

# Intellectual Property in Cyberspace

CIS 150: Fundamentals of Information Systems

# What's Ahead...

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- Intellectual Property in Cyberspace
  - What is Intellectual Property (IP)?
  - Why should we protect IP?
  - How has technology affected issues related to IP?
  - What are the different types of legal IP protections?
    - » Copyrights, patents, trade secrets, and trademark
  - How can we compare/contrast these types of IP protection?
  - What are the sets of copyright laws related to digital content?
  - How have the courts interpreted these laws with respect to computer software and digital music, movies, and videos?
  - What are some technology solutions to the IP problem?
    - » Encryption, Digital Rights Management systems (DRMs)
      - ◆ More on this next class

# What is Intellectual Property (IP)?

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- Works of the mind that are created by a single person or a group
  - Art
  - Books
    - » e.g., novels, poems
  - Films
  - Formulas
    - » Colonel Sanders' Original Recipe (secret blend of 11 herbs and spices)
    - » Coca-Cola company's secret formula for Coca-Cola
  - Inventions
  - Music
  - Processes
    - » Amazon.com's "One-Click Technology"
    - » Priceline.com's "Name Your Own Price" online auction mechanism

# Why Should We Protect IP?

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- Utilitarian (teleological) perspective
  - Argues that IP protection is necessary to incent creativity and innovation that benefits society
  - Authors of creative works must be able to cover their “costs of expression” – that is, the time and effort involved in:
    - » Writing a novel
    - » Producing a music album
    - » Writing source code of a software product
  - Unauthorized copying and distribution of their works hurts the authors’ abilities to recoup these costs and reduces incentives to create, develop, and distribute these socially desirable, creative works
    - » Microsoft (MS) spent about \$1 billion developing MS Windows XP Operating System, but the marginal cost of production and distribution of it is close to zero
    - » Without IP protections a competitor could copy the source code and resell it for a profit at a nominal fee
    - » MS would not be able to charge a premium and would be unable to recoup its \$1 billion investment
    - » What is the likelihood that MS will invest another \$1 billion for the next generation OS?

# Challenges of New Technology for IP

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- Computer and communications technology now make high-quality copy and high quantity distribution cheap
  - Perfect, high-quality digital copies
    - » Software products, text documents, photographs
    - » Also digital music and videos
  - High-volume, cheap digital storage media
    - » Hard disks, CDs, DVDs, memory sticks (or flash drives)
  - Scanners
    - » Convert print text, photos, and art to high-quality digitized form
  - File compression formats (e.g., MP3 and MPEG4)
    - » Make music and movie files small enough (20x smaller than files on a standard CD) to download, copy, and store cheaply and easily

# Challenges of New Technology for IP

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- Enabling communications technologies (con't)
  - World Wide Web
    - » Makes it easy to locate, download, and post content
    - » Broadband (high-speed) Internet connections allow rapid download of very large files using File Transfer Protocol (FTP)
  - Peer-to-Peer (P2P) networks
    - » Allows easy transfer of digital files over the Internet by large numbers of strangers without a centralized system or service
    - » P2P utilizes equal peer nodes that simultaneously function as both "clients" and "servers" to other nodes on the network for transferring larger files (especially music, video, and software)
  - Software tools for manipulating content (e.g., video, sound)
    - » Enable amateurs to create new works based on previous works

# So What is the Problem?

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- Advance in IT/IS make unauthorized copying and sharing of IP easy and cheap
  - Core of the problem
    - » Ability to reduce all forms of information into a digital format (i.e., binary code) that allows people to make limitless, perfect, zero marginal-cost copies of books, movies, videos, and software and to distribute these products quickly and cheaply
    - » MP3 format is unprotected
    - » This leads to piracy (i.e., high-volume, unauthorized copying of an IP) which costs the software, movie, and music companies billions of dollars
  - The result
    - » As they lose control over their creative works, IP owners now fear the loss of revenues, which may cover the significant fixed costs associated with developing their expressions or innovations

# How Can We Protect IP in the Digital Age?

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- Laws
  - Copyright law
    - » Protects authored works (including software programs)
  - Patent law
    - » Protects inventions, processes, and machines (including software and technology-supported business processes)
  - Trade secrets law
    - » Protects proprietary corporate information
  - Trademark law
    - » Protects brand names and product symbols
- Technologies to detect and prevent copying
  - Encryption and Digital Rights Management systems (DRMs)
- Social Norms
  - Education programs on the ethics of piracy and IP violations
  - Taxation policies

# Comparing IP Protection Laws

(Copyright, Patents, Trade Secret, Trademarks)

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- What is protected?
- For how long?
- Penalties for infringement?
- Is there protection from independent discovery?
- Application process?
- Is the innovation placed in the public domain?

