# SYAD Week 4 Tutorial (Chapter 4)

**Chapter 4 – Requirements Modeling**: Chapter 4 describes the requirements modeling process: gathering facts about a systems project, preparing documentation, and creating models that will be, used to design and develop the system.

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Student ID**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer the following short questions:**

**Question 1**: What five questions typically are, used in fact-finding? What other question does the Zachman Framework include? Is the additional question important?

|  |
| --- |
| **Ans:** The five traditional fact-finding questions are:   1. **Who** is involved? 2. **What** needs to be done? 3. **Where** does the process take place? 4. **When** does it occur? 5. **How** is the task performed?   The **Zachman Framework** adds a sixth question: **Why**? This question focuses on the purpose or motivation behind an action or decision. Yes, the additional question is crucial as it helps system analysts understand the business goals and aligns the system requirements with organizational objectives. |

**Question 2**: What is a systems requirement, and how are systems requirements classified?

|  |
| --- |
| A systems requirement defines the business conditions, functions, or characteristics that a proposed information system must satisfy. These are classified into five categories:   1. **Outputs** (e.g., reports and data visualizations). 2. **Inputs** (e.g., data entry forms and interfaces). 3. **Processes** (e.g., calculations, workflows). 4. **Performance** (e.g., speed, scalability). 5. **Controls** (e.g., security and error handling). |

**Question 3**: What are JAD and RAD, and how do they differ from traditional fact-finding methods? What are the main advantages of team-based methods?

|  |
| --- |
| **JAD (Joint Application Development)** involves intensive workshops where users actively participate in the system development process.  **RAD (Rapid Application Development)** focuses on rapid prototyping and iterative feedback.  **Differences from traditional methods**: Traditional methods rely on sequential interviews and documentation, whereas JAD and RAD emphasize team collaboration and rapid cycles.  **Advantages**:   1. Encourages user ownership and involvement. 2. Reduces development time and increases cost efficiency. 3. Enhances the accuracy of requirements and system design. |

**Question 4**: What is total cost of ownership (TCO)? What costs often are underestimated?

|  |
| --- |
| **TCO** refers to the overall cost of acquiring, implementing, and maintaining a system, including direct and indirect expenses. Often underestimated costs include:   1. **Indirect costs** (e.g., training, downtime). 2. **Long-term maintenance costs**. 3. **Operational costs** (e.g., licenses, upgrades). |

**Question 5**: Provide three examples each of closed-ended, open-ended, and range-of-response questions.

|  |
| --- |
| **Three examples each of closed-ended, open-ended, and range-of-response questions.**   * **Closed-ended questions**:   1. Do you use the system daily?   2. Is the current system meeting your needs?   3. Are reports generated automatically? * **Open-ended questions**:   1. How do you feel about the current system?   2. What improvements would you suggest?   3. Can you describe the challenges you face? * **Range-of-response questions**:   1. On a scale of 1–10, how user-friendly is the system?   2. How often does the system fail (e.g., rarely, sometimes, often)?   3. Rate the importance of system security (e.g., low, medium, high). |

**Question 6**: What are three types of sampling? Which one would you use to analyze data input errors?

|  |
| --- |
| The three types of sampling are:   1. **Systematic sampling**: Selecting every nth record from a dataset. 2. **Stratified sampling**: Dividing the population into subgroups and sampling proportionally. 3. **Random sampling**: Selecting records randomly. To analyze **data input errors**, **random sampling** is most suitable as it provides a diverse representation for error identification. |

**Question 7**: What is the Hawthorne Effect? Have you ever experienced it? When and where?

|  |
| --- |
| The **Hawthorne Effect** refers to the phenomenon where individuals change their behavior because they know they are being observed. Personal experiences would vary, but one example could be a workplace scenario where employees work harder during performance reviews due to observation by management. |

**Question 8**: What is a functional decomposition diagram (FDD) and why would you use one? Explain how to create an FDD.

|  |
| --- |
| An **FDD** is a top-down representation of a system’s processes and functions. It is used to break down complex processes into manageable sub-processes. **Steps to create an FDD**:   1. Identify the system’s main function. 2. Break down the primary function into sub-functions. 3. Further decompose sub-functions into smaller tasks as needed. 4. Arrange hierarchically and ensure clarity. |

