

Software Quality

Software quality product is defined in term of its fitness of purpose. That is, a quality product does precisely what the users want it to do. For software products, the fitness of use is generally explained in terms of satisfaction of the requirements laid down in the SRS(Software Requirement Specification) document. Although "fitness of purpose" is a satisfactory interpretation of quality for many devices such as a car, a table fan, a grinding machine, etc. for software products, "fitness of purpose" is not a wholly satisfactory definition of quality.

Example: Consider a functionally correct software product. That is, it performs all tasks as specified in the SRS document. But, has an almost unusable user interface. Even though it may be functionally right, we cannot consider it to be a quality product.

Factors of Software Quality

The modern read of high-quality associates with software many quality factors like the following:

1. **Portability:** A software is claimed to be transportable, if it may be simply created to figure in several package environments, in several machines, with alternative code merchandise, etc.
2. **Usability:** A software has smart usability if completely different classes of users (i.e. knowledgeable and novice users) will simply invoke the functions of the merchandise.
3. **Reusability:** A software has smart reusability if completely different modules of the merchandise will simply be reused to develop new merchandise.
4. **Correctness:** Software is correct if completely different needs as laid out in the SRS document are properly enforced.
5. **Maintainability:** A software is reparable, if errors may be simply corrected as and once they show up, new functions may be simply added to the merchandise, and therefore the functionalities of the merchandise may be simply changed, etc
6. **Reliability.** Software is more reliable if it has fewer failures. Since software engineers do not deliberately plan for their software to fail, reliability depends on the number and type of mistakes they make. Designers can improve reliability by ensuring the software is easy to

implement and change, by testing it thoroughly, and also by ensuring that if failures occur, the system can handle them or can recover easily.

7. **Efficiency.** The more efficient software is, the less it uses of CPU-time, memory, disk space, network bandwidth, and other resources. This is important to customers in order to reduce their costs of running the software, although with today's powerful computers, CPU time, memory and disk usage are less of a concern than in years gone by.

Software Quality Management System

Software Quality Management System contains the methods that are used by the authorities to develop products having the desired quality. It consists of

- **Managerial Structure and Individual Responsibilities**
- **Quality System Activities**

Managerial Structure and Individual Responsibilities

A quality system is the responsibility of the organization as a whole. However, every organization has a sever quality department to perform various quality system activities. The quality system of an arrangement should have the support of the top management. Without help for the quality system at a high level in a company, some members of staff will take the quality system seriously.

Quality System Activities

The activities which each quality system must have been

- Project Auditing.
- Review of the quality system.
- It helps in the development of methods and guidelines.

Evolution of Quality Management System

Quality Systems are basically evolved over the past some years. The evolution of a Quality Management System is a four-step process.

- Inspection
- Quality control
- Quality Assurance

- Total Quality Management(TQM)

1. This involved inspection of the correctness & quality of the process output at the producer's end or the receiver's end.
2. The main task of quality control is to detect defective devices, and it also helps in finding the cause that leads to the defect. It also helps in the correction of bugs.
3. Quality Assurance helps an organization in making good quality products. It also helps in improving the quality of the product by passing the products through security checks.
4. Total Quality Management(TQM) checks and assures that all the procedures must be continuously improved regularly through process measurements.