# The Constitution

## (Copyrights and Patents)

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- Congress shall have the power to:
  - “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Rights to their respective Writings and Discoveries” [U.S. Constitution, Article 1, Section 8, Clause 8]
- Copyright grants the creator of:
  - “original works of authorship in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, the exclusive right to distribute, display, perform, or reproduce the work in copies or to prepare derivative works based on the work”. [U.S. Code, Title 17, Section 102(a)]

# What is a Copyright?

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- Copyright (CR) laws
  - Protect the literary expression of an idea (or authored work) fixed in a tangible medium
    - » CR does protect architecture, art, audiovisual works, choreography, drama, graphics, literature, movies, music, pictures, sculptures, and sound recordings
    - » CR does protect software programs (i.e., the code is viewed as a creative literary work) including software applications, video games, web pages, etc. and databases that exhibit creativity or originality
    - » CR does not protect ideas, processes, formulas, functions, algorithms, facts, or common information (e.g., standard calendars, height and weight charts, rulers, etc.)
  - Does not protect an idea, but the literary expression of an idea
    - » You cannot CR a dance such as the Tango, but you can CR a visual recording of Tango choreography (i.e., a visual recording is a creative expression of an idea)
    - » You cannot CR the game of football, but the NFL can CR a specific televised recording of an NFL football game
  - Protects the expression, selection, and arrangement of ideas
    - » e.g., the structure, sequence, and organization of a software program
    - » e.g., the structure, sequence, and organization of a recipe book

# What is a Copyright?

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- Together, the Copyright Act, 1976 and the Sonny Bono Copyright Term Extension Act, 1998
  - Give CR owner the rights, for 70 years after death (or for 95 years after creation for *corporate* CR owners), to:
    - » Make copies of the work
    - » Produce derivative products (book to movie, translation to other languages, movie or book sequels)
    - » Distribute copies
    - » Perform work in public (music, plays)
    - » Display work in public (movies, artwork, choreographic works, computer games)
  - Do not protect from independent discovery (i.e., does not give monopoly power to creator)
    - » No infringement if a person can demonstrate that she created the work without copying
  - Penalize for CR infringement
    - » If a CR owner takes a CR infringer to civil court and can show a “striking resemblance/similarity” between the works that can be explained only by copying
    - » \$200 – \$150,000 for each work infringed

# What is a Copyright?

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- Copyright Law

- After the CR expires the work goes into the public domain

- » Public domain refers to works that belong to the public
- » A work in the public domain is free for everyone to use without asking for permission or paying royalties
- » A work may be reproduced and distributed and derivative works can be created without CR holder's authorization
- » [http://books.google.com/advanced\\_book\\_search](http://books.google.com/advanced_book_search)
  - ◆ You can go to [Google Book Search](#) and download full copies of out-of-copyright books (or books that publishers has asked Google to make fully viewable)
  - ◆ Select the “Full View” radio button in the Advanced Book Search - the Full View allows you to view any page from the book, and if the book is in the public domain you may download, save, and print a PDF version of the book

# Copyright Example

## (Software Protection)

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- Consider the following:
  - You purchase a software application, use it, figure out its functionality, and then go off independently to create a new software application (with new code) that performs the exact same functions
  - Is this a CR infringement?
    - » No! It is a new expression of an idea!
    - » Remember that there is a CR infringement only if you can show that there is a “striking resemblance/similarity” between the software code (i.e., the literary expression of the idea or functions of the application) that can be explained only by copying
- Applying CR to software
  - Software program is a literary work but unlike literature it provides a useful function
  - Behavior of software is valuable, but that is not protected under CR
    - » However, behavior/functionality may be covered under patent law

