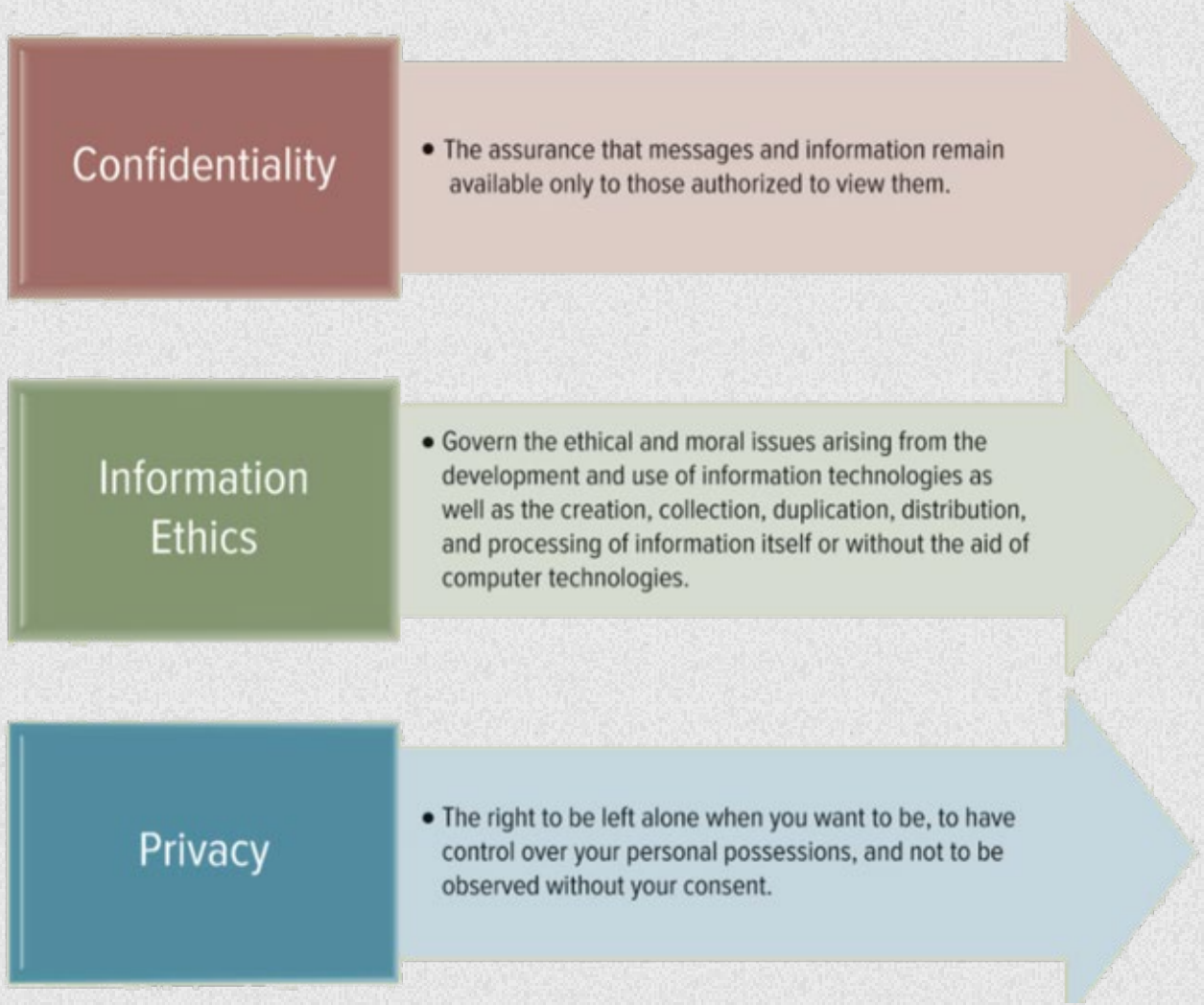
INFORMATION ETHICS 1

- **Ethics**—The principles and standards that guide our behavior toward other people

