Tutorial 1: Requirements Elicitation – Functional/Non-Functional Requirements

Question 1: **Atomize the requirements for an Inventory and Asset Tracking System.**

Check that the atomized requirements are also verifiable.

The System may be queried. A query may contain a user number or a serial number. If the query contains a user number, all equipment assigned to that user is reported. If the query contains a serial number, the assignment for that computer is reported. All query results show the name, office and user number of a user, followed by the serial numbers and types of all computers assigned to that user, and the date of each assignment. If a user is not assigned a computer or a computer not assigned to a user, this is reported.

Question 2: **List several non-functional requirements for the above Inventory and Asset Tracking System**

Question 1: Atomize the requirements

This tutorial is an exercise in splitting (atomizing) requirements statements and organizing them in a logical hierarchy. There should also be consideration for how the requirements can be verified.

Requirements specification heuristics:
• Write complete, simple sentences in the active voice.
• Define terms clearly and use them consistently.
• Group related material into sections.
• Express all requirements using the words "must" or "shall".
• Write verifiable requirements.
• Write atomized requirements.

1. Users shall be able to query the System.

    1.1. Users must query the System by user number or by serial number.

        1.1.1. A report for a query containing a user number must report all equipment assigned to the user with that user number.

        1.1.2. A report for a query containing a serial number must report the assignment for the computer with that serial number.

    1.2. All computer assignment reports must have the same format.

        1.2.1. A report of computer assignments must display user data followed by computer data.

1.2.2. The user data display must consist of information about a user, or an indication that the computer is unassigned.

    1.2.2.1. The user data displayed for an assigned computer must consist of user's name.

    1.2.2.2. The user data displayed for an assigned computer must consist of office number.

    1.2.2.3. The user data displayed for an assigned computer must consist of user's number.

    1.2.2.4. If the user is not assigned a computer, the user data display must indicate that no computer is assigned to that user.

1.2.3. The computer data display must consist of a list of data for each computer assigned.

    1.2.3.1.   The data for an assigned computer must consist of the computer's serial number.

    1.2.3.2.   The data for an assigned computer must consist of the types of computers.

    1.2.3.3.   The data for an assigned computer must consist of the date of the assignment.

    1.2.3.4.   If the list of assigned computers is empty, the computer data must indicate that no computer is assigned to the user.

Question 2: Non-functional requirements

Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system

Security: Authentication

Reliability: Consistency, accuracy

Performance: Response time

Maintainability: Easy to restart / recover

Scalability: Up capacity easily

Usability: Friendliness