# How Do You Copyright a Work?

## (U.S. Copyright Office)

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- It is not necessary to register a CR work
  - If a work satisfies the requirements for CR (see Slide 20), it has legal protection when it is created
    - » You may put a CR notice on your work (without permission of the U.S. Copyright Office), although it is not required
    - » Use of the notice informs the public that the work is protected by CR, identifies the CR owner, and shows the year of first publication
      - ◆ © 2010 by Steve Kendra
- If you want to formally register your CR
  - Contact the U.S. Copyright Office **Copyright Basics**
    - » Request an application form, submit the completed form to the U.S. Copyright Office along with a \$35 nonrefundable filing fee and a nonreturnable copy of the work to be registered
  - The U.S. Copyright Office will then send you a certificate of registration in 6-8 months; this formally establishes a public record of CR protection

# Copyright Laws

## (Proving Infringement)

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- Proving CR infringement
  - CR owner must file a civil lawsuit
  - CR owner must show a striking resemblance/similarity that can be explained only by copying (sometimes difficult to do)
    - » Apple v. Franklin (US Supreme Court, 1984)
    - » Whelan Associates, Inc. v. Jaslow Dental Laboratory, inc. (1987)
  - No infringement from independent discovery

# Proving CR Infringement

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- Apple v. Franklin (US Supreme Court, 1984)
  - Apple said that Franklin copied its Operating System (OS)
  - They showed that Franklin’s code had line after line of identical code and even documentation in Franklin’s code with Apple’s name in it
  - This was the first case to demonstrate that software was protected under CR
- Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc. (1987)
  - Whelan Associates produced and owned a software application to support functions in a dental office
  - Jaslow, another dentist, studied the dental application and copied the structure, sequence, and organization of the program into another programming language
  - Courts found that Jaslow violated Whelan’s CR
  - Comprehensive, non-literal similarity
    - » Striking similarity that can be explained only by copying
    - » Similar interpretation as translating a book from English to Japanese

# Copyright Laws

(What Can You CR? Information vs. Creative Expression)

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- Feist Publications v. Rural Telephone Service (1991)
  - Rural
    - » Telephone provider under statutory obligation to compile phone directory for all customers free of charge
  - Feist
    - » Specialized in compiling directories
    - » Copied 4,000 entries from Rural's directory
  - Rural sued for CR infringement of its collections of information
  - Court decision
    - » Ruled in favor of Feist because Rural's directory had no creative expression and therefore could not be copyrighted
- Think about the recipes example

# Copyright Laws

(What Can You CR? GUIs Are Not Covered by CR)

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- Graphical User Interfaces (look and feel)
  - Apple v. Microsoft (1994)
    - » Apple sued to prevent Microsoft and Hewlett-Packard from using visual GUI elements that were similar to Apple’s MacIntosh OS
    - » Apple lost all claims in the lawsuit
  - Lotus v. Borland (1995)
    - » Quattro Pro released a spreadsheet that had a mode that imitated the Lotus 1-2-3 menu structure (but not the code)
    - » Lotus sued saying the look and feel is copyrightable
    - » Courts disagreed saying the menu system is a “method of operation” or a process, not a literary expression of an idea
    - » Courts sided with Borland – GUI is not CR’able
  - Patent law may provide some IP protection for GUI elements, but CR law does not

# Copyright Laws

## (Exceptions)

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- CR laws do not prohibit all unauthorized copying and distribution
  - First Sale Doctrine
    - » CR holder only has right to first sale of a copy
    - » i.e., you have the right to sell your textbooks to other students or back to the bookstore without the CR holder's permission
  - Make a backup copy of a software program
  - Fair Use Doctrine
    - » Allows the use of CR materials that contribute to the creation of a new work (e.g., such as quoting part of a work in a review) and that are not likely to deprive authors or publishers of income from their work
    - » Fair use does not require permission of the CR holder

