**Requirement Engineering:** It is the process of defining, documenting, and managing the requirements of a system or software project. It involves understanding the needs of stakeholders and translating those needs into well-defined and unambiguous specifications that can be used by development teams to build the desired software.

In an **agile/iterative software development** setting requirements engineering is an ongoing process that occurs throughout the development lifecycle. It's not a one-time activity but rather an iterative one, with requirements being continuously refined and adjusted as the project progresses.

**Different Requirements Engineering Activities**

**Requirements Elicitation**: This involves gathering requirements from stakeholders. Participants can include business analysts, product managers, and users.

**Requirements Analysis**: This activity involves examining and organizing the gathered requirements to ensure they are complete, consistent, and feasible. Business analysts and system architects often participate.

**Requirements Specification**: This is where the requirements are documented in detail. This can be done by business analysts, technical writers, or system architects.

**Requirements Validation**: This activity involves reviewing the requirements with stakeholders to ensure they accurately represent their needs. Stakeholders, product owners, and developers can be involved.

**Requirements Verification**: This step involves checking that the implemented system meets the specified requirements. Testers and quality assurance teams are involved.

**Requirements Management**: This is the ongoing process of managing changes to requirements throughout the project. Project managers and change control boards are typically responsible.

**Participants in Requirements Engineering Activities for ESPARTA**

**Stakeholders**: These are the individuals or groups who have an interest in the success of ESPARTA. They include artists, buyers, and platform administrators.

**Product Managers**: They oversee the product's development and are responsible for defining high-level requirements.

**Business Analysts**: They gather, document, and analyze requirements, ensuring they align with business goals.

**System Architects/Developers**: They participate in analyzing and designing the technical aspects of the system based on requirements.

**Quality Assurance/Testers**: They verify that the software meets the specified requirements through testing.

**Technical Writers**: They document requirements in a clear and understandable manner.

Project Managers: They manage the overall requirements engineering process, including changes and communication with stakeholders.

Definitions:

**Functional Requirement**: These describe what a system or software should do. For ESPARTA, a functional requirement could be "Allow artists to upload images of their artwork."

**Non-Functional Requirement**: These specify how a system should perform its functions. An example for ESPARTA might be "The website must load within 3 seconds for optimal user experience."

**Project Artifacts from Requirements Engineering:**

**Requirement Documents**: These contain detailed descriptions of requirements.

**Use Cases**: Descriptions of how users interact with the system.

**User Stories**: Short, user-centric descriptions of functionality.

**Requirement Traceability Matrix**: Links requirements to their sources and test cases.

**Change Requests**: Documentation of any changes to requirements.

Requirements Elicitation is the process of collecting requirements from stakeholders.

**Steps in Requirements Elicitation:**

**Identify Stakeholders**: Determine who the key stakeholders are, such as artists, buyers, and administrators.

**Gather Information**: Conduct interviews, surveys, workshops, or observations to understand their needs.

**Document Requirements**: Record the gathered information in a structured way.

**Review and Validate**: Share the documented requirements with stakeholders to ensure they accurately represent their needs.

**Iterate**: Refine and update requirements based on feedback.

The hardest step in requirements elicitation is often gathering complete and accurate requirements as stakeholders may have varying or evolving needs.

When working with the client (in this case, ESPARTA's stakeholders), key things to identify include:

**Functional Needs**: What features do they require, e.g., the ability for artists to upload images or for buyers to search for artwork?

**Non-Functional Needs**: What performance, security, or usability expectations do they have?

**Constraints**: Are there any budget, time, or technology limitations?

**Priorities**: Which requirements are most critical or should be implemented first?

**User Stories**: Understand their specific use cases and scenarios.

Questions to ask might include:

- "What is the primary goal of the platform for you?"

- "Can you provide an example of how you envision using ESPARTA?"

- "Are there any specific security or privacy concerns?"

- "What features do you think would make ESPARTA stand out?"

- "Do you have a budget or timeline in mind for the project?"

Citations

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# Requirements Engineering — Elicitation & Analysis

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