Microcomputer Operating Systems

Introduction

At the beginning, developments in the world of operating systems mainly focused on mainframe and minicomputers, but now there is advancement and innovation in the area of operating systems for smaller systems. The emphasis in these smaller systems is often on the shell, or user interface, as that is the aspect of the OS that users have the most interaction with. There are several types of operating systems for microcomputers. In this presentation we will talk about some of more familiar ones.

Microsoft MS-DOS

MS-DOS was the first widely-installed OS in personal computers (PCs), and was essentially the same OS named Personal Computer-Disk Operating system, or PC-DOS that was developed by Microsoft. MS-DOS became the standard operating system for most PCs and PC clones in 1981. MS-DOS is a single user, single tasking, single platform operating system. That means it can only run one user and one task at a time, and it only runs on the Intel platform of microprocessors. DOS utilizes a command-line interface, which means that in order to use DOS, users need to be familiar with the correct commands and syntax that need to be entered when the user is presented with the flashing C: prompt that is familiar to most DOS users.

Apple's Mac OS

Mac OS is the operating system for Apple Computer’s Macintosh line of personal computers and workstations. It runs Unix applications as well as older Mac applications. This operating system is well known for improving the UI, or user interface that computer users interact with in order to tell the computer what to do.

Mac GUI

The graphical user interface that most today’s computer users are familiar with is a legacy of Apple building upon the knowledge of work done by Xerox PARC in the early 1980s. The work done by XEROX inspired Apple to build a graphical user interface of their own. This is what distinguished Apple from other personal computers in the early days.

The MAC OS utilized small graphics, or icons to represent functions that the user might want to choose. These icons, which are now familiar to almost all computer users, made the options available to the user more intuitive. The Mac
OS also used multiple windows to display different information from different sources, allowing the user to think differently about the way they organized their work on a computer. Finally, the Mac OS included a “clipboard” feature, which allowed users to transfer information from one application to another.

**Windows**

The first Microsoft Windows OS was really an application that ran on top of the MS-DOS operating system. Since then, changes have been made to the current Windows OS so that it still supports DOS by using an emulation approach.

Some of the main characteristics of the Windows Operating environment include a Graphical User Interface including overlapping windows, a clipboard, and a trash can or recycle bin. In addition, the Windows operating environment has the ability to run old MS DOS programs, which is known as backwards compatibility.

Some of the well known versions of Windows include:

- Windows 286
- Windows 386
- Windows 3.0 and 3.11
- Windows 95
- Windows 98
- Windows NT
- Windows 2000
- Windows CE (for use in small mobile computers)
- Windows Me
- Windows XP

With each new version came new functionality and new characteristics. Different sub families of the Windows OS have common characteristics and some structural differences as well.

**IBM OS/2**

OS/2 is an IBM operating system for PCs that was originally intended to be an alternative to Microsoft Windows. Different versions of OS/2 have been developed over the years, and come in both client and server versions. This operating system is still used today in corporations that have IBM systems, such as many major banks and other financial institutions. One challenge for OS/2
users is that there are not as many third-party applications available for OS/2.

**Novell Network: A Network Only OS**

Netware is the most widely installed single-user operating system that runs on servers, but not on desktops. Netware can support hundreds of thousands of networked users, but the administrator of the system is the only real user of the operating system. Netware experienced initial success with large and small office Local Area Networks (or LANs). It was the first LAN server software for IBM PCs and clones. It has since been redesigned to work as part of larger networks, including the Internet.

**OS for Very Small Systems**

Some of the most rapid growth in the world of operating systems is happening in the very small computer arena. PDAs, cell phones, set top boxes and systems in cars all need Operating systems in order to work. There are many different operating systems in this category- Windows CE, the Palm OS, and the Epoc OS are just a few.

**Summary**

Great innovation has taken place in regards to operating systems in the recent past. Changes have taken place not only in the way that operating systems work behind the scenes, but also in how users interact with the OS. It will be interesting to see what innovation occurs in the future, especially in the area of handheld devices, and other small systems.