# Copyright Laws

## (Fair Use Doctrine)

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- The purpose of the use
  - Commercial use vs. non-profit use
  - Education, research, news, critiques
  - Parody (form of criticism)
    - » When one imitates a serious piece of work, such as literature, music or artwork, for a humorous or satirical effect
    - » Weird Al Yankovic's parodies of Michael Jackson ("Eat It", "I'm Fat"), Madonna ("Like a Surgeon"), Chamillionaire ("White and Nerdy")
      - ◆ He actually gets permission but does not need to do so
      - ◆ <http://www.youtube.com/alyankovic>
- The nature of the copyrighted work
  - creative works (novels) get more protection than informational works (databases of information)
- The portion of the copyrighted work used
- The effect of use upon the value of the copyrighted work

# Copyright Law

## (Fair Use Doctrine: An Example)

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- Analyze the following situation by applying the fair use doctrine
  - The use of quotes and short passages from a novel in a negative book review in a newspaper
    - » You should take some notes here!

# Copyright Law

## (Fair Use Doctrine: An In-Class Assignment)

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- Consider the following case:

*A political group organized a forum on its website to encourage people to post and comment on individual newspaper articles relevant to political issues of concern to the group. Other participants add their comments, and debate/discuss the articles. Two newspapers then sued, arguing that posting the articles violated their copyrights. Analyze the case. How do the Fair Use guidelines apply? Who should win this case in a court of law?*

- Fair Use Guidelines

- The purpose of the use (commercial vs. non-profit use)
  - » education, research, news, critiques
- The nature of the copyrighted work
  - » creative vs. informational works
- The portion of the copyrighted work used
- The effect of use upon the value of the copyrighted work

# Copyright Law

## (Fair Use Doctrine: In-Class Activity 3)

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- Break into five team of 8 students and get together
- Pair off to handle each of the four Fair Use guidelines
- Each pair needs to discuss their specific part, then briefly document their analysis of the guideline
- After five minutes, team members re-group and consolidate paired responses onto a single page
- Include all four guideline, respective responses, and name of each team member - label with date as well as the assignment designation (In-Class Activity 3)
- You have ten minutes total - worth up to 20 points

# Copyright Laws

## (Fair Use Doctrine: Time-Shifting)

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- Sony v. Universal City Studios (1984) – The Betamax Case
  - Background
    - » Sony developed Betamax, a video cassette recording machine that allowed customers who purchased Betamax to record TV shows
  - Claim
    - » Two (2) movie studios sued Sony for contributory CR infringement because some purchasers of Betamax used it to record CR'ed movies shown on TV
    - » The studios claimed that manufacturers of technologies that enable CR infringements should be held liable for any infringements committed by its purchasers
  - Two critical issues
    1. Is recording a movie for personal use a CR infringement or fair use?
    2. Can manufacturers of technologies that enable CR infringements be liable for contributory CR infringement (or infringements committed by its purchasers)?

# Copyright Laws

## (Fair Use Doctrine: Time-Shifting)

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- Sony v. Universal City Studios (1984) – The Betamax Case
  - Defense (Issue 1)
    - » Sony claimed that there are many non-infringing fair uses of Betamax and VCRs such as time-shifting (taping a TV show/movie to view it at a later time)

### Fair Use?

- » The purpose of the use (usually for private, non-profit, time-shifting use) → (For)
- » The nature of the copyrighted work (movies are very creative) → (Against)
- » The portion of the copyrighted work used (whole movies were copied) → (Against)
- » The effect of use upon the value of the copyrighted work → (For)
  - ◆ Time-shifting simply allows the user to watch the movie at a later time
  - ◆ Most customers normally reused the tapes (i.e., taped over the content) after viewing (referred to as an “ephemeral” copy)
  - ◆ Movie studios could not prove that they suffered any damages or harm
    - In fact, what ended up happening after the widespread use of VCRs?
- Defense (Issue 2)
  - » Sony claimed that the Betamax machines had many non-infringing uses and that it could not control how purchasers used the machines after purchase

