

Batch: B2 Roll No.: 16010421059 Experiment No.: 3

Aim: To Prepare Software change request and report in SCM

Resources needed: Internet Explorer, LaTeX Editor _____

Theory

Software change management is an umbrella activity that aims at maintaining the integrity of software products and items. Change is a fact of life but uncontrolled change may lead to havoc and may affect the integrity of the base product. Software development has become an increasingly complex and dynamic activity. Software change management is a challenging task faced by modern project managers, especially in a environment where software development is spread across a wide geographic area with a number of software developers in a distributed environment. Enforcement of regulatory requirements and standards demand a robust change management. The aim of change management is to facilitate justifiable changes in the software product.

The following are the objectives of software change management process:

1. **Configuration identification:** The source code, documents, test plans, etc. The process of identification involves identifying each component name, giving them a version name (a unique number for identification) and a configuration identification.
2. **Configuration control:** Controlling changes to a product. Controlling release of a product and changes that ensure that the software is consistent on the basis of a baseline product.
3. **Review:** Reviewing the process to ensure consistency among different configuration items.
4. **Status accounting :** Recording and reporting the changes and status of the components.
5. **Auditing and reporting:** Validating the product and maintaining consistency of the product throughout the software life cycle.

Software Change Request Format

-
- 1.0 Change request Identification
 - 1.1 Name, identification and description of software configuration item(s): The name, version numbers of the software configuration is provided. Also, a brief description of the configuration item is provided.
 - 1.2 Requester and contact details: The name of the person requesting the change and contact details
 - 1.3 Date, location, and time when the change is requested
 - 2.0 Description of the change
 - 2.1 Description : This section specifies a detailed description of the change request.
 - 2.1.1 Background Information, Background information of the request.
 - 2.1.2 Examples: Supporting information, examples, error report, and screen shoots
 - 2.1.3 The change : A detailed discussion of the change requested.
 - 2.2 Justification for the change : Detailed justification for the request.
 - 2.3 Priority : The priority of the change depending on critical effect on system functionalities
-

Software Change Report Format

-
1. Change report Identification
 - 1.1 Name, identification and description of software configuration item(s): The name, version numbers of the software configuration item and a brief description of it.
 - 1.2 Requester: The name and contact details of the person requesting the change.
 - 1.3 Evaluator : The name of the person or team who evaluated the change request.
 - 1.4 Date and time : When change report was generated.
 - 2.0 Overview of changes required to accommodate request
 - 2.1 Description of software configuration item that will be affected
 - 2.2 Change categorization : Type of change, in a generic sense
 - 2.3 Scope of the change : The evaluator's assessment of the change.
 - 2.3.1 Technical work required including tools required etc. A description of the work required to accomplish the change including required tools or other special resources are specified here
 - 2.3.2 Technical risks : The risks associated with making the change are described.
 - 3.0 Cost Assessment : Cost assessment of the requested change including an estimate of time required.
 - 4.0 Recommendation
 - 4.1 Evaluator's recommendation : This section presents the evaluator's recommendation regarding the change
 - 4.2 Internal priority: How important is this change in the light of the business operation and priority assigned by the evaluator.
-

Procedure:

Identify any two change requests and formulate prepare Software Change Request Format and Software Change Report Format

Results: Software Change Request Format and Software Change Report Format.

1st change:

Software Change Request Format

1. Name, Identification, and Description of Software Configuration Item(s):
 - Software Configuration Item: Virtual Internship Platform module (QuirkIQ v1.0)

- Description: The Virtual Internship Platform module provides interactive simulations and real-world scenarios related to science concepts covered in the curriculum.

1.2 Requester and Contact Details:

- Requester: Manager
- Contact Details: manager@somaiya.edu

1.3 Date, Location, and Time When the Change is Requested:

- Date: 12/04/24
- Location: Vidyavihar
- Time: 15:33pm

2.0 Description of the Change

2.1 Description:

- The change request entails enhancing the Virtual Internship Platform module to include additional interactive simulations and real-world scenarios related to science concepts covered in the curriculum.

2.1.1 Background Information:

- The enhancement aims to provide students with a more immersive learning experience and aligns with the project's objective of enhancing science education through technology.

2.1.2 Examples:

- Supporting information includes stakeholder feedback expressing interest in additional simulation scenarios and the need for an enriched learning experience.
- Error reports or issues identified by users may highlight the limitations of the current platform in providing practical learning opportunities.