INFORMATION ETHICS 2



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INFORMATION ETHICS 3

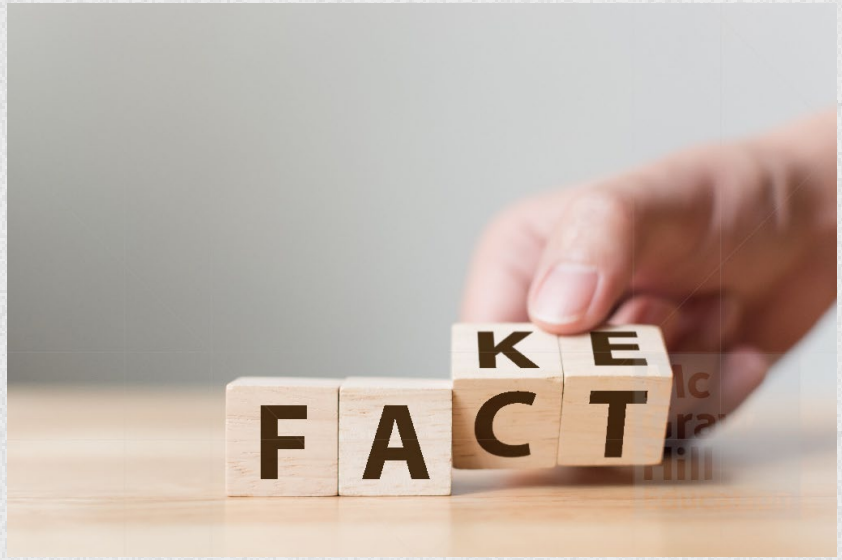
Business issues related to information ethics

- Copyright
- Counterfeit software
- Digital rights management
- Intellectual property
- Patent
- Pirated software

LEGAL VS. ETHICAL 1

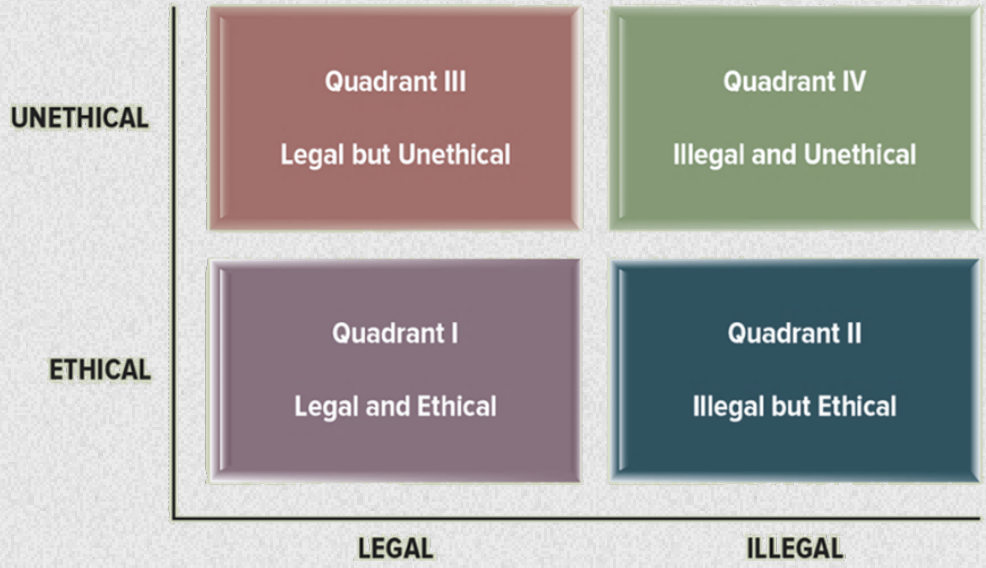
Individuals form the only ethical component of MIS

- Individuals copy, use, and distribute software
- Search organizational databases for sensitive and personal information
- Individuals create and spread viruses
- Individuals hack into computer systems to steal information
- Employees destroy and steal information



LEGAL VS. ETHICAL 2

- Acting ethically and legally are not always the same
- Information does not care how it is used. It will not