1ICPC317

AY 2024-25

SDLC Laboratory

Quality Laboratory Manual

Experiment No. 02

To Understand the Requirement Engineering Tasks.

Course Instructor –

Mr. Sharanabasava Raddi

ASSISTANT PROFESSOR

Experiment No. 02

Title of Experiment: To Understand the Requirement Engineering Tasks

Aim of Experiment: To understand and apply Requirement Engineering Tasks in a software development life cycle (SDLC) through a practical project.

System Requirements – Win 10 and above OS, 4GB RAM, 2.33 GHz Processor

Software/s Needed for Experiment –

Experiment Objectives:

- To explore the different tasks involved in requirement engineering.
- To understand the importance of each task in requirement engineering.
- To gain hands-on experience in documenting and managing a software requirements.
- To understand the importance of making the requirement document clear and Precise.

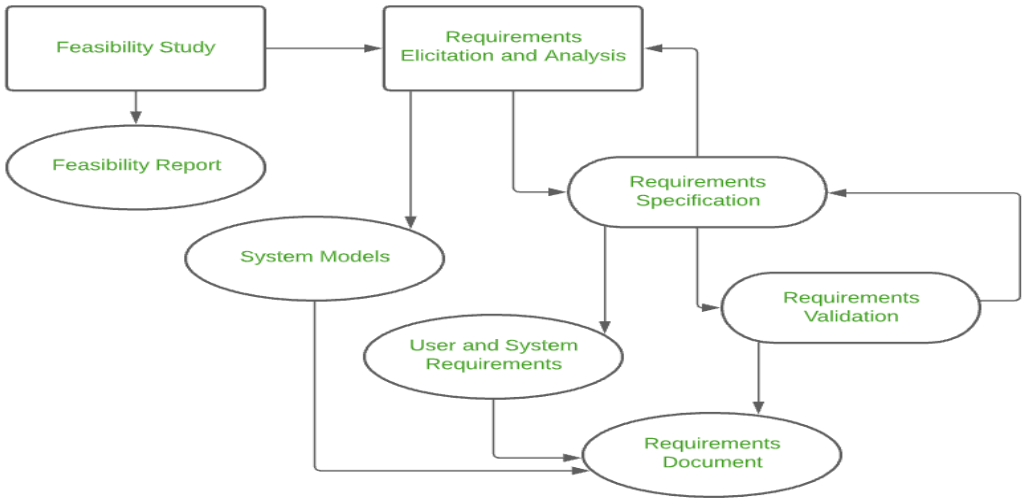
Experiment Outcomes:

- Clear understanding of requirement gathering phase.
- Ability to follow systematic approach for requirement engineering.
- Following different tasks of requirement engineering.
- Clear understanding and documentation of customer requirements and system requirements

Theory:

Requirement Engineering Tasks:

The process of collecting the software requirement from the client then understand, evaluate and Document it is called as requirement engineering.



1. **Inception:**
   - Inception is a task where the requirement engineering asks a set of questions to establish a software process.
   - In this task, it understands the problem and evaluates with the proper solution

2. **Elicitation:**
   - Elicitation means to find the requirements from all the stake holders.

3. **Elaboration:**
   - The information taken from user during inception and elaboration is expanded and refined in elaboration.
   - Developing pure model of software using functions, feature and constraints of a software

4. **Negotiation:**
   - In negotiation task, a software engineer decides how will the project be achieved with limited business resources.
   - To create rough guesses of development and assess the impact of the requirement on the project cost and delivery time.

5. **Specification:**
   - In this task, the requirement engineer constructs a final work product.
   - The work product is in the form of software requirement specification.
   - In this task, formalize the requirement of the proposed software such as informative, functional and behavioral.
   - **The requirement are formalize in both graphical and textual formats**

6. **Validation:**
   - The work product is built as an output of the requirement engineering and that is accessed for the quality through a validation step.
   - The formal technical reviews from the software engineer, customer and other stakeholders helps for the primary requirements validation mechanism.

7. **Requirement management:**
   - It is a set of activities that help the project team to identify, control and track the requirements and changes can be made to the requirements at any time of the ongoing project
   - After finalizing the requirement traceability table is developed.
   - The examples of traceability table are the features, sources, dependencies, subsystems and interface of the requirement.

Observations:

- Different tasks of requirement engineering aims to specific outcome.
- By following systematic requirement engineering process, can produce clear and precise requirement document with supporting artifacts
- Once the requirement document is clear it increases the probability of implementing a software application with high quality.

Conclusion:
The experiment successfully demonstrated the tasks in requirement engineering process. Following all the tasks of requirement engineering is a crucial for success of the project.

Expected Oral Questions:

1. What is Requirement Engineering?
2. List out different tasks of Requirement Engineering.
3. Explain different tasks of Requirement Engineering?
4. What is requirement traceability matrix?
5. Who is responsible to gather and document the requirements from customer?
6. How clear and precise requirement document impacts the software project?

FAQs in Interview:

1. What are the key tasks of requirement engineering?
2. Name the role responsible for requirement collection and documentation?
3. What is requirement review?
4. What is requirement walkthrough?