

Systems Analysis & Design

CS183 Spring Semester 2008

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Course Textbook:

Systems Analysis and Design With UML 2.0
An Object-Oriented Approach, Second Edition

Chapter 5:

Requirements Determination

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SDLC PHASES

- PLANNING PHASE
- ANALYSIS PHASE
- DESIGN PHASE
- IMPLEMENTATION PHASE

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Analysis Phase: Key Ideas

- The goal of the analysis phase is to truly understand the requirements of the new system and develop a system that addresses them.
- The first challenge is finding the **right people** to participate.
- The second challenge is **collecting and integrating the information**

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Requirements Gathering Methods

1. Interviews
2. JAD Sessions
3. Questionnaires
4. Document Analysis
5. Observation

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1. INTERVIEWS

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Interviews -- Five Basic Steps

1. Selecting interviewees
2. Designing interview questions
3. Preparing for the interview
4. Conducting the interview
5. Post-interview follow-up

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Selecting Interviewees

- Based on information needed
- Often good to get different perspectives
 - Managers
 - Users
 - Ideally, all key stakeholders

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Types of Questions

Types of Questions	Examples
Closed-Ended Questions	<ul style="list-style-type: none"> * How many telephone orders are received per day? * How do customers place orders? * What additional information would you like the new system to provide?
Open-Ended Questions	<ul style="list-style-type: none"> * What do you think about the current system? * What are some of the problems you face on a daily basis? * How do you decide what types of marketing campaign to run?
Probing Questions	<ul style="list-style-type: none"> * Why? * Can you give me an example? * Can you explain that in a bit more detail?

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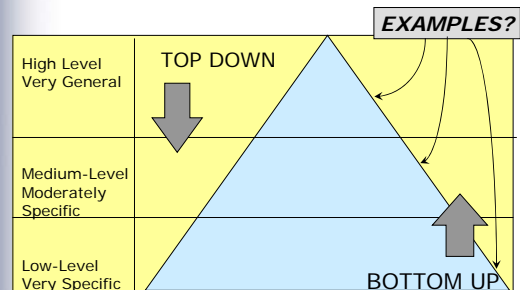
Designing Interview Questions

- Unstructured interview
 - Broad, roughly defined information
- Structured interview
 - More specific information

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Questioning Strategies



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Interview Preparation Steps

- Prepare general interview plan
 - List of questions
 - Anticipated answers and follow-ups
- Confirm areas of knowledge
- Set priorities in case of time shortage
- Prepare the interviewee
 - Inform them of the schedule
 - Tell interviewees reason for interview
 - Inform them of areas of discussion

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Conducting the Interview

- Appear professional and unbiased
- Record all information
- Check on organizational policy regarding tape recording
- Be sure you understand all issues and terms
- Separate facts from opinions
- Give interviewee time to ask questions
- Be sure to thank the interviewee
- End on time

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Conducting the Interview Practical Tips

- Don't worry, be friendly
- Pay attention
- Summarize key points
- Be succinct (concise)
- Be honest
- Watch body language

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Post-Interview Follow-Up

- Prepare interview notes
- Prepare interview report
- Look for gaps and new questions

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Interview Report

INTERVIEW REPORT	
Interview notes approved by: _____	
Person interviewed _____	
Interviewer _____	
Date _____	
Primary Purpose: _____	
Summary of Interview:	
Open Items:	
Detailed Notes:	

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2. JOINT APPLICATION DESIGN (JAD) SESSIONS

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JAD Key Ideas

- Allows project managers, users, and developers to work together
- May reduce scope creep by 50%
- Avoids requirements being too specific or too vague

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Joint Application Design (JAD) Important Roles

- Facilitator
 - ensures sticking to agenda
 - helps understanding of technical terms and jargon
 - records group input on clearly-viewable display area
- Scribe (or scribes)
 - takes minutes and notes
 - makes copies where necessary

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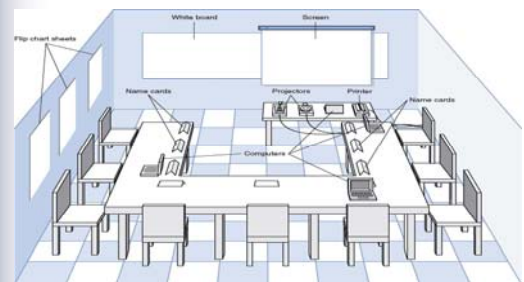
Joint Application Design (JAD) Setting

- U-Shaped seating
- Away from distractions
- Whiteboard/flip chart
- Prototyping tools
- e-JAD

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JAD Meeting Room



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The JAD Session

- Tend to last 5 to 10 days over a three week period
- Prepare questions as with interviews
- Formal agenda and groundrules
- Facilitator activities
 - Keep session on track
 - Help with technical terms and jargon
 - Record group input
 - Help resolve issues
- Post-session follow-up

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JAD Sessions -- Five Basic Steps

1. Selecting participants
2. Designing the JAD Session
3. Preparing for the JAD Session
4. Conducting the JAD Session
5. Post-JAD follow-up

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Managing Problems in JAD Sessions

- Reducing domination
- Encouraging non-contributors
- Side discussions
- Agenda merry-go-round
- Violent agreement
- Unresolved conflict
- True conflict
- Use humour

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3. QUESTIONNAIRES

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Questionnaire Steps

- Selecting participants
 - Using samples of the population
- Designing the questionnaire
 - Careful question selection
- Administering the questionnaire
 - Working to get good response rate
- Questionnaire follow-up
 - Send results to participants

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Good Questionnaire Design

- Begin with non-threatening and interesting questions
- Group items into logically coherent sections
- Do not put important items at the very end of the questionnaire
- Do not crowd a page with too many items
- Avoid abbreviations
- Avoid biased or suggestive items or terms
- Number questions to avoid confusion
- Pretest the questionnaire to identify confusing questions
- Provide anonymity to respondents

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4. DOCUMENT ANALYSIS

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Document Analysis

- Provides clues about existing "as-is" system
- Typical documents
 - Forms
 - Reports
 - Policy manuals
- Look for user additions to forms
- Look for unused form elements

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5. OBSERVATION

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Observation

- Checks validity of information gathered other ways
- Users/managers often don't remember everything they do !
- Behaviours change when people are watched !
- Careful not to ignore periodic activities
 - Weekly ... Monthly ... Annual !

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Selecting the Appropriate Techniques

	Interviews	JAD	Questionnaires	Document Analysis	Observation
Type of Information	As-Is Improve. To-Be	As-Is Improve. To-Be	As-Is Improve.	As-Is	As-Is
Depth of Information	High	High	Medium	Low	Low
Breadth of Information	Low	Medium	High	High	Low
Integration of Info.	Low	High	Low	Low	Low
User Involvement	Medium	High	Low	Low	Low
Cost	Medium	Low-Medium	Low	Low	Low-Medium

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Summary

- There are five major information gathering techniques that all systems analysts must be able to use: *Interviews, JAD, Questionnaires, Document Analysis, and Observation.*
- Systems analysts must also know how and when to use each as well as how to combine methods.

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