Assignment for Quiz #4

Software Engineering

Section: E

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❖ **What are the SCM layers?**

The System Configuration Management (SCM) process involves five layers to effectively manage and control changes in software development. These layers typically include:

1. Identification: This layer involves identifying the configuration items (CIs) within the software product. It establishes relationships among these items and creates mechanisms for managing multiple levels of control. Baselines are established at specific points in time to serve as the basis for further development.

2. Change Control: Change control is the layer responsible for managing changes to configuration items. It involves a structured process where change requests (CRs) are submitted, evaluated, and approved or rejected by a change control board (CCB). Engineering change requests (ECRs) are generated for approved changes, detailing the modifications to be made and any constraints or criteria to be followed.

3. Version Control: Version control is crucial for managing different versions or specifications of the software product. Each change or update results in a new version, which is tracked and managed through the SCM system. This layer ensures that the evolution of the software is properly documented and controlled.

4. Configuration Auditing: Configuration auditing complements the technical review process by focusing on the correctness of modified configuration objects. Audits ensure that the items in the SCM system are complete, correct, and consistent. Any action

items resulting from the audit are tracked until closure, ensuring the integrity of the software configuration.

5. Reporting: The reporting layer provides accurate status and configuration data to various stakeholders involved in the software development process. This includes developers, testers, end users, customers, and other relevant parties. Reports may include administrative guides, user guides, release notes, FAQs, and installation/configuration guides, among others.

These layers work together to establish a disciplined environment for managing software configurations, controlling changes, and ensuring the quality and integrity of the software product throughout its lifecycle.

❖ **What is change control process?**

The change control process is a systematic approach used to manage and evaluate requests for modifications or alterations to a project or initiative. It forms a crucial part of a broader change management plan and involves several key steps to ensure that changes are thoroughly reviewed, approved, and implemented in a controlled manner. Here's a breakdown of the change control process:

Request Submission: Any stakeholder involved in the project can submit a change request. This request could range from minor adjustments to major revisions in project scope, timelines, deliverables, or resources.

Documentation and Logging: Each change request is documented and logged in a central repository, often referred to as a change log. This log serves as a record of all proposed changes, including details such as the nature of the change, rationale, potential impact, and proposed solutions.

Review and Evaluation: The change request undergoes a thorough review process, involving relevant stakeholders and subject matter experts. They assess the feasibility, implications, risks, and benefits of the proposed change within the context of the project objectives and constraints.

Decision Making: Based on the evaluation, key stakeholders, typically including project managers and sponsors, decide whether to approve, reject, or defer the change request. Approval may be contingent on factors such as budgetary considerations, resource availability, and alignment with project goals.

Implementation Planning: Upon approval, an implementation plan is developed to execute the approved change. This plan outlines the necessary steps, resources, timelines, and responsibilities required to implement the change effectively while minimizing disruptions to ongoing project activities.

Communication and Stakeholder Management: Clear and transparent communication is vital throughout the change control process. Stakeholders are kept informed of the status of their change requests, including any decisions, updates, or revisions. Effective communication helps manage expectations and fosters buy-in from all involved parties.