Legal Protections in the U.S.

- Copyright
- Patent
- Trade Secret

Connecticut Act of 1783

Every author should be secured in receiving the profits that may arise from the sale of [their] works, and such security may encourage [people] of learning and genius to publish their writings; which may do honor to their country, and service to [humankind].
Continental Congress

That it be recommended to the several States, to secure to the authors or publishers of any new books not hitherto printed, being citizens of the United States, and to their executors, administrators and assigns, the copyright of such books for a certain time not less than fourteen years from the first publication.

Copyright

- Protect the expression of ideas
- Promote the exchange of ideas

No Copyright

- idea
- procedure
- process
- slogan
- principle
- discovery

Statute

- U.S. Copyright Law of 1978
- Digital Millennium Copyright Act, 1998
Copyright

- Exclusive right to make and sell copies of tangible expression
- Extends only to first sale

Public Domain

- Works with no originator
- Works owned by the public
- Old works

Originality of Work

Work being copyrighted must be original to the author
<table>
<thead>
<tr>
<th>Copyrightable?</th>
<th>Fair Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Dictionary</td>
<td>Includes reproduction for</td>
</tr>
<tr>
<td>● Recipe for grilled cheese sandwich</td>
<td>● Criticism, comment</td>
</tr>
<tr>
<td>● Happy Birthday song</td>
<td>● News reporting</td>
</tr>
<tr>
<td></td>
<td>● Teaching</td>
</tr>
<tr>
<td></td>
<td>● Scholarship, research</td>
</tr>
<tr>
<td></td>
<td>● Personal use</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Piracy</th>
<th>Copyright Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfair use of a copyrighted item</td>
<td>● Copyright is automatic</td>
</tr>
<tr>
<td></td>
<td>● Registering a copyright is not</td>
</tr>
<tr>
<td></td>
<td>○ Notice: ©</td>
</tr>
<tr>
<td></td>
<td>○ Filed with Copyright Office</td>
</tr>
<tr>
<td></td>
<td>● Infringement suits require registration</td>
</tr>
</tbody>
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Patent

Protection for scientific inventions
- Tangible objects
- Processes
- Formulas

No Patent

Does not protect the design or idea
Does not protect laws of nature
- Math
- Algorithms

Patent Rights

- Must be registered
- Must be novel
- Must be non-obvious
- Must be actively protected

Method for Exercising your Cat

https://www.google.com/patents/US5443036
### Trade Secret
- Secret valuable to a business owner
- Reasonable steps must be taken to maintain secrecy

### Protection of SW
**Copyright**
- Protects the particular program, not the underlying ideas or algorithm

**Patent**
- Underlying algorithm must be novel; "sort" is not novel

**Trade Secret**
- Secret must be protected; distributing object code that can be reverse engineered reveals the secret

### Privacy
- Controlled disclosure
- Sensitive data
- Affected subject
**Controlled Disclosure**

The right to control who knows what about you

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**Sensitive Data**

- A personal decision
- No universal standard

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**Affected Subject**

- Individuals
- Organizations
- Companies
- Governments

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**Privacy & Confidentiality**

Confidentiality policies may protect private data
Privacy Costs

Limits benefits that could have come with disclosure

Privacy Protection

- Knowledge & consent
- Specific usage
- Limited retention
- Authorized disclosure
- Data protection
- Access control
- Logging accesses
- Compliant policy changes

Data Collection

Facebook
- 2.4 billion items/day
- 750 TB of data/day
- 7 PB of photos/month

Data Collection

Amazon
- 410 TB data/month
- 40 PB video/month
Fair Information Practice

Describe the privacy rights of individuals to sensitive data

Collection Limitation

Data should be obtained lawfully and fairly

Data Quality

Data should be relevant to its purpose, accurate, complete, and up to date

Purpose Specification

Purpose of data use should be identified
Data is destroyed if no longer necessary for that purpose
**Use Limitation**

Use for non-specified purpose is authorized only by data subject or by law

**Security Safeguards**

Data should be guarded against loss, corruption, destruction, or misuse

**Openness**

Information about collection, storage, and use of data should be made available

**Individual Participation**

Subject has a right to access and challenge data relating to them
Accountability

A data controller should be designated and accountable for adhering to these principles.

Data Protection

- Reduce exposure: limit data collected
- Reduce sensitivity by introducing errors
- Anonymize data by removing identifying information
- Encrypt the data

Anonymizing Data

(Zip, gender, DoB) uniquely IDs: 87% of the population

(Place, gender, DoB): 53%

(County, gender, DoB): 18%

Based on 1990 U.S. Census Summary Data

Ethics
Ethic
Collectively defined standard of right and wrong

Laws and Ethics
Laws are informed by ethics

Laws and Ethics
Law
- Described by formal documents
- Interpreted by courts

Ethics
- Described by unwritten principles
- Interpreted by each individual

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        ● Applied to everyone  
        ● Priority determined by courts in case of conflict |
| **Ethics** |   ● Described by unwritten principles  
      ● Interpreted by each individual  
      ● Presented by philosophers, religions, professional groups  
      ● Chosen personally  
      ● Priority determined by individual in case of conflict |

Laws and Ethics

**Law**
- Described by formal documents
- Interpreted by courts
- Established by legislatures representing all people
- Applied to everyone
- Priority determined by courts in case of conflict
- “Right” arbitrated by court
- Enforced by police and courts

**Ethics**
- Described by unwritten principles
- Interpreted by each individual
- Presented by philosophers, religions, professional groups
- Chosen personally
- Priority determined by individual in case of conflict
- Not arbitrated externally
- Enforced by intangibles such as principles and beliefs

Case Study: Privacy Rights

Donald works for the county records department as a computer records clerk, where he has access to files of property tax records. For a scientific study, a researcher, Ethel, has been granted access to the numerical portion—but not the corresponding names—of some records. Ethel finds some information that she would like to use, but she needs the names and addresses corresponding with certain properties. Ethel asks Donald to retrieve the names and addresses so she can contact these people for more information and for permission to do further study. Should Donald release the names and addresses?