

# Software Development Processes

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## Abstract

Software development process is software design idea and method of general process, including the function and implementation of algorithm and method of software design, the general structure design and software module design, programming and debugging, alignment and testing, writing Document, submitting application and so on.

## 1 Introduction

Software Development Processes need to take a series of action, including requirements analysis, software design, implementation, testing, integration, deployment (or Installation) and maintenance. I will explain them in detail.

### Requirements analysis

System analyst need to know customers' needs, and then take notes to list the main function modules in the system, and which other related small function modules should be included in each main function modules. Some customer may need special demand about the interface, in this case, system analyst needs to preliminarily define a small amount of interface requirement.

### Software design

Software design is the process of implementing software solutions to one or more set of problems. One of the important parts of software design is the software requirements analysis. It is a part of the software development process that lists specifications used in software engineering. If the software is "semi-automated" or user centered, software design may involve user experience design yielding a storyboard to help determine those specifications.

### Implementation

Base on software design, developers need to make a detailed implementation of the software system, described in the detailed implementation specific modules involved in the main algorithm, data structure, classes hierarchy and relations, developers need to explain the procedure of software system at all levels of each (each module, or subroutine) design consideration, for coding and testing.

### Testing

When a system is really to use, it will handle to users, users use will confirm each function one by one.

### Maintenance

Maintenance in software engineering is the modification of a software product after delivery to correct faults, to improve performance or other attributes. A common perception of maintenance is that it merely involves fixing defects. However, one study indicated that over 80% of maintenance effort is used for non-corrective actions. This perception is perpetuated by users submitting problem reports that in reality are functionality enhancements to the system.

## 2 History of Software Development Processes

The software development methodology framework didn't emerge until the 1960s. According to Elliott (2004) the systems development life cycle (SDLC) can be considered to be the oldest formalized methodology framework for building information systems. The main idea of the SDLC has been "to pursue the development of information systems in a very deliberate, structured and methodical way, requiring each stage of the life cycle—from inception of the idea to delivery of the final system—to be carried out rigidly and sequentially" within the context of the framework being applied. The main target of this methodology framework in the 1960s was "to develop large scale functional business systems in an age of large scale business conglomerates. Information systems activities revolved around heavy data processing and number crunching routines".

## References

- 1 Wikipedia about Software Development Processes
- 2 A Chinese book called Software Development Processes.