# Copyright Laws

## (Fair Use Doctrine: Time-Shifting)

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- Sony v. Universal City Studios (1984) – The Betamax Case
  - Supreme Court Ruling (5-4)
    - » Issue 1: Betamax has substantial non-infringing uses (fair use). For example, recording a movie for viewing at a later time (time-shifting) is fair use (especially since they are copying free, public programming)
    - » Issue 2: Manufacturers of home video recording devices with substantial legal uses cannot be held liable for contributory CR infringement (or copyright infringement of purchasers). A key element to this decision was that Sony's relationship with the purchaser ended with the sale of the machine
  - The Betamax case is often cited in web-based entertainment cases and cases about production and distribution of new types of digital recording devices

# Copyright Law

## (Fair Use Doctrine: Reverse Engineering)

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- **Sega v. Accolade (1992)**
  - **Background**
    - » Developers of new software (e.g., gaming software) often must copy some or all of another company's software (e.g., gaming console) as part of the process of developing a new product (e.g., a new compatible game)
    - » Sega had a computerized lock so that only Sega game cartridges would work on its Sega gaming system (effort to create a monopoly by raising barriers to entry)
    - » Accolade reverse engineered the lock so that it could produce and sell game cartridges that could run on the Sega gaming system
      - ◆ Copied Sega's program and decompiled it (i.e., translated it from machine code to human-readable format)
  - **Claim**
    - » Sega sued Accolade for CR infringement (unauthorized copying of the program)

# Copyright Law

## (Fair Use Doctrine: Reverse Engineering)

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- Sega v. Accolade (1992)

- Defense

- » Accolade said that copying the program was fair use
- » Reverse engineering enabled Accolade to produce new products and ensure interoperability of their games with Sega's gaming system

### Fair Use?

- » The purpose of the use (for research purposes, commercial use, new product creation, prevent monopoly behavior) → (~For)
- » The nature of the copyrighted work (software is creative) → (Against)
- » The portion of the copyrighted work used (entire program was copied) → (Against)
- » The effect of use upon the value of the copyrighted work → (For)
  - ◆ Accolade did not produce a competing gaming system
  - ◆ Accolade was producing only new games, not copies of Sega games
  - ◆ It may be that the gaming system will be more popular with new, compatible games

- Court ruling

- » It is fair use to disassemble protected, copyrighted work:
  - ◆ For research purposes and to allow interoperability to avoid monopoly
  - ◆ To encourage the production of new, creative products

# Copyright Law

## (Fair Use Doctrine: Reverse Engineering)

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- Reverse engineering
  - A critical process for creating new products that must interact with another company's hardware and software
- Several court cases have ruled that copying and reverse engineering an entire computer program for commercial use was fair use, largely because the purpose was to create a new product
  - Sega v. Accolade (1992)
  - Atari Games v. Nintendo (1992)
    - » Courts ruled that making copies of a program for reverse engineering (to learn how it works so that a company can make a compatible product) is fair research use
  - Sony v. Connectix (2000)
    - » Connectix copied Sony's PlayStation program and reverse engineered it to develop a Virtual Game Station (VGS) that emulated the PlayStation console and allowed PlayStation games to be played on a desktop
    - » Courts rule this was fair use
    - » Sony bought VGS out and discontinued it

# Copyright Law

## (DMCA)

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- Digital Millennium Copyright Act (1998)
  - Criminalizes the use of technologies that circumvent technical protection systems (e.g., encryption or digital rights management)
  - Two (2) critical anti-circumvention rules
    - » Outlaws the act of circumventing a technical protection (such as encryption or digital rights management) to access a CR'ed work
      - ◆ Technical protection is “a technical measure that effectively controls access to a copyrighted work”
      - ◆ So if a CR owner uses a digital rights management system or encryption code to protect a digital book from unauthorized copying, then it is illegal for anyone to break the encryption code and access the book without the CR holder's permission
      - ◆ Exception: You may circumvent to make fair use of a work that you acquired legally (reverse engineering for interoperability, computer security research)
    - » Outlaws the manufacturing or distributing of technology that enables others to circumvent copyrighted work
      - ◆ Primarily designed for the purpose of circumvention of a technology protection

