**COMMERCIAL LIFE CYCLE**

The 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 in developing information systems, except that in this case the cycle focuses on the creation and release of a software program, not 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, design, implementation, testing, and public release.

**Proposal and Planning**

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

**Design**

Developers are ready to begin the design process once the decision has been made to create or upgrade a software program. This step produces specifications documenting the details of the software to 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 making it work. If the planning and design efforts have been successful, this phase should go well, but 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 they make 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 would 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 now goes back to the beginning phases as software developers think of new ways to improve the product.