CSCW-415: Software Quality and Metrics

Labs

Lab 1: Models of Software Quality Activity:

Read the pages 443 to 448 (Fenton book). The text is about early models of Software Quality especially Boehm’s model and McCall models. It also discusses the ISO model and the decomposition of one factor maintainability.

Tasks:

Task 1:

Read, understand, discuss and write a summary (one paragraph) of what you have read.

There were many attempts at different quality models, some include but are not limited to: McCall, Boehm, and ISO. Each describing the different qualities of software to be measured. With McCall and Boehm separating them into ‘factors’ and ‘subfactors/criteria’, due to their belief that factors are too general. There are 2 approaches to monitor software quality, the ‘fixed model’ approach such as McCall and Boehm, or ‘define your own model’ approach, such as the ISO which decomposes quality into 8 characteristics.

Task 2:

After completing task 1, answer the following questions:

Question 1:

In Boehm’s and McCall Software Quality Models why Quality Factors need to be subdivided into Quality subfactors or Quality Criteria?

Both models assume that the quality factors are too general and vague and aren't specific enough to be meaningful or measured directly.

Question 2:

What is the metric to measure fault rate? (Ref: decomposition of maintainability factor)

Fault counts

Question 3:

Can we not adopt Boehm’s and McCall models? If yes, then how can we measure the quality attributes of a product?

Yes, we can use other and more modern models such as ISO.

Task 3 (optional: depending upon time):

Read Example 10.2 and try to solve it with different values of YES (1) and NO (0) for completeness, traceability, and consistency. It means compute the values of x, y and z. Then using the same formula for correctness “(x+y+z)/3” find out the result.