# Copyright Law

## (DMCA)

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- Digital Millennium Copyright Act (1998)
  - Intermediary liability (and safe harbors)
    - » What is the impact of rule 2 on ISPs/websites? They provide network technologies that enable customers to infringe CR by sharing and downloading MP3 files
    - » ISPs qualify for immunity (or safe harbor) from contributory infringement (i.e., CR infringement committed by their users)
    - » To qualify, ISPs must be willing to terminate service to repeat CR infringers and remove material from their sites once they are put on notice that the material infringes a CR
  - Penalties
    - » 5 years in prison / \$500,000 for each offense
  - Major Complaints
    - » DMCA makes access to CR works for fair use purposes difficult
    - » DMCA allows for circumvention for fair use (see rule 1)
    - » But, it is not clear whether fair use circumventors have the right to make and distribute the technologies necessary to accomplish fair use circumventions
    - » Rule 2 makes reverse engineering of software for fair use much more difficult

# Copyright Law

## (First Test of the DMCA)

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- Universal v. Reimerdes (2000)
  - Background
    - » Content Scrambling System (CSS) is a technological protection that protects digital content (e.g., movies) on a DVD by encrypting the contents
    - » All movies distributed in DVDs are protected by CSS
    - » These movies can only be viewed on a DVD player or a specially configured PC (have licensed copy of CSS which contains the keys for decryption)
    - » In 1999, CSS supported only MAC or Windows OS; that is, computer users that used other OS (such as Linux) could not view DVDs on their computers
    - » Jan Johnansen (15 year old in Norway) cracked the CSS encryption code and created DeCSS, a software program that allows Linux users to circumvent the CSS protection on DVDs so that they could download and view DVDs on their computers (just like MAC or Windows OS users)
    - » Jan then posted the DeCSS program to the Web → widespread distribution
    - » Many others began to post DeCSS to their websites

# Copyright Law

## (First Test of the DMCA)

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- Universal v. Reimerdes (2000)
  - Claim
    - » Eight (8) sued movie studios sued 3 New York men who made DeCSS (a reverse engineering tool for overriding DVD protections) available on their websites
    - » Claimed that DeCSS is a piracy tool that circumvents CSS protection and will be used to make and distribute unauthorized copies of movies
    - » Claimed this was a violation of DMCA (rule 2 makes it illegal for anyone to make or distribute a technology (DeCSS) that is intended to circumvent a technological protection (CSS) of a CR work)
  - Defense
    - » DeCSS has a substantial fair use – it preserves fair use by allowing DVDs to work with computer systems not running MAC or Windows OS (interoperability)
    - » People have a right to use legally purchased DVDs on Linux - they need DeCSS to do it
    - » Allows DVD owners to view their DVDs anywhere in the world
    - » Intent of DeCSS was not to facilitate copying/distribution of disks on the Internet
  - Court Ruling
    - » DeCSS violated the DMCA (but DeCSS is still widely available)
    - » Prohibited websites from posting DeCSS or linking to other sites that post DeCSS

# Copyright Law

## (First Test of the DMCA)

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- Universal v. Reimerdes (2000)
  - Concerns about the ruling
    - » How can fair use be preserved if CR material is encrypted (or protected by another technology protection) and programs like DeCSS are outlawed
    - » DMCA seems to say that you may circumvent technology protections for fair use but you cannot make or distribute technologies that enable you to perform fair use circumventions
    - » Many companies avoid circumvention due to fear of lawsuit → prevents new products from coming to market
  - Note the difference between DMCA and Sony v. Universal (1984)
    - » DMCA deals with circumvention of technology protections
    - » Sony v. Universal (1984) did not involve circumvention of technology protections
    - » Betamax did not deal with digital data
    - » The financial impact of the CR holders is different

# Copyright Law

## (Testing the DMCA)

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- The Napster case
  - Background
    - » 1999 – Shawn Fanning opened Napster, an online service that allowed users to copy MP3 files (e.g., digital music) from one user’s hard drive to another user’s hard drive
      - ◆ > 50 million users by 2000, ~ 100 million MP3 files available
    - » Napster had its members download peer-to-peer (P2P) / file-sharing software that allowed users to transfer songs from each other’s hard drives
      - ◆ Napster did not store any MP3 music files on its own server
      - ◆ It provided a central directory – a list of available songs and a list of Napster users logged in to the service (like a digital music GPS)
  - Claim
    - » Recording Industry Association of America (RIAA) claimed that 90% of files copied via Napster violated record label CR and sued Napster for \$100,000 per copied song (claimed contributory CR infringement because Napster facilitated the illegal copying)
  - Two critical issues
    1. Was the copying and distribution of music via Napster legal under the fair use guidelines?
    2. If not, was Napster responsible (and therefore liable) for the CR infringements committed by its users?

