KariAnn Harjo

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Questions 4\_5

Traceability stands as a vital attribute in the realm of system requirements. Its significance is accentuated when delving into the Verification and Validation (V&V) of these requirements. Essentially, traceability ensures a coherent and clear connection between each requirement's inception and its subsequent stages, including design, implementation, and verification. When checking traceability manually for an existing system, the process is intricate. It commences with pinpointing the source of every requirement, whether rooted in stakeholder needs, market demands, or regulatory mandates. Ensuring each requirement is thoroughly documented is paramount. Subsequently, one must scour the system's documentation, confirming that each requirement traces back to its origin and that the system's design and code correlate explicitly with these requirements.

The role of Computer-Aided Software Engineering (CASE) tools in facilitating traceability is significant. These tools, equipped with features tailored for this purpose, simplify and optimize the traceability process. For instance, they can automatically assign unique identification numbers to each requirement, streamlining the tracking mechanism. Additionally, they facilitate the creation of links between requirements, design elements, code segments, and their corresponding validation tests. Their capability to visually illustrate the interrelations between different system components provides users with an intuitive grasp of the system's architecture, making the task of maintaining and verifying traceability substantially more efficient.