2.1.3 The Change:

- Detailed discussion of the requested change includes the addition of new simulation scenarios, updates to the user interface, and backend infrastructure modifications to accommodate the new features.

2.2 Justification for the Change:

- The enhancement is justified by its potential to improve student engagement and learning outcomes. It aligns with the project's goal of providing a comprehensive and interactive educational platform.

2.3 Priority:

- The priority of the change request is categorized as high due to its critical impact on enhancing the functionality and effectiveness of the Virtual Internship Platform module.__

Software Change Report Format

1.0 Change Report Identification

1.1 Name, Identification, and Description of Software Configuration Item(s):

- The software configuration item affected by the change request is the Virtual Internship Platform module within the QuirkIQ platform, version 1.0.
- Description: The Virtual Internship Platform module provides interactive simulations and real-world scenarios related to science concepts covered in the curriculum. It serves as a key component of the QuirkIQ platform, enhancing the learning experience for users.

1.2 Requester:

- The change request is raised by the project manager who oversees the development and implementation of QuirkIQ. Contact details for the requester are provided to facilitate communication and clarification regarding the change request.

1.3 Evaluator:

- The change request is evaluated by [Insert Name or Team Name], responsible for assessing the feasibility, impact, and implications of proposed changes to the QuirkIQ platform.

1.4 Date and Time:

- The change report is generated on 13th April 4:00pm documenting the evaluation and recommendation process for the requested changes to the Virtual Internship Platform module.

2.0 Overview of Changes Required to Accommodate Request

2.1 Description of Software Configuration Item(s) Affected:

- The requested changes primarily affect the Virtual Internship Platform module, requiring enhancements to accommodate additional interactive simulations and real-world scenarios. These changes aim to enrich the learning experience for users by providing practical applications of theoretical concepts.

2.2 Change Categorization:

- Type of Change: Enhancement
- Scope of Change: Expansion of functionality to include additional interactive simulations and real-world scenarios related to science concepts covered in the curriculum. The change is categorized as an enhancement to improve the educational value and effectiveness of the QuirkIQ platform.

2.3 Scope of the Change:

- Technical Work Required: The implementation of the requested changes involves additional development efforts to design and implement new simulation scenarios. This includes tasks such as software development, graphic design, and content creation. Tools such as integrated development environments (IDEs), graphic design software, and testing frameworks may be required to facilitate the development process.
- Technical Risks: Risks associated with the change include potential compatibility issues with existing features, increased complexity of the platform, and potential performance impacts. Careful planning and testing are necessary to mitigate these risks and ensure the successful integration of new features.

3.0 Cost Assessment:

- A preliminary cost assessment is provided based on the complexity of the enhancement and resource availability. The assessment includes estimates of development costs, including labor and materials, as well as potential additional expenses such as licensing fees for third-party tools or services. Additionally, an estimate of the time required for development, testing, and implementation is provided to facilitate resource allocation and project planning.

4.0 Recommendation

4.1 Evaluator's Recommendation:

- The evaluator recommends proceeding with the requested enhancement to the Virtual Internship Platform module, considering its alignment with project objectives and stakeholder interests. The proposed changes are expected to enhance the educational value and usability of the QuirkIQ platform, contributing to its overall success and effectiveness in facilitating science education.

4.2 Internal Priority:

- The change is considered important in the context of business operations and project priorities. Its implementation is recommended to enhance the functionality and value proposition of the QuirkIQ platform. Allocating resources and prioritizing tasks accordingly will ensure timely and successful implementation of the requested changes.____

2nd Change:

Software Change Request Format

Software Change Request Format

1.0 Change Request Identification

1.1 Name, Identification, and Description of Software Configuration Item(s):

- Software Configuration Item: Language Translation Services Integration for QuirkIQ platform (Version: 1.0)

- Description: The Language Translation Services Integration entails the incorporation of functionality within the QuirkIQ platform to provide content in multiple languages. This includes enabling users to access educational materials, instructions, and interface elements in their preferred language, thereby enhancing the platform's accessibility and user experience.

1.2 Requester and Contact Details:

- Requester: Manager
- Contact Details: manager@somaiya.edu

1.3 Date, Location, and Time When the Change is Requested:

- Date: 13th April
- Location: Vidyavihar
- Time: 2:00 pm

2.0 Description of the Change

2.1 Description:

- The change request aims to integrate language translation services into the QuirkIQ platform to address the needs of a diverse user base. This enhancement will enable users from different linguistic backgrounds to access educational content in their native language, thereby promoting inclusivity and facilitating a more personalized learning experience.

