Project Phase II

Topic:

QV

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Submitted to: **Date:**

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QV Scribe Tool Evaluation Report

QV Scribe is a requirement authoring and analysis tool that uses Natural Language Processing (NLP) to proactively check for compliance with best requirements analysis practices and industry frameworks. It has been proven to reduce time and cost of reviewing requirements by 50% or more.

Metrices for Requirement Analysis

- **Quality Analysis:** Checks for proper use of imperatives, optional escape clauses, superfluous infinitives, data-driven quality indicators, immeasurable quantifications, and weak, vague, and subjective words.

- **EARS Templating**: Provides automated templates for Ubiquitous, State-Driven, Event-Driven, Optional Feature, and Unwanted Behaviour requirements.

- **INCOSE Guidelines**: Uses NLP to assess compliance with the INCOSE Guide for Writing Requirements (GFWR). There are nine characteristics that every requirement should possess. They are

  ✓ Necessary

  ✓ Appropriate

  ✓ unambiguous,

  ✓ Complete

  ✓ Singular

  ✓ Feasible

  ✓ verifiable,

- ✓ Correct

- ✓ conforming.

- **Similarity**: Compares requirements based on characters (lexical similarity) and meaning (semantic similarity).

Benefits/Result it gave

- Improves the quality and consistency of requirements.

- Reduces the time and cost of requirement review.

- Helps users avoid common errors.

- Standardizes the authoring process.

- Facilitates collaboration and communication.

Demo Plan

The demo I use an existing requirement document example to show a variety of issues and demonstrate how QVscribe addresses them.

1. **Quality Score:** The presenter show how QVscribe highlights issues and gives suggestions based on industry best practices. The presenter will also explain QVscribe's automated EARS templating feature.
2. **Consistency Analysis**: The presenter show an example of a unit consistency issue and explain the value of this analysis.
3. **Similarity Analysis**: The presenter go into Similarity Analysis and provide an explanation of lexical and semantic similarity.
4. **Generating a Report:** The presenter generate a PDF report which includes all of QVscribe's analysis, including a breakdown of all the Quality Indicators, each requirement highlighted to show any issues, Unit Consistency, Term Consistency, and a list of all the terms in the document.

Requirements For Learnova using QVscribe

QVscribe chelp to make a system a good system (learnova)by:

- **Improving the quality of requirements**. QVscribe help users to write clear, concise, and complete requirements that are consistent with best practices. This can help to reduce the number of errors in the system, improve its functionality, and make it easier to maintain.

- **Reducing the time and cost of requirement review**. QVscribe can automatically check requirements for compliance with best practices and industry frameworks. This can help to reduce the time and cost of manual review, and free up resources to focus on other tasks.
- **Helping users to avoid common errors.** QVscribe identify common errors in requirements, such as ambiguous language, missing information, and unrealistic expectations. This can help users to avoid these errors in the first place, and save time and effort later on.
- **Standardizing the authoring process**. QVscribe's templates and automated checks can help to standardize the authoring process across multiple teams and individuals. This can help to improve the quality and consistency of requirements, and make them easier to understand and review.

Here are some specific examples of how QVscribe can help to make a system a good system:

- QVscribe to ensure that learnova requirements are clear, concise, and complete. This can help to reduce the number of bugs in the software and make it easier to maintain.
- QVscribe ensure that learnova requirements comply with industry standards and best practices. This can help to improve the safety and reliability of the system.
- QVscribe ensure that learnova requirements are consistent with its production processes. This can help to improve the quality of the products and reduce the cost of manufacturing.

Overall, QVscribe is a valuable tool that help Learnova to improve the quality of their systems by improving the quality of their requirements.

Requirements of Learnova condidering the QV scribe instructions

Functional Requirements using QV:

1. User Authentication and Authorization:

- Users must be able to securely create accounts and log in.
- Teachers should have the capability to create and manage classes.
- Students must be able to join classes and access learning materials.

2. Personalized Learning Paths:

- The system shall provide tools for teachers to establish personalized learning paths for each student based on their needs and abilities.
- Students should be able to view their learning paths and monitor their progress.

3. Real-time Feedback:

- Teachers must have the ability to give real-time feedback on students' assignments and assessments.
- Students should promptly receive notifications and feedback.

4. Collaboration Tools:

- The system shall offer collaborative features, including discussion boards and group projects.
- Users should be able to interact with each other and teachers through messaging and chat.

5. Content Accessibility:

- Learning materials, encompassing documents, videos, and assignments, should be accessible from any location with an internet connection.
- Content should be systematically organized and easy to search.

6. Assessment and Grading:

- The system must allow teachers to create quizzes and assessments.
- Students should receive automated grades and performance reports.

Non-Functional Requirements using QV:

1. Performance:

- The system must respond to user interactions within 2 seconds.

- It should support a concurrent user load of at least 1000 users.

2. Security:

- User data and learning materials must be stored and transmitted securely.
- The system should be resistant to common security threats such as SQL injection and cross-site scripting.

3. Scalability

- The system must be scalable to accommodate future growth.
- It should handle an increasing number of users and courses without a significant drop in performance.

4. Reliability:

- The system should have a minimum uptime of 99.9%.
- Regular backups and disaster recovery procedures must be in place.

Conclusion

QVscribe is a valuable tool for any organization that needs to produce high-quality requirements. It can help users improve the quality and consistency of their requirements, reduce the time and cost of requirement review, and avoid common errors.

QVscribe's automated features save users time and effort, and its reports provide clear and actionable insights. QVscribe is also flexible and customizable, so it can be tailored to the specific needs of any organization.