Fr. Conceicao Rodrigues College of Engineering,Mumbai

SOFTWARE ENGINEERING (CSC601)

Assignment -II

Date: 17-10-23

CO5: Identify risks, manage the change to assure quality in software projects.

Assignment 2

1. What is risk assessment in the context of software projects, and why is it essential?
2. Explain the concept of software configuration management and its role in ensuring project quality.
3. How do formal technical reviews (FTR) contribute to ensuring software quality and reliability?
4. Describe the process of conducting a formal walkthrough for a software project.
5. Why is it important to consider software reliability when analyzing potential risks in a project?

Rubrics :

Indicator	**Average**	**Good**	**Excellent**	**Marks**
Organization (2)	Readable with some mistakes and structured (1)	Readable with some mistakes and structured (1)	Very well written and structured (2)	
Level of content(4)	Minimal topics are covered with limited information (2)	Limited major topics with minor detailsare presented(3)	All major topics with minor details are covered (4)	
Depth and breadth of discussion(4)	Minimal points with missing information (1)	Relatively more points with information (2)	All points with in depth information(4)	
Total Marks(10)				

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TE COMPS B
9628

SE Assignment - 2

Q1] Risk assessment in the context of software project is the process of identifying, analysing & prioritizing potential risk and uncertainties that could affect the successful completion of a software development project. These risk can range from technical issues and resource constraints to change in project requirement, market condition and external factors. The primary goal of risk assessment is to proactively manage and mitigate these risks to ensure the projects objectives are met. Following are key reasons as to why risk assessment is essential in software projects:-

- 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 cost.
- 4] Schedule management:- maintaining project timelines.
- 5] Quality Assurance:- address quality risks to ensure the final product meet expectations.
- 6] Reputation management:- Protect organization's image & avoid legal issues by managing risks.
- 7] Stake holder communication:- Keep clients, management & team informed about the potential challenges to set realistic expressions.
- 8] Increasing project success rate:- projects that manage risks effectively have a chance of success.

Q2] Software Configuration Management (SCM), is a set of practices & 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 life cycle.

- Version control:- Scm tracks and manages different version of software ensuring the right version is used, reducing errors.

- Change management:- Organizes changes, ensuring through testing and documentation to prevent defects.
- Traceability:- SCM links changes to specific requirements, enhancing understanding & meeting project requirements.
- Configuration management:- It controls all software components, preventing configuration - release errors in each release.
- Parallel development:- SCM allows multiple developers to work concurrently without conflicts, maintaining code quality.
- Automated Build & Development:- Integration with SCM ensures consistent, error-free software building and development
- Backup & Recovery:- SCM provides this mechanism to protect data
- Auditing & complaince:- Tracks changes for auditing & regulatory complaince, crucial in regulated industries to ensure quality & complaince

Q3] Formal Technical Review (FTR) are systematic, well structured process for reviewing & evaluting various aspects of software development, such as requirements, design, code & documentation. FTRs play a crucial role in ensuring software quality & reliability through following mechanisms:-

1] Error detection & prevention.
2] Knowledge Sharing
3] Complaince
4] Requirement validation.
5] Risk mitigation.
6] Consistency., Quality improvement & Enhanced process.

Q4] A formal walkthrough in the context of a software project is a structured and systematic process for reviewing & evaluating ~~software~~ ~~Stored~~ software artifacts such as code, designing document or requirements. The primary goal is to identify issues, ensure quality & improve project overnight.

1] Preparation:- Preparing the artifact & assembling a review team.
2] Scheduling: Scheduling a meeting & setting an agenda
3] Conducting a walk through: members discuss & document issue.
4] Resolution:- Resolving issue & assigning responsibilities
5] Documentation:- Documenting the review
6] Follow ups:- After the review, follow up on the assigned action
7] Closure:- Closing the reviewing process once all issues are addressed.
8] Feedback & continuous improvement:- Gathering feedback to improve future reviews.

Q5] Considering software reliability is crucial when analysing potential risks in a project for several reasons.
a] User Expectations:- Users expect software to be reliable -
b] Business Impact:- Software failure can have financial implications
c] Reputation:- Safeguard the organization's image.
d] Maintainace cost:- Reducing long term cost
e] Safety Critical application:- Avoid catastrophic consequences
f] Regulatory compliance:- Ensure adherence to industry regulations
g] Data integrity:- Protect data from loss or corruption.
h] Market competition:- Stay competitive with reliable software
i] Customer satisfaction:- Enhance user experience & loyality.
j] Project Success:- Critical for successful project outcomes.