**Software life cycle** is the term used to describe the phases involved in the process of creating, testing, and releasing new commercial software products. This cycle is similar to the process used to develop information systems, except that the software life cycle focuses on the creation and release of a software program, rather than on the development of a customized information system. The commercial software life cycle is repeated every time a new version of a program is needed. The phases in the software life cycle include the following:

### Proposal and Planning

In the proposal and planning phase of a new software product, software developers describe the proposed software program and what it is supposed to accomplish. For existing software, the proposal and planning stage can be used to describe new features and improvements. Older software programs are often revised to take advantage of new hardware or software developments and to add new functions.

### Design

Once a decision has been made to create or upgrade a software program, developers are ready to begin the design process. This process produces specifications that document the details of the software that will be written by programmers. Developers use problem-solving steps to determine the appropriate specifications.

### Implementation

The implementation phase of the software life cycle is usually the most difficult. Development teams often spend late nights and weekends writing code and unanticipated problems inevitably crop up and have to be solved. The end result of the implementation phase is the production of a prototype called an alpha product, which is used by the development team for testing purposes. The alpha product can be revised to incorporate any improvements suggested by team members.

### Testing

A quality assurance (QA) team usually develops a testing harness, which is a scripted set of tests that a program must undergo before being considered ready for public release. These tests might cover events such as very large input loads, maximum number of users, running on several different platforms, and simulated power outages. Once testing is finished, a beta version of the software program is created for testing outside of the development group, often by a select group of knowledgeable consumers. Any suggestions this group makes can be used to improve the product before it is released to the general public. Once the beta version is finalized, the user manual can be written or updated. At this point, the software developers send the master CDs to duplicators for mass production.

### Public Release and Support

When the product is deemed ready for widespread use, it is declared “gold” and released to the public. The software life cycle then begins again as software developers think of new ways to improve the product.

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