***Requirements Elicitation – 3***

***Lecture # 11***

**Specific Elicitation Techniques**

* Interviews
* Scenarios
* Observations and social analysis
* Requirements reuse

***Interviews***

* The requirements engineer or analyst discusses the system with different stakeholders and builds up an understanding of their requirements
* Interviews are less effective for understanding the application domain and the organizational issues due to terminology and political factors

***Types of Interviews***

* ***Closed interviews***

The requirements engineer looks for answers to a pre-defined set of questions

* ***Open interviews***

There is no predefined agenda and the requirements engineer discusses, in an open-ended way, what stakeholders want from the system

***Interviewing Essentials***

* Interviewers must be open-minded and should not approach the interview with pre-conceived notions about what is required
* Stakeholders must be given a starting point for discussion. This can be a question, a requirements proposal or an existing system
* Interviewers must be aware of organizational politics - many real requirements may not be discussed because of their political implications

***Interview Steps***

* Prepare
* Conduct
  + Opening
  + Body
  + Closing
* Follow through

***Prepare for the Interview***

* **Before developing questions:**
  + Define the purpose and objectives
  + Determine whether the interview should be conducted by one person or a team (define roles for team members)
  + Contact interviewee to arrange time, place, and logistics of the interview and outline the purpose and format
  + Obtain background information

**After contacting the interviewee:**

* Develop the interview guide
  + - List name and title of interviewee and date of the interview
    - List questions in the order you will ask them
    - Move from general to specific
    - Include open questions to elicit essay type response (e.g., Describe., Tell me., How…)
    - Include closed questions to obtain specific information (e.g Who? How much? Where?)

***Conduct the Interview***

**Opening:**

* + Establish rapport and build trust and credibility
    - Make eye contact
    - Shake hands
    - Introduce yourself **(and your team)** provide information about role in the interview process
  + Clarify purpose, time frame, and key objectives
  + Transition to the core of the interview by leading into the first question

**Body:**

* + Follow your interview guide as you ask questions; use probes to follow up on a response
  + Be flexible and open-minded
  + Listen actively
  + Monitor your voice and body language
  + Identify interviewee’s main concerns
  + Maintain rapport
  + Take accurate notes
  + Use silence and pauses
  + Ask for and obtain relevant documentation
  + Ask “catch-all” question at the end

**Closing:**

* + Summarize findings and link to purpose
  + Answer any questions the interviewee has
  + Determine and agree on next steps
  + Set next meeting, if necessary
  + Thank the interviewee for his/her input and for taking the time to meet with you

***Follow Through***

* Immediately after the interview, fill in your notes; be sure to jot down impressions and important ideas
* Review any documentation received from the interviewee
* Write an interview report, if necessary
* Follow up on leads obtained during the interview
  + Contact other potential interviewees
  + Research other data sources
* Follow up in agreed-upon next steps
* Send a thank you note to the interviewee, if appropriate

**Listening**

* The art of listening is most important. You can best impress your client by listening and giving due attention to what the client or customer is saying
* This requires effort on part of the interviewer

***Listening Steps***

* Hear
* Interpret
* Respond
* Evaluate

***Hear the Message***

* Listen to learn as much as you can so that you will know how to respond
* Give the speaker your undivided attention; don’t just wait for your turn to speak
* Concentrate on the message, not the person
* Don’t interrupt
* Tune out distractions such as interfering noises, wandering thoughts, and emotional reactions to the speaker’s message
* Suspend judgment about the message until you have heard all the facts
* Take notes on the speaker’s key points, if appropriate
* Learn to manage your own emotional filters, personal blinders, and biases, which can keep you from hearing what is really being said

***Interpret the Message***

* Observe the speaker’s nonverbal cues and factor them into your interpretation
* Listen for the attitudes and motives behind the words
* Listen for the speaker’s needs and wants
* Put the message in a broader context
* Integrate what you just heard into what you already know about the speaker or subject

