

Lab Report: Requirements Engineering

Experiment No.: 1

Title:

Gather Application-Specific Requirements for Assimilation into an RE (Requirements Engineering) Model

Objective:

The objective of this experiment is to gather, document, and analyze application-specific requirements to assimilate them into a Requirements Engineering (RE) model. This process will ensure that the requirements are clear, complete, and consistent, providing a solid foundation for the development of the application.

Materials Required:

- Requirement gathering tools (e.g., questionnaires, interviews, surveys)
- Document management software (e.g., Microsoft Word, Google Docs)
- RE modeling tools (e.g., Enterprise Architect, IBM Rational DOORS)
- Stakeholder contact information
- Use case diagrams (if applicable)

Theory:

Requirements Engineering (RE) is a systematic and disciplined approach to defining, documenting, and managing the requirements of a software system. It encompasses the activities involved in identifying the stakeholders, capturing their needs, and ensuring that the system built fulfills those needs.

Procedure:

1. Identify Stakeholders:

- - List all potential stakeholders involved in the project, including clients, end-users, project managers, and developers.
- - Establish communication channels with the stakeholders.

2. Requirement Gathering:

- - Use appropriate tools (interviews, surveys, questionnaires) to gather requirements from the stakeholders.
- - Conduct meetings or workshops to discuss the expectations and needs of the stakeholders.
- - Document the gathered requirements.

3. Requirement Documentation:

- - Classify the requirements into functional and non-functional categories.
- - Document each requirement in detail, ensuring clarity and completeness.
- - Use natural language or a formal requirements specification template.

4. Requirement Analysis:

- - Analyze the gathered requirements for feasibility, consistency, and completeness.
- - Identify any conflicting or ambiguous requirements and resolve them through stakeholder consultation.

5. Requirement Validation:

- - Present the documented requirements to the stakeholders for validation.
- - Make necessary revisions based on stakeholder feedback.
- - Ensure all requirements are signed off by the stakeholders.

6. Assimilation into RE Model:

- - Translate the validated requirements into an RE model using modeling tools.
- - Create use case diagrams, if applicable, to represent the functional requirements visually.
- - Ensure that the RE model accurately reflects the documented requirements.

7. Final Review:

- - Conduct a final review of the RE model with all stakeholders to ensure alignment with their expectations.
- - Make any final adjustments as required.

Results:

A detailed RE model that accurately reflects the application-specific requirements.
Documented and validated requirements that are clear, complete, and consistent.

Discussion:

Discuss the challenges faced during the requirement gathering and analysis process.
Reflect on the importance of stakeholder involvement and effective communication in RE.

Highlight any changes made during the validation phase and their impact on the final RE model.

Conclusion:

Summarize the importance of proper requirements engineering in the success of software development projects. Emphasize how the experiment helped in understanding the intricacies of gathering and documenting requirements, and how these activities contribute to building a reliable RE model.

References:

Include any references to textbooks, research papers, or online resources that were consulted during the experiment.

Appendix:

Attach any supplementary material such as interview transcripts, survey results, or detailed requirement documents.