

# Introduction to Web Design

# Operating Systems



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What is an operating system?

## Operating Systems

Software that manages a computer's resources

Allocates resources among other programs

Resources include the central processing unit (CPU), computer memory, file storage, input/output (I/O) devices, and network connections

Runs indefinitely and terminates only when the computer is turned off

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## Contemporary Examples

# Operating Systems

Microsoft OS

Mac OS

Linux

iOS

Android

Symbian OS

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## History

## Operating Systems

First digital computers had no operating systems

Ran one program at a time, which had command of all system resources

A human operator would provide any special resources needed

First operating systems were developed in the mid-1950s

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## OS Interface

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The graphical user interface (GUI) is most familiar to us.

It provides visual metaphors for the operations we perform on a computer.

A command line interface (CLI), on the other hand, receives typed commands for each operation.

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## Unix

## Operating Systems

An open source OS produced by AT&T Bell Labs

Originally developed in 1969

Command line interface

Portable, multi-tasking, multi-user

Free distribution, open system

Servers (including i6), workstations, mobile devices

Basis of Linux and MacOS

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## Unix Commands

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```
$ ls
```

```
$ pwd
```

```
$ cd
```

```
$ cp
```

```
$ rm
```

*See the course website for more basic Unix commands.*

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## chmod Command

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Every file and directory has nine permissions associated with it

The Unix chmod command sets permissions of files and directories

Files and directories have three types of permissions (or none):

**r** (read)

**w** (write)

**x** (execute)

**–** (no permission)

The above permissions occur for each of the following classes or users:

**u** (user/owner)

**g** (group)

**o** (other/world)



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## Permissions

## Unix Commands

U	G	W
rwX	rwX	rwX
rwX	rwX	r-X
rwX	r-X	r-X
rw-	rw-	r--
rw-	r--	r--

```
$ chmod 777 filename
$ chmod 775 filename
$ chmod 755 filename
$ chmod 664 filename
$ chmod 644 filename
```

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### Standard Website Permissions

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Standard file permission:  
**644**

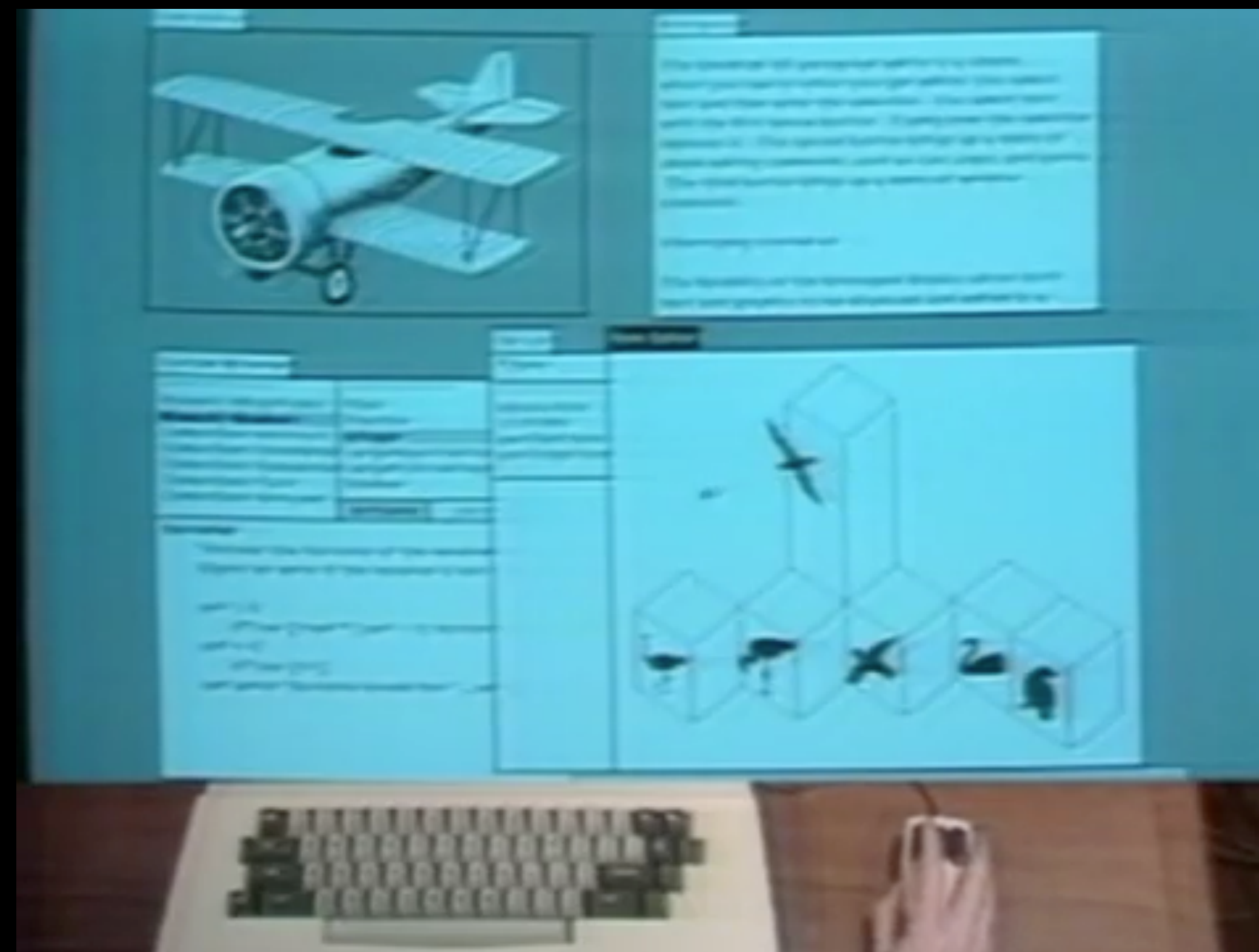
Owner can read and write file;  
group can read file;  
others can read file

Standard directory permission:  
**755**

Owner can read, write and execute file;  
group can read and execute file;  
others can read and execute file

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Triumph of the Nerds, 1996, PBS



Palo Alto Research Center, Incorporated, Courtesy of the PARC Library, 1970 ca.