***Nonverbal Response to the Message***

* Make eye contact
* Nod affirmatively
* Use facial expressions and gestures to indicate that you are listening

***Verbal Response to the Message***

* Ask questions and probe to get more specific information and ensure understanding
* Rephrase the message using different words to check the meaning
* Make empathetic remarks that acknowledge you understand the speaker’s feelings, without offering opinions or judging him or her

***Evaluate the Message***

* Identify the main point of the message and its supporting evidence
* Clarify facts, perceptions, and opinions
* Distinguish between fact and opinion
* Group facts in like categories and logical order (importance, chronology)
* Base your opinion about the message on the facts
* Use the total message – the needs, the context, and the content – to follow through on what you hear

**Brainstorming:**

* Facilitated application specification technique (FAST)
* Group activity
* All members are equal
* Off-site meeting location is preferred

**Scenarios:**

* Scenarios are stories which explain how a system might be used. They should include
  + A description of the system state before entering the scenario
  + The normal flow of events in the scenario
  + Exceptions to the normal flow of events
  + Information about concurrent activities
  + A description of the system state at the end of the scenario
* Scenarios are examples of interaction sessions which describe how a user interacts with a system
* Discovering scenarios exposes possible system interactions and reveals system facilities which may be required

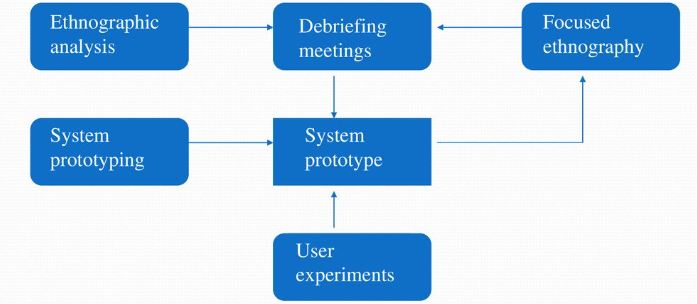
**Scenarios and Use-Cases:**

* The term use-case is sometimes used to refer to a scenario
  + A use-case is a scenario
  + A scenario is a collection of use-cases. Therefore, each exceptional interaction is represented as a separate use-case
  + A use-case is a collection of scenarios

**Observation and Social Analysis:**

* People often find it hard to describe what they do because it is so natural to them. Sometimes, the best way to understand it is to observe them at work
* Ethnography is a technique from the social sciences which has proved to be valuable in understanding actual work processes
* Actual work processes often differ from formal, prescribed processes
* An ethnographer spends an extended time observing people at work and building up a picture of how work is done

***Ethnography in Requirements Elicitation***



***Ethnography Guidelines:***

* Assume that people are good at doing their job and look for non-standard ways of working
* Spend time getting to know the people and establish a trust relationship
* Keep detailed notes of all work practices. Analyze them and draw conclusions from them
* Combine observation with open-ended interviewing
* Organize regular de-briefing session where the ethnographer talks with people outside the process
* Combine ethnography with other elicitation techniques

***Requirements Reuse:***

* Reuse involves taking the requirements which have been developed for one system and using them in a different system
* Requirements reuse saves time and effort as reused requirements have already been analyzed and validated in other systems
* Currently, requirements reuse is an informal process but more systematic reuse could lead to larger cost savings

***Reuse Possibilities***

* Where the requirement is concerned with providing application domain information
* Where the requirement is concerned with the style of information presentation. Reuse leads to a consistency of style across applications
* Where the requirement reflects company policies such as security policies

***Prototyping***

* A prototype is an initial version of a system which may be used for experimentation
* Prototypes are valuable for requirements elicitation because users can experiment with the system and point out its strengths and weaknesses. They have something concrete to criticize
* We’ll talk about prototyping in a later lecture

***Summary:***

* There are various techniques of requirements elicitation which may be used including interviewing, scenarios, prototyping and participant observation
* We focused on different aspects of conducting interviews in this lecture