

How the Operating System Works, a brief overview, R. Craig Collins, © 2008

When the computer is turned on, the BIOS locates the operating system on the hard drive, and transfers the core parts into memory, RAM.

If a command line is used, a file named autoexec.bat is executed, to configure the system for the user.

Steps in most autoexec.bat files

<code>@echo off</code>	Suppress the display until the batch file is finished
<code>path c:\DOS</code>	Informs the OS where additional commands not already in memory are located
<code>prompt \$p\$g</code>	Sets the system prompt (command prompt) to include the active drive, the current path (including directories and subdirectories), and the places a > to separate the path from the flashing cursor that indicates where the user enters commands

When a command is typed in at the prompt, such as

```
dir /w
```

the operating system locates a command¹ called dir and modifies it with /w

When a command is typed in at the prompt, such as

```
copy lab1.txt lab1.ltr
```

- the operating system locates a command² called copy,
- the operating system will assume lab1.txt is in the current directory and use that as the source (the file to be copied)
- the operating system will use lab1.txt as the destination, and duplicate lab1.txt, place the copy in the current directory, and call the duplicate lab1.ltr

When a command is typed in at the prompt, such as

```
move a:\lab1.txt a:\homework\lab1.txt
```

- the operating system locates a command³ called move,
- the operating system will see that lab1.txt is in the root directory of A: and use that as the source (the file to be moved)
- the operating system will use a:\homework as the destination directory, duplicate lab1.txt, place the copy in the homework directory on A:, and call the duplicate lab1.txt
- delete a:\lab1.txt, leaving only the new file in a:\homework

Given a batch file called mymove.bat is created, and whose instructions are

```
copy %1 %2
```

```
del %1
```

When the command is typed in at the prompt, such as

```
mymove a:\lab1.txt a:\homework\lab1.txt
```

- the operating system locates a command⁴ called mymove.bat,
- the operating system will see that a:\lab1.txt should be treated as the source (the file to be moved)
- the OS will see that a:\homework\lab1.txt should be treated as the destination (new location for file)
- As each line of the batch file is run, %1 is replaced by the source, and %2 is replace by the destination

¹ The OS checks for the command in RAM; if not found the OS uses the path set in autoexec.bat [PATH C:\DOS] to start searching C:\DOS for a command named dir.com or dir.exe or dir.bat

² The OS checks for the command in RAM; if not found the OS uses the path set in autoexec.bat [PATH C:\DOS] to start searching C:\DOS for a command named copy.com or copy.exe or copy.bat

³ The OS checks for the command in RAM; if not found the OS uses the path set in autoexec.bat [PATH C:\DOS] to start searching C:\DOS for a command named move.com or move.exe or move.bat

⁴ The OS checks for the command in RAM; if not found the OS uses the path set in autoexec.bat [PATH C:\DOS] to start searching C:\DOS for a command named mymove.com or mymove.exe or mymove.bat
If the batch file is not found there, it will search the current directory