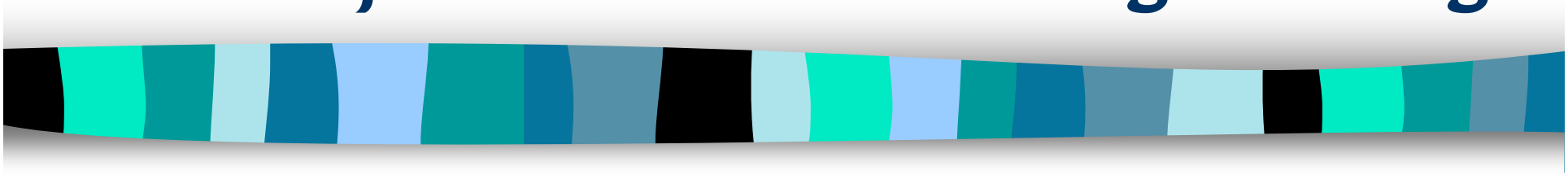
INF 117
Project in Software Engineering



Lecture Notes – Winter Quarter, 2008

Michele Rousseau

Set 2 – Requirements

Announcements

- Contact your Client
  - Meet with your Client ASAP
- Check out the Deliverables Schedule
- Arrange your Meeting Schedules
  - Meet Discuss your roles
- Get going on your Team Website

Not to state the obvious…

- Be dependable, on time, and courteous

Deliverables

- There will be Deliverables every week from here on out
  - Some "big" – some not so big
- Iterative method of s/w dev.
  - 3 iterations for each major deliverable
  - Provide 1-2 page Exec. Summary for each iteration.
    - Reviewed – not graded
- All Docs posted to your website (except assessments – print and bring in)
- Due Dates are "Latest"

JANUARY 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
20 Week 3	21 M.L.King Day	22 Req Iter: #1 Team Website Up	23	24 Stud. Pres-Req Order 1,2,3,4 Sub. Ass: #1	25 Team Log #1
27 Week 4	28 Req Iter: #2 Test Plan It #1	29	30	31	

FEBRUARY 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
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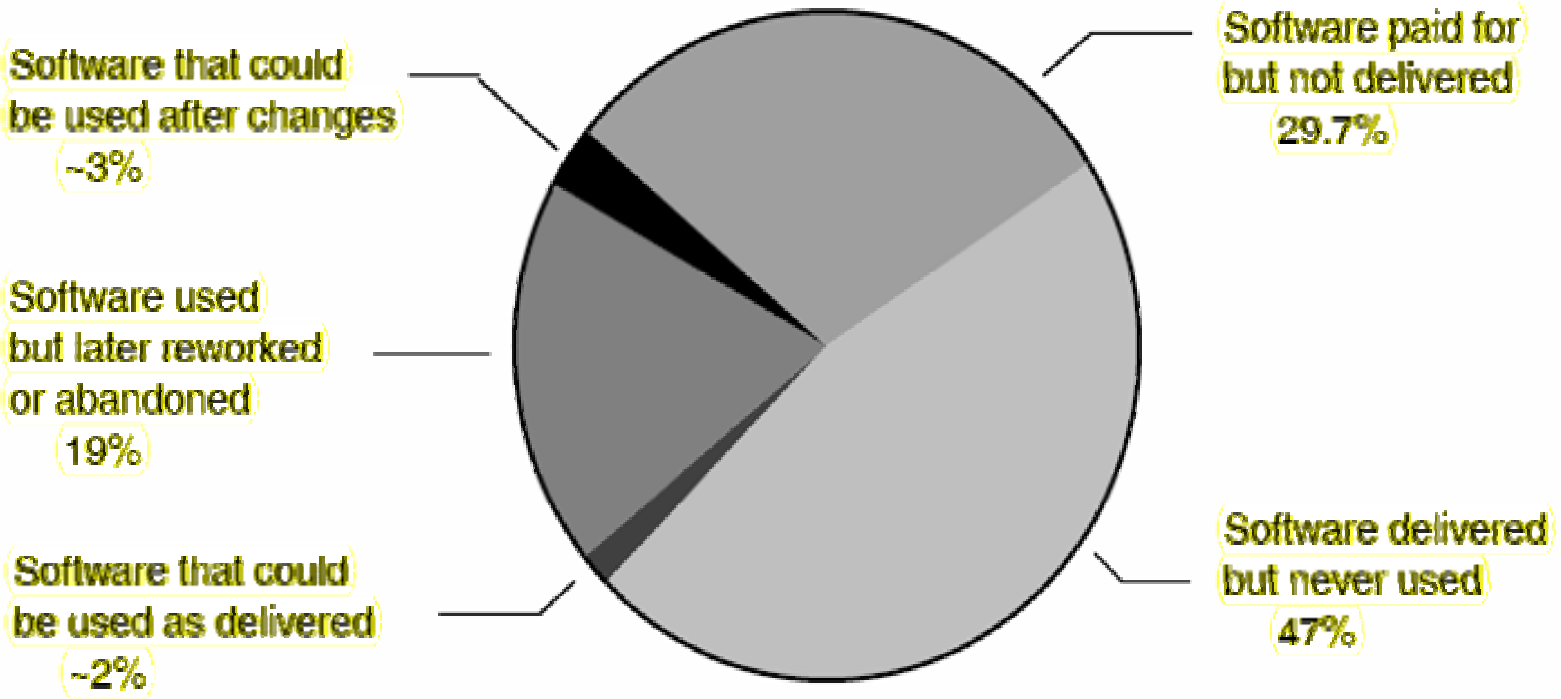
3 Week 5	4 Req. Iter. #3 Des. Iter: #1	5 Cust. Milestone: Req. Approved	6	7 Stud. Pres-Des Order 2,3,4,1 Sub. Ass: #2	8 Team Log #2

