# Investigation: Requirements Engineering

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1. **What is requirements engineering?**

**Ans:** The process of identifying, capturing, and preserving requirements in the engineering design process is known as requirements engineering.

In the software development life cycle, the requirements engineering process is crucial because it helps to guarantee that the software system being created satisfies the needs and expectations of stakeholders and is produced on schedule, within budget, and to the needed quality. The requirements engineering process involves a clear understanding of the requirements of the intended system ([1](#One)).

1. **In an agile/iterative software development setting, will you undergo this process once or multiple times?**

**Ans:** In agile/iterative software development setting, we will undergo the process in multiple times. In this Rapid, incremental cycles are used to build software. This approach divide projects into smaller iterations or sections and avoid long-term planning. This results in small incremental releases with each release building on previous functionality.

1. **What are the different requirements engineering activities? Who takes part in those activities.**

**Ans:** Below mentioned are the different requirements engineering activities.

* Requirements elicitation
* Requirements specification.
* Requirements verification and validation.
* Requirements management

customers, users, stakeholder, and domain experts are involved in engineering activities.

1. **Define each of the participants in the above activities (example: developer, stakeholder)**

**Ans: Developer:** Developer is responsible for the analysis, documentation, coordination, and management of requirements regarding new software projects. They identify and understand the customer's project-specific demands and document them in a clear and binding way.

**Business Analysts:** A professional who uses data analysis to analyze, understand, and record software, services, and business processes([4](#Four)).

**Quality Assurance Team:** The process of establishing and upholding standards for the creation of products is known as quality assurance (QA). Members of the QA team make sure that the goods clients receive continuously meet or exceed expectations, which enhances the reputation of the brand.

**Requirements Analysts:** It’s the crucial process in the software development who deals with the requirements that are efficient for the project ,as it defines what to do, why it is needed.

**Stakeholder:** The involvement of stakeholders in requirement engineering (RE) varies widely and it is majorly a function of the requirement activities involved. The role of Stakeholders’ is considered very important in RE, but literatures hardly discuss in details how the two entities relate to each other.

**End-Users:** Stakeholder who speaks for the requirements of those who will use the provided solution at the operational level. The individual who will really use the solution regularly as part of their everyday job once the project team has published it is known as the end-user.

**Testers:** Testers are specialists in these professions and may work on test analysis, test design, specialized test types, or test automation. In my team, we are dividing the work into smaller tasks to work together effectively and engaged with each other in their roles as they are efficient

**Product Managers:** A product manager is a professional who defines the strategy, roadmap, features, and success of a product.

1. **For each of the roles in the above two questions, identify who fills those roles (for example, your team is the developer(s), etc).  Remember that one person/group can play multiple roles!**

**Ans:** In my team, we are dividing the work into smaller tasks to work together effectively and engaged with each other as they work for different roles based on the their efficiency as follows

**1.**Hemanth in Backend & Trinadh in Frontend as developers.

**2.**Teja exclusively worked on documentation, functional testing and designing the wireframes.

**3.**Manasa will be working as SCRUM master who will be playing a crucial role in initiating the calls, progressing the work, Sprint planning and engaging the team in a right way.

**4.** Mahesh in & as integrating team deals along with database connections.

**5.** Praveen as a Business analyst creating reports, carrying out thorough investigation and analysis, and supporting the creation of solutions.

1. **Define functional requirement.**

**Ans:** Functional requirements specify what a system should do when operating normally to ensure that the design is suitable for creating the desired product and that the final product meets user expectations([3](#Three)).

1. **Define non-functional requirement.**

**Ans:** A non-functional requirement is a statement defining a system quality, constraint, or external interface. A non-functional requirement defines the quality attribute of a software system.

1. **What project artifacts (documents, etc) should result from requirements engineering?**

**Ans:** Below mentioned are the project artifacts should result from requirements engineering. Use case diagrams, User Stories, Requirements Traceability Report, Change Request Documentation, Prototypes, Supplementary Specification.

1. **Define requirements elicitation.**

**Ans:** Requirements elicitation is the process of discovering,analyzing, and documenting the needs and expectations of the stakeholders for a software system ([2](#Two)).

1. **What are the sequence of steps one should take during requirements elicitation?  Which step is potentially the hardest.**

**Ans:** Requirements elicitation is a critical phase in the software development process, and the specific steps may vary depending on the methodology used.

The following are the steps involved in the requirements elicitation.

* Identify Stakeholders
* Identify Stakeholders
* Gather Preliminary Information
* Select Elicitation Techniques
* Conduct Elicitation Activities
* Document Requirements:
* Review and Validate
* Baseline Requirements

The hardest step is Conduct Elicitation Activities. Due to the requirement for good communication, scope management, and the capability to negotiate the complexity of stakeholder interactions, it can be difficult.

1. **What are key things you should try to identify when working with the client?  What kinds of questions should you ask?**

**Ans:** When working with the clients some of the things we must follow in order to achieve good project deliverables.

Clear Communication, Establish Mutual Trust, Timeline Management, Business goals, Technology constraints, Regulatory requirements, Regular Reporting and Updates

**Some of the questions to ask clients:**

“What is the objective of the proposed project”? How it will be used in the real life?

“Which software engineering model you are using for the project delivery”?

“What is the budget of the project to be delivered”?

“What is the deadline to deliver the project”?

“Are there any third-party integrations or dependencies?”

“What are the expected scalability and performance requirements?”

**Sources cited:**

1. **<https://www.geeksforgeeks.org/software-engineering-requirements-engineering-process/>**

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1. **<https://www.cio.com/article/276798/project-management-what-do-business-analysts-actually-do-for-software-implementation-projects.html>**