2.1.1 Background Information:

- The need for language translation services arises from feedback received from users indicating language barriers as a significant obstacle to accessing educational content effectively. Additionally, market research and user surveys have highlighted the growing demand for multilingual support in educational platforms.

2.1.2 Examples:

- Supporting information includes user testimonials, feedback forms, and user support tickets expressing difficulties faced due to language barriers.
- Error reports and user complaints related to the inability to understand content in the default language may further underscore the necessity for language translation services.

2.1.3 The Change:

- The change involves integrating third-party language translation APIs or libraries into the QuirkIQ platform. This includes implementing backend functionalities to facilitate language detection, translation, and rendering of content in multiple languages. Additionally, modifications to the user interface may be

necessary to incorporate language selection options and accommodate dynamic content translation.

2.2 Justification for the Change:

- The integration of language translation services aligns with QuirkIQ's mission to provide an inclusive and accessible learning platform for users worldwide. By offering content in multiple languages, QuirkIQ aims to break down language barriers and ensure that educational resources are accessible to a diverse audience. This enhancement reflects QuirkIQ's commitment to promoting diversity and facilitating equitable access to quality education.

2.3 Priority:

- The change request is categorized as high priority due to its significant impact on improving the platform's accessibility and user experience. Addressing language barriers is essential for enhancing user engagement, satisfaction, and retention, making it imperative to prioritize the integration of language translation services within the QuirkIQ platform.

Impact Analysis:

- Integrating language translation services will involve significant technical work, including the integration of third-party APIs or libraries, development of language detection algorithms, and modifications to the user interface. This may require additional development resources, testing efforts, and deployment considerations to ensure seamless integration and optimal performance.

Cost and Timeline Estimate:

- An assessment of the cost and timeline implications will be conducted to evaluate the feasibility of implementing the language translation services integration. This will include estimating expenses related to acquiring and integrating third-party APIs or libraries, development efforts, testing activities, and deployment strategies. Additionally, a timeline will be established to outline key milestones, deliverables, and project dependencies, ensuring timely and efficient execution of the change request.

____ Software Change Report Format

1.0 Change Report Identification

1.1 Name, Identification, and Description of Software Configuration Item(s):

- The software configuration item affected by the change request is the Language Translation Services Integration for QuirkIQ platform (Version: 1.0).

- Description: The Language Translation Services Integration entails the incorporation of functionality within the QuirkIQ platform to provide content in multiple languages. This includes enabling users to access educational materials, instructions, and interface elements in their preferred language, thereby enhancing the platform's accessibility and user experience.

1.2 Requester:

- The change request is raised by Manager who serves as the project manager or stakeholder overseeing the development and enhancement of the QuirkIQ platform.
- Contact Details: manager@somaiya.edu

1.3 Evaluator:

- The change request is evaluated by Higher Authorities, responsible for assessing the feasibility, impact, and implications of proposed changes to the QuirkIQ platform. The evaluator may be a designated team or individual responsible for reviewing and analyzing change requests to determine their viability and alignment with project goals.

1.4 Date and Time:

- The change report is generated on 13th April 2024 at 3:00pm documenting the evaluation and recommendation process for the requested changes to the Language Translation Services Integration for QuirkIQ platform.

2.0 Overview of Changes Required to Accommodate Request

2.1 Description of Software Configuration Item(s) Affected:

- The requested change affects the QuirkIQ platform's core functionality, specifically the integration of language translation services to support content delivery in multiple languages. This involves modifications to the platform architecture, user interface, and backend systems to facilitate language detection, translation, and rendering of content.

2.2 Change Categorization:

- The change is categorized as an enhancement to the platform's functionality, aimed at improving user experience and accessibility by offering multilingual support. It falls under the category of functional enhancement, as it adds new features and capabilities to the QuirkIQ platform.

2.3 Scope of the Change:

- The scope of the change encompasses various aspects, including technical implementation, user interface modifications, and potential impacts on system performance and stability. It involves integrating third-party language translation APIs or libraries into the platform architecture and developing additional functionalities to support language selection and dynamic content translation.

2.3.1 Technical Work Required:

- The technical work required for implementing the change includes integrating language translation APIs or libraries into the platform, developing language detection algorithms, and modifying the user interface to accommodate language

selection options. This may involve coding, testing, debugging, and deployment tasks using appropriate development tools and frameworks.