# Copyright Law

## (Testing the DMCA)

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- The Napster case
  - Defense (Issue 1)
    - » Napster claimed that there are many non-infringing uses of Napster
      - ◆ Some works were not CR'ed
      - ◆ Some artists (e.g., new artists) gave Napster authorization to use their works (permissive distribution)

### Fair Use?

- » The purpose of the use (non-profit use) → (For)
  - ◆ Napster did not charge for its services
  - ◆ Napster argued that people made copies for personal, not commercial use
    - Space-shifting (like time-shifting for Betamax); that is, people download copies of songs that they already own on CD to have in multiple places (home, car, work, etc.)
    - Sampling; that is, people sample songs and then buy the CDs
- » The nature of the copyrighted work (songs are very creative) → (Against)
- » The portion of the copyrighted work used (whole songs were copied) → (Against)
- » The effect of use upon the value of the copyrighted work → (Against)
  - ◆ Napster claimed that sampling actually would help record labels
  - ◆ However, most sales data and surveys of college students suggested otherwise!

# Copyright Law

## (Testing the DMCA)

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- The Napster case
  - Defense (Issue 2)
    - » Napster claimed safe harbor status (as a search engine) under the DMCA
      - ◆ DMCA provides safe harbor protection against liability committed by customers of intermediaries (ISPs) or “information location tools” (e.g., search engines)
      - ◆ It did not keep copies of CR material on its server
      - ◆ It only provided a central directory – a list of available songs and a list of Napster users logged in to the service
      - ◆ It was acting like a search engine, which is protected under the DMCA

# Copyright Law

## (Testing the DMCA)

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- The Napster case
  - Court ruling
    - » Rejected Napster’s arguments
    - » Ruling on Issue 1: Not Fair Use (CR infringements were rampant)
      - ◆ Ruled that Napster had an adverse impact on the market for CDs, especially among college students
        - Webonize survey of 4,000 college students → 75% used Napster at least once/month
    - » Ruling on Issue 2: Not protected under Safe Harbor provision of DMCA
      - ◆ Lots of reasons
        - RIAA was not trying to stop the manufacturing of P2P networks, but stop Napster’s use of it to make CR material available for unauthorized access
        - Napster did not take actions to help stop CR infringement (a requirement of DMCA Safe Harbor) once they were put on notice of CR infringements
        - Noted that Napster “knowingly encourages and assists in the infringement of copyrights” (intent is important)
    - » Napster must
      - ◆ Remove listings of CR songs identified by music companies
      - ◆ Pay creators and CR owners a \$26 million settlement for past, unauthorized uses of music, and an advance against future licensing royalties of \$10 million

# Copyright Law

## (Testing the DMCA)

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- **MGM Studios v. Grokster (2005)**
  - **Background**
    - » Grokster was another online service that allowed users to copy MP3 files (e.g., digital music) from one user's hard drive to another user's hard drive
    - » It was a true peer-to-peer (P2P) system that did not require a central directory like Napster used (computers just make requests to each other along the network)
      - ◆ Makes Grokster more difficult to deal with since you cant just shut it down by eliminating a central directory
    - » Members of the P2P network place files meant for sharing in a “Shared Files” folder
    - » Grokster promoted its software as a replacement for Napster (“The #1 Alternative to Napster”)
  - **Claim**
    - » Movie industry claimed that ~90% of files copied via Grokster violated movie/music company CR and sued Grokster for contributory CR infringement because Grokster purposely facilitated the illegal copying (i.e., their business model depended on CR infringement)
  - **Two critical issues**
    1. Was the copying and distribution of music via Grokster legal under the fair use guidelines?
    2. If not, was Grokster responsible (and therefore liable) for the CR infringements committed by its users?

