ADVENTIST UNIVERSITY OF CENTRAL AFRICA

NAMES: NIYITANGA Danny **Date 28/07/2025**
ID: 25588

SOFTWARE QUALITY ASSUARENCE

Preparations Needed for a Design Review in Software Quality Assurance (SQA)

A successful **design review** requires **thorough preparation** to ensure that the session is productive and effective in improving software quality. Here's what needs to be done before the review:

1. Define the Objectives and Scope

- Clearly state **what is being reviewed** (e.g., high-level design, module interface, database schema).
- Define **what decisions or feedback** are expected from the review.

2. Select the Review Team

- Include relevant stakeholders such as:
  - Software architects
  - Developers
  - QA/test engineers
  - Business analysts
  - Project manager
  - (Optional) End-users or clients

3. Distribute Design Documents in Advance

- Send documents **at least a few days before** the review.
- Typical documents include:
  - High-level design (HLD)
  - UML diagrams (class, sequence, activity)
  - Data flow diagrams (DFDs)
  - API/interface specs

- Non-functional requirement mappings

4. Prepare a Design Review Checklist

- Create a checklist to guide the review team. Example checklist items:
  - Are all requirements addressed?
  - Are there any ambiguous or risky design choices?
  - Is the system modular and maintainable?
  - Are coding standards and architecture guidelines followed?

5. Assign Roles for the Meeting

- Define who will do what:
  - **Moderator:** Runs the meeting and keeps it on track.
  - **Presenter:** Explains the design.
  - **Reviewers:** Analyze and critique the design.
  - **Recorder:** Documents feedback and action items.

6. Set Up the Logistics

- Schedule the meeting with enough time allocated (usually 1–2 hours).
- Prepare tools like:
  - Projector/screen sharing
  - Whiteboard or diagram tools
  - Issue tracking system

7. Encourage Pre-Review Feedback

- Ask reviewers to **read and mark up documents** before the meeting.
- This allows deeper discussion and better use of review time.

8. Risk and Impact Analysis (Optional but Recommended)

- Prepare analysis showing how the design handles:
  - Performance
  - Security
  - Fault tolerance
  - Integration

QUESTION 2

Comparison: Formal Design Reviews vs Peer Reviews in Software Quality Assurance (SQA)

Both **formal design reviews** and **peer reviews** are key quality assurance practices, but they differ in **structure, scope, and purpose**. Here's a detailed comparison:

Feature	Formal Design Review	Peer Review
Definition	A structured, planned meeting to evaluate system/software design against requirements.	An informal review where team members check each other's work (code, design, or documents).
Purpose	Detect design flaws early, ensure requirement coverage, and improve overall system architecture.	Identify defects, improve quality, and ensure consistency in code or small design components.
Formality	**Highly formal** with agenda, roles, checklist, and documentation.	**Less formal**, usually initiated by developers without strict procedures.
Participants	Cross-functional team: developers, testers, architects, PMs, etc.	Typically limited to peers (e.g., other developers).
Scope	Focuses on **high-level or detailed design** (e.g., architecture, interfaces).	Often focuses on **code or small sections of design**.
Timing	Conducted **before implementation**.	Can happen during or after implementation (e.g., during pull requests).
Documentation	Outputs include **review minutes**, issues list, and action items.	Minimal or no documentation; often uses comments or informal notes.
Moderator	Led by a **moderator** or review leader.	Usually **self-managed** or developer-led.
Preparation Required	Yes — involves prior distribution of documents and pre-review analysis.	Little or no preparation — may be spontaneous.
Outcome	Formal decisions on design acceptance or required changes.	Quick feedback or approval for minor improvements.