Today's Lecture

- Requirements Engineering

Why get it right?



Year 1982: Nine Contracts Totalling $6.8 Million

Figure 1. Results of GAO survey of software contracts

What is the objective?

- End up with something that will lead to a design – complete and comprehensive
- Describe What – not how
- Understand your hardware constraints
- Prioritize (have them decide)
- Understand their needs
  - Some will know solution better than others
  - Help them understand their needs

Some Terminology

- *requirements elicitation*
  - the process through which the clients discover, reveal, articulate, and understand their requirements.
- *requirements specification*
  - A document that describes the requirements in one or more forms,
    - including natural language and formal, symbolic, or graphical representations
- *requirements analysis*
  - Reasoning about the requirements;
  - Examine requirements for conflicts or inconsistencies, combining related requirements, and identifying missing requirements.
- *requirements validation*
  - the process of confirming with the customer or user of the software that the specified requirements are valid, correct, and complete.

5 Basic Steps

- Identify relevant sources of requirements (the users).
- Ask them appropriate questions to gain an understanding of their needs.
- Analyze the gathered information, looking for implications, inconsistencies, or unresolved issues.
- Confirm your understanding of the requirements with the users.
- Synthesize appropriate statements of the requirements.

Before meeting with the client

- Meet with each other
- Work as a team
  - Know your strengths.
  - Decide who will lead for this portion.
- Come to the team meeting with potential questions
  - Think about the problem
- Be as thorough as you can.
- Brainstorm as a team

Brainstorming

- Think about the problem beforehand
- One person should be the leader
- Two phases
  - Generation Phase
    - Offers many ideas as possible
    - Don't criticize – just open thoughts
  - Consolidation Phase
    - Discuss → Revise → Organize Ideas

Lack of criticism and judgment helps overcome communication barriers

4 Rules of Brainstorming

- Criticism is forbidden
- Wild, offbeat, unconventional ideas are encouraged
  - These stimulate thinking
- Generate lots of ideas
- Combine or embellish upon ideas of others

Have a scribe or use a whiteboard

Things to consider…

- Why build this system?
  - What purpose will it serve?
- What benefits will be derived from the use of this system?
- What are the constraints?
  - Resources.. h/w… s/w.. Etc..
- What assumptions are you/the client making?

Interviewing

- Set a time – and a duration with the client
  - Be on time
  - Confirm meeting time
- Be Professional
- Be Tactful ~~~ and to the point
- Be Prepared
- Don't be afraid to ask questions
  - Ask open-ended questions
  - Probe → Explore

Interviewing (2)

- Think about the scope of the problem
- Listen... Listen... Listen...
  - Take notes
    - Ask them to pause or repeat if necessary
  - Draw pictures
  - Record
    - Ask first
  - Rephrase/summarize
  - Don't interupt
- Read their body language
- Don't make assumptions

The point is… make sure you all are on the same page

Interviewing (3)

- Keep the process visible
  - Are we doing alright?
  - Have we ignored anything?
  - Anything else you wish to elaborate on?

The point is… COMMUNICATION

Brainstorm with the Client

- Builds a more complete picture of the user's needs
- See what the long term goals are for the project

Know your Client and their needs

- What do they do?
- Get appropriate contact information
- Understand their availability

- Remember – we all want success

Post-Interview

- Take Notes
- Discuss with your colleagues ASAP
  - Make sure you all have the same understanding
  - If you don't – likely the client won't either
- Summarize the interview– share with the interviewee
- Document the requirements (UML)
  - *Requirements specification*
- Analyze
  - *Requirements Analysis*