**Question 9**: What are agile methods? Are they better than traditional methods? Why or why not?

|  |
| --- |
| **Agile methods** involve building systems incrementally through iterative prototypes and user feedback. They emphasize flexibility and collaboration.  **Advantages over traditional methods**:   1. Quick adaptation to changing requirements. 2. Continuous validation of the product reduces risks. 3. Frequent deliverables keep stakeholders engaged.   **Drawbacks**: Lack of structure and documentation may lead to scope creep and reliance on highly skilled teams. Whether agile is better depends on the project complexity and need for fast delivery. |

**Question 10**: To what three different audiences might you have to give a presentation? How would the presentation differ for each? Which one would be the most challenging for you?

|  |
| --- |
| 1. **To what three different audiences might you have to give a presentation? How would the presentation differ for each? Which one would be the most challenging for you?**   Three audiences:   1. **Technical team**: Focus on detailed system specifications and processes. 2. **Management/executives**: Emphasize cost, timelines, benefits, and ROI. 3. **End-users**: Highlight usability and day-to-day relevance.   The most challenging could be **management**, as they require concise, data-driven communication linked to strategic goals.   1. **Discussion Topic: Advantages and disadvantages of group meetings compared to interviews and questionnaires.**   **Advantages**:   1. Promotes active discussion and idea generation. 2. Reduces redundancy by involving multiple stakeholders. 3. Saves time compared to individual interviews.   **Disadvantages**:   1. May face scheduling conflicts. 2. Risk of dominance by certain members. 3. Time constraints could limit in-depth exploration. |

**Discussion Topics**

A group meeting sometimes is suggested as a useful compromise between interviews and questionnaires. In a group meeting, a systems analyst meets with several users at one time. Discuss the advantages and disadvantages of group meetings.

|  |
| --- |
| **Advantages and Disadvantages of Group Meetings**  A group meeting is a fact-finding technique in which a systems analyst meets multiple users simultaneously to discuss system requirements, challenges, and potential improvements. It is often seen as a middle ground between one-on-one interviews and generalized questionnaires. Below is a detailed discussion of the advantages and disadvantages of group meetings:  **Advantages of Group Meetings**   1. **Efficient Use of Time**    * Group meetings allow the analyst to gather input from multiple users at once, reducing the overall time required for individual interviews.    * Common issues can be addressed collectively without repetitive discussions. 2. **Foster Collaboration and Idea Exchange**    * Group settings encourage users to share diverse perspectives and clarify each other's points. This collaborative environment can lead to innovative solutions and a more accurate understanding of system requirements. 3. **Conflict Resolution and Consensus Building**    * When multiple users have conflicting needs or priorities, a group meeting provides a forum to openly discuss and reach a consensus.    * Analysts can observe interpersonal dynamics and resolve misunderstandings in real-time. 4. **Cost-Effectiveness**    * Conducting a group meeting is generally less costly than conducting several individual interviews, both in terms of time and resources. 5. **Interactive Feedback**    * In group settings, participants can ask questions, provide immediate feedback on ideas, and validate each other's inputs. This ensures higher data accuracy and mutual understanding.   **Disadvantages of Group Meetings**   1. **Difficulty in Scheduling**    * Coordinating a convenient time for all participants can be challenging, especially if attendees have conflicting schedules or are located in different regions. 2. **Dominance by Certain Participants**    * Some members may dominate the discussion, limiting input from quieter or less assertive participants. This can create a bias in fact-finding. 3. **Groupthink**    * Participants may conform to the dominant opinion, avoiding dissent to maintain group harmony. This can result in overlooking important but unpopular viewpoints. 4. **Limited Depth of Discussion**    * Group meetings often focus on broad topics to accommodate all participants, which may limit the depth of information compared to one-on-one interviews. 5. **Risk of Side Discussions**    * Meetings can sometimes get sidetracked into unrelated topics, reducing productivity and focus on the key objectives. 6. **Potential Intimidation**    * Some users might feel uncomfortable voicing their true opinions in a group setting, particularly if higher-level managers or assertive peers are present. |