

# Computer Software

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## WHAT'S COVERED

Computer hardware describes the physical/tangible components of an information system. However, hardware is only half of the system. The second component of an information system is software. Without software, the hardware would not be functional. In this tutorial we will discuss what computer software is and its major categories, as well as common computer software packages.

Our discussion breaks down as follows:

## 1. What is Software

**Software** is the set of instructions, written in a specific format called a computer program, that tells the hardware what to do. Software is created through the process of **computer programming**. Computer programming is the process used by computer programmers to create software that solves problems. Software can be broadly divided into two categories: operating systems and application software. Essentially, software “drives” the computer’s hardware. For example, when you press a key on your computer’s keyboard (hardware), a code is sent to the computer’s software to display the character pressed. The software then tells the monitor (hardware) how to display the character on the screen.



### TERMS TO KNOW

#### **Software**

The set of instructions that tells the hardware what to do.

#### **Computer Programming**

Process used by computer programmers to develop software that solves problems.

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## 2. Operating Systems

The first major category of software is operating system software. **Operating systems** manage the hardware and create the interface between the hardware and the user. All computing devices run an operating system. For personal computers, the most popular operating systems are Microsoft’s Windows, Apple’s OS X, and different versions of Linux. Smartphones and tablets run operating systems as well, such as Apple’s iOS, Google’s Android, Microsoft’s Windows Mobile, and Blackberry. The operating system provides several essential functions, including: managing the hardware resources of the computer, providing the user-interface

components, and providing a platform for software developers to write applications. The operating system also starts and keeps the computer running. Ultimately, the operating system determines what you can do with your computer. For example, in education, network administrators will configure the operating on all computers to ensure that nobody can install software on the school system's PC.



#### TERM TO KNOW

##### Operating System

Software that performs the task required to keep the system running, and provides the main interface for the user.

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## 3. Application Software

The second major category of software is application software. **Application software** is, essentially, software that allows the user to accomplish some goal or purpose. For example, if you have to write a paper, you might use the application software program Microsoft Word. If you want to listen to music, you might use iTunes or Windows Media player. To surf the web, you might use Internet Explorer, Firefox, or Google Chrome. Even a computer game could be considered application software.

A “killer” application is one that becomes so essential that large numbers of people will buy a device just to run that application. For the personal computer, the killer application was the spreadsheet. Along with the spreadsheet, several other software applications have become standard tools for the workplace. These applications, called productivity software, form the first major subcategory of applications. **Productivity software** allows office employees to complete their daily work. Many times, these applications come packaged together, such as Microsoft's Office Suite. Generally, regardless of manufacturer, an office suite will be inclusive of a text editor (word processing) application, a spreadsheet application, and a presentation application. Depending on the manufacturer, other application software packages such as email, database, and information-gathering applications are included, as well as social media and communication platforms such as Skype, Windows Messenger, Google Circle, Hangout, etc.

Two other subcategories of application software worth mentioning are: utility software and programming software. **Utility software** includes system software that allows you to fix, modify, and maintain your computer in some way. Examples include antivirus software and disk defragmentation software. **Programming software** is software whose purpose is to make more software. Most of these programs provide programmers with an environment, known as an integrated development environment (IDE), in which they can write the code, test it, and convert it into the format that can then be run on a computer.



#### TERMS TO KNOW

##### Application Software

Provides user with the ability to accomplish a goal or purpose.

##### Productivity Software

Subcategory of application software that provides office employees the ability to complete their work.

##### Utility Software

Software that allows you to fix or modify your computer in some way.

##### Programming Software

Software whose purpose is to make more software.



## SUMMARY

**Software** is the set of instructions that tells the computer's hardware what to do. Without software, a computer would be useless, as it would have no way in which to provide a relevant experience for users. Computer software is categorized according to function. There are two major categories of computer software: **application software** and **operating system** software. Several subcategories of application software exist, such as productivity software, utility software, and programming software. Common application software packages include word processing applications, spreadsheet applications, presentation applications, and database applications.

Source: Derived from Chapter 3 of "Information Systems for Business and Beyond" by David T. Bourgeois. Some sections removed for brevity.

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