  - Please be constructive

- Pick a good Name for your project
  - Names are important!

- Identify a **Spiral 1** goal
- Identify a **Spiral 2** goal – for presentation March 8!

Plans To Review

1. iAnkle – Shah, Carvahlo, So
2. MRI Visualization – Chen, Rodionov
3. Market Research – Wilson, Attarwala, Das
4. City Fixer – Sunthar, Boyle
5. Mobile Wound Care – Fraser, Delorme, Durrani
6. Face Authentication – Gao, Spachos
7. Audience Poller – Heidari, Sadeghlo
8. Anti-Dementia Games – Karkokli, Kim
9. Solar Measurement – Labelle, Kemp
10. Network Pulse - Network – Wang, Feng
11. Network Pulse – UI – Pu, Zhu

Plans To Review

12. Shoptimus Prime – Kipper, Leung
13. Carpool – Lourduraj, Hassan, Javed
14. Transportation Greener – Lu, Song
15. Paintball Turret Control – Igharoro, Merat
16. Mayday: Distress Detection – Mohammadi, Shakeri
17. Noise Mapper – Sabti, Bonilla, Shirali-Shareza
18. Sleep Apnea Detection – Sivagyogan, Leung, Lam
19. Infinite Mosaic – Yee, Zahedi
20. Aerospace Sensor Suite – Tarantini, Choi, Leonard
21. Aug Reality Shooting Game – Au, Zhou