# Copyright Law

## (Testing the DMCA)

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- **MGM Studios v. Grokster (2005)**
  - Defense
    - » Grokster claimed it was just a software company without any direct involvement in file swapping
      - ◆ Like a web browser that does not control the sites a user browses
      - ◆ Like an email application that does not monitor a user's attachments
    - » P2P networks have many productive, legal uses (true)
  - Supreme Court Ruling
    - » Unanimously ruled that a CR owner can sue an intermediary for contributory CR infringement if the intermediary encourages CR infringement
    - » Ruling led to a controversial new test to determine if software is protected by the Sony v. Universal Betamax ruling
      - ◆ It has to be shown that the distributors of the program have advertised and/or otherwise encouraged or induced its use for CR infringement
  - Grokster forced to pay \$50 million to music and recording industries
    - » Grokster was shut down
    - » Do rulings like this threaten the development of new P2P networks?<sup>1</sup>

# Copyright Law

## (Testing the DMCA with Video Sharing)

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- Universal Music Group v. Veoh (2009)
  - Background
    - » Veoh.com is a video-sharing service that works a lot like YouTube
    - » Users can upload videos, watch videos, and download videos
    - » Veoh users have been known to upload clips that infringe CR
  - Claim
    - » Universal Music Group claimed that there were massive CR violations on Veoh and filed suit against Veoh for contributory CR infringement
  - Defense
    - » Veoh claimed that it is not responsible for the content that is uploaded by its users (per the DMCA's Safe Harbor provision) and that it always responds to “takedown requests” by CR owners
  - Court Ruling
    - » Veoh satisfied the DMCA's criteria for Safe Harbor status since Veoh was not aware of when infringing material was post and, once becoming aware of infringing material, Veoh acted “expeditiously” to remove it

# Copyright Law

## (RIAA's Evolving Strategy)

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- RIAA v. the People

- Before 2003

- » Music and movie companies avoided pursuing direct CR infringements by customers in fear of a public backlash
    - » Instead they chose to sue developers of P2P networks (e.g., Napster, Grokster, StreamCast) for contributory CR infringement

- 2003

- » RIAA began to sue individual customers that swap large amounts of music on the Web
    - » They have sought the help of ISPs to identify such customers
    - » RIAA has sued more than 29,000 people (most settle out of court for a small fee)
    - » All of these lawsuits don't seem to be slowing down the file sharing trend

- Example

- RIAA v. Thomas-Rasset (2009)

- » Found guilty of willful, illegal sharing of 24 songs (accused of sharing more than 1,700 songs)
    - » Jury awarded damages of \$1.92 million (\$80,000/infringed work)

# Question

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- Should Congress repeal the DMCA?

# Technology Solutions to Unauthorized Copying and Distribution

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- Trusted systems
- Digital Rights Management Systems
  - How do you ensure fair use?
  - How do critics, scholars, and teachers access material?
  - Is there an invasion of privacy as creators track what we read, use, etc. with the trusted systems

# Other Solutions to Unauthorized Copying and Distribution

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- Taxation

- Much of the European Union tax digital media and equipment to pay CR holders for losses expected from unauthorized copying and distribution of digital content
- Taxes on manufacturers of PCs, printers, scanners, and recorders
- Taxes on iPods, cell phones, and blank DVDs
- Taxes > 1 billion euros in 2005 (in 2005 → 1 euro ~ \$1.35)

- Does this make sense?

- For: Makers of copying equipment create losses for CR owners so a tax is a reasonable compromise
- Against: Makes equipment more expensive, penalizes equipment makers unfairly, penalizes honest users unfairly

# Summary

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- Intellectual Property in Cyberspace
  - What is Intellectual Property (IP)?
  - Why should we protect IP?
  - How has technology affected issues related to IP?
  - What are the different types of legal IP protections?
    - » Copyrights, patents, trade secrets, and trademark
  - How can we compare/contrast these types of IP protection?
  - What are the sets of copyright laws related to digital content?
  - How have the courts interpreted these laws with respect to computer software and digital music, movies, and videos?
  - What are some technology solutions to the IP problem?
    - » Encryption, Digital Rights Management systems (DRMs)
      - ◆ More on this next class