Design is the meaningful way of representing the customer’s requirements that is to be built. It is also the method of linking quality against a set of predefined criteria for good design. Software engineering context, design mainly focuses on the following four major areas. Data Architecture, interface and components. Software design encompasses the set of principles, concepts and particle that leads to the development of a high quality representation of software that serve as a guide for the construction activity that follows. Design create a representation or model of software but unlike the analysis mode that focuses on describing required data, function and behavior, the design model provides detail about software data structure architecture, interface and component that are necessary to implement the system. Design allows a software engineer to model the system or product that is to be built . it is the place where software quality is established. Design depicts the software in a number of different ways. First, the architecture of product be represented. Then, the interfaces that connect the software the end users, to other systems and devices, and its own constituent components are modeled. Finally, the software components that are used to construct the system are designed.

Design begins with the requirements model. We work to transform this model into four levels of design detail: the data structure, the system architecture, interface representation, and principles that lead to high quality. Ultimately, a Design Specification us produced. The specification is composed of the design models that describe data, architecture, interfaces, and component. Each is a work product of the design process. At each stage, software design work products are reviewed for clarity, correctness, completeness, and consistency with the requirements and with one another.

A set of fundamental software design concept evolved over the history of software engineering. Fundamental software design concepts provide the necessary framework for getting it right common activities in design process are:

ABSTRACTION

An abstraction denotes the essential characteristics of an object that distinguish it from all other kinds of objects and thus provide crisply defined conceptual boundaries, relative to the perspective of the viewer. While designing a system, at highest level of abstraction, a solution is state in broad terms using the their language of problem environment. There are three different type of basic abstraction in software engineering technique i.e. procedural abstraction, data abstraction and control abstraction. The procedural abstraction hides the data information on how the process is done; data abstraction hides the data information on how the process is done; data abstraction hides the data information whereas control abstraction hides the control details of the system.

Architecture

Software architecture is defined as the overall structure of the system which provides the idea how the system is exactly implemented. Software architecture provides the overall structure of the software and the ways in which that structure provides conceptual integrity for a system. Architecture is the structure or organization of program components, the manner in which these components interact and the system structure of data that are used by the components.