

What is a “crisis”?

The inability of a community to solve its most fundamental problems

- The Crisis in software engineering
 - Inability to deliver software that is
 - In accordance with specifications and expectations
 - On time
 - On budget
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Problems with software projects started early on:

- Over-budget;
- Over-time;
- Low quality software (inefficient, buggy, difficult to maintain);
- Not meeting requirements;
- Unmanageable projects;
- Software was never delivered.

S/W crisis from programmer point of view:

- i) Problem of compatibility.
- ii) Problem of Portability.
- iii) Proclaiming documentation.
- iv) Problem of pirated s/w.
- v) Problem in co-ordination of work of different people.
- vi) Problem of proper maintenance.

S/W crisis from user point of view:-

- i) s/w cost is very high.
- iii) Lack of development specification.
- iv) Problem of different s/w versions.
- v) Problem of bugs or errors.

Software Quality Attributes:

Hewlett-Packard developed a set of software quality attributes that has been given the acronym FURPS—functionality, usability, reliability, performance, and supportability.

The FURPS quality attributes represent a target for all software design:

- **Functionality** is assessed by evaluating the feature set and capabilities of the program, the generality of the functions that are delivered, and the security of the overall system.
- **Usability** is assessed by considering human factors , overall aesthetics, consistency, and documentation.
- **Reliability** is evaluated by measuring the frequency and severity of failure, the accuracy of output results, the mean-time-to-failure (MTTF), the ability to recover from failure, and the predictability of the program.
- **Performance** is measured using processing speed, response time, resource consumption, throughput, and efficiency.
- **Supportability** combines extensibility, adaptability, and serviceability. These three attributes represent a more common term, maintainability— and in addition, testability, compatibility, configurability, the ease with which a system can be installed, and the ease with which problems can be localized.