



E-Portfolio Activity - Reflection on Software Quality

Course: MSc Computer Science

Module: Software Engineering Project Management

Assignment: ePortfolio

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Post:

Cavano & McCall (1978) stated that although there are critical problems always encountered within software solutions, they continue to be a critical element in large scale systems due to the cost and critical functions they perform. As such, there should be a high level of Software Quality in order to ensure that the longevity and maintainability of a solution are sustained.

McCall et al. (1977) identified a series of quality factors, which jointly comprised the perception of software quality. In order to avoid ambiguity, the quality factors were grouped into a total of 17 categories, including Reliability, Maintainability, Testability, Modularity and Documentation. All of which, are key factors, which, to this day, I would still consider as a vital aspect to a delivered software solution being considered as 'High Quality'.

A separate paper, produced by Kitchenham & Pfleeger (1996) instead categorises the software quality into distinct views to avoid ambiguity within organisations:

- Transcendental View - Quality can be recognised but not defined.
- User View - Fitness for purpose.
- Manufacturing View - Quality is seen as conformance to specification.
- Product View - Quality is tied to the inherent characteristics of the product.
- Value-Based View - Quality is dependent on the amount a customer is willing to pay.

For each of the above views, the overall perception of software quality will be completely different. Personally, I believe that a combination of the User &

Manufacturing views should be used when quantifying software quality as it shows conformance to requirements, which is a key aspect.

This paper also introduces us to the ISO 9216 list of Quality Characteristics, which appear visually similar to those listed in McCall et al.'s paper in 1977:

- Functionality
- Reliability
- Usability
- Efficiency
- Maintainability
- Portability

References:

Cavano, J. McCall, J. (1978) A framework for the measurement of software quality.

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McCall, J. A., Richards, P. K., & Walters, G. F. (1977) Factors in Software Quality, Concept and Definitions of Software Quality. General Electric Company.