SE Assignment 2
9615
TE Comps B
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1] What is risk assesment in the context of software projects and why is it essential

→ Risk assesment in the context of software project is the process of identifying, analyzing and mitigating potential risks or uncertainties that could affect the successfull completion of a software development projects. It is an essential component of project management.

1) Early problem identification - spot problems before they escalate
2) Efficient resource allocation - allocate resource effectively
3) Cost control - Identifying & managing risks can help control project costs
4) Schedule management - management project timelines
5) Quality assurance - address quality risks to ensure the final product meets expectation
6] Reputation management - protect organization's image & avoid legal issues by managing risks
7] Stake holder communication - keep clients, management & team informed about potential challenges to set realistic expression
8] increasing project success rate - projects that manage risks effectively have a better chance of success

2] Software Configuration Management (SCM) is a set of practices & ING process used to systematically, control, organize and track changes in software projects. Its primary role is to ensure the integrity, stability and quality of a software system throughout its development lifecycle. Here' how SCM contributes to project quality

1) Version control - SCM tracks and manages different versions of software ,ensuring the right version is used, reducing errors.

2) Change management - Organizes changes, ensuring through testing and documentation to prevent defects

3) Traceability - SCM links changes to specific requirements, enchancing understanding and meeting projects requirements

4) Configuration management - it controls all software components, preventing configuration - release errors in each release

5) Parallel development - SCM allows multiple developers to work concurrently without conflicts, maintaining code quality

6) Automated Build & Deployment : Integration with SCM ensures consistent, error - free software building and development

7] Backup & Recovery - SCM provides backup & recovery mechanisms to protect against data loss

8] Auditing & Compliance - Tracks changes for auditing & regulatory compliance, crucial is regulated industries to ensure quality & compliance standards

3] Formal Technical Reviews (FTR) are systematic, well structured processes for reviewing & evaluating various aspects of software development, such as requirements, design, code & documentation. FTRs play a crucial role in ensuring software quality and reliability through the following mechanism

1. Error detection & prevention: FTRs catch and prevent errors early in development
2. Knowledge sharing: Team collaboration enhances understanding
3. Compliance: Ensures adherence to coding & design standards
4. Requirement Validation: Verifies clear & complete requirement
5. Risk Mitigation: Addresses potential issues before they escalate
6. Consistency: Enforces clear documentation & communication
7. Quality improvement. Feedback loop leads to ongoing improvement
8. Enhanced process: structured reviews cover all aspects thoroughly, boosting reliability

4] A formal walkthrough in the context of a software project is a structured structured and systematic process for reviewing and evaluating software artifacts such as code, design documentation or requirements. The primary goal is to identify issues, ensure quality and improve the overall project. The following is the step by step process for conducting a formal walkthrough

1) Preparation: preparing the artifact & assembling a review team
2) Scheduling: scheduliy a meeting and setting an agenda
3) Conducting the walkthrough: conducting a structured review where team members discuss and document issues
4) Resolution: Resolving issues and assigning responsibilities for improvements
5) Documentation: Documenting the review
6) Follow-up - After the review, follow up on the assigned actions
7) Closure: closing the review process once all issues are addressed
8) Feedback & continous improvement: Gathering feedback to improve future reviews

5] Considering software reliability is crucial when analyzing potential risks in a project for several reasons

a) User expectations: users expect software to be reliable ensure software meets user expectations
b) Business impact: Software failures can have significant financial ~~expectativs~~ implications. Prevent financial losses and extra costs
c) Reputation: Safeguard the organization's image
d) Maintenance cost: Reducing long-term support expenses
e) Safely critical applications: Avoid catastrophic consequences
~~f)~~, ~~Mai~~ Regulatory compliance: Ensure adherence to industry regulations
g) Data integrity: Protect data from corruption or loss
h) Market competition: Stay competitive with reliable software
i) Customer satisfaction: Enhance user experience and loyalty
j) Project success: Critical for successful project outcomes