2.3.2 Technical Risks:

- Risks associated with making the change include potential compatibility issues with existing platform components, performance degradation due to increased processing overhead, and challenges related to data integrity and security during language translation processes. Mitigation strategies and contingency plans should be identified to address these risks effectively.

3.0 Cost Assessment:

- The cost assessment includes estimating expenses associated with acquiring and integrating language translation APIs or libraries, development efforts, testing activities, and deployment strategies. It also considers indirect costs such as training, maintenance, and support for the new functionality. A preliminary estimate of the time required for implementation is provided to facilitate resource allocation and project planning.

4.0 Recommendation

4.1 Evaluator's Recommendation:

- Based on the evaluation of the change request, the evaluator recommends proceeding with the Language Translation Services Integration for QuirkIQ platform. The proposed enhancement aligns with project objectives and stakeholder requirements, offering significant benefits in terms of improved user accessibility, engagement, and global reach.

4.2 Internal Priority:

- The change is deemed essential in the context of business operations and project priorities, given its potential to enhance the platform's competitive advantage, user satisfaction, and overall effectiveness in delivering educational content to a diverse global audience. It is recommended to prioritize the implementation of this change to capitalize on its strategic importance and maximize its impact on platform performance and user experience.

Questions:

1. What is baseline? Explain the process of changes to baseline in detail.

Ans:

A baseline in software development refers to a stable version of a system, software product, or document that has been formally reviewed and agreed upon by stakeholders. It serves as a reference point for future development and is used to track changes and measure progress throughout the software development lifecycle. Baselines are typically established at key milestones in the development

process to capture the state of the software or documentation at that point in time.

The process of changes to a baseline involves several steps, including identification, evaluation, implementation, and documentation of modifications made to the baseline. Below is a detailed explanation of each step:

1. Identification of Changes:

- Changes to a baseline can arise from various sources, such as customer feedback, bug reports, new requirements, or technological advancements.
- The first step in the process is to identify the specific changes that need to be made to the baseline. This may involve analyzing change requests, defect reports, or stakeholder feedback to determine the nature and scope of the modifications required.

2. Evaluation of Changes:

- Once changes have been identified, they need to be evaluated to assess their impact on the baseline and overall project objectives.
- Evaluation involves considering factors such as the feasibility of implementing the changes, their alignment with project goals and requirements, potential risks and dependencies, and resource constraints.
- Changes may be prioritized based on their urgency, importance, and potential impact on project timelines and deliverables.

3. Implementation of Changes:

- After changes have been evaluated and prioritized, the next step is to implement them into the baseline.
- Implementation may involve coding, testing, debugging, and integrating the changes into the existing system or documentation.
- Developers and other team members work collaboratively to ensure that changes are accurately implemented and meet the specified requirements and quality standards.
- Version control systems are used to manage and track changes, ensuring that modifications are properly documented and reviewed before being incorporated into the baseline.

4. Documentation of Changes:

- Throughout the process, changes made to the baseline must be carefully documented to maintain a clear audit trail and facilitate communication among team members and stakeholders.
- Documentation includes recording the details of each change, such as its purpose, scope, implementation approach, and any associated risks or considerations.

- Documentation should be comprehensive, organized, and accessible to all relevant parties involved in the project.

5. Review and Approval:

- Once changes have been implemented and documented, they undergo a formal review and approval process.
- Reviews may involve peer review, quality assurance testing, or validation by stakeholders to ensure that the changes meet the specified requirements and do not introduce unintended side effects.
- Approval is typically granted by designated individuals or committees responsible for overseeing the project and ensuring that changes align with project objectives and quality standards.

6. Updating the Baseline:

- Once changes have been reviewed and approved, they are incorporated into the baseline, effectively updating it to reflect the latest state of the software or documentation.
- The updated baseline serves as the new reference point for future development activities and is used to measure progress and track further changes throughout the project lifecycle.

Outcomes: CO3 Demonstrate requirements, modeling and design of a system

Conclusion: Thus with the help of this experiment we successfully executed the Preparation of Software change request and report in SCM.

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of faculty in-charge with date

References:

Books:

1. Roger S. Pressman, Software Engineering: A practitioners Approach, 7th Edition, McGraw Hill, 2010.
2. Ian Sommerville, Software Engineering, 9th edition, Addison Wesley, 2011.
3. John M. Nicholas, "Project Management for Business and Technology", 2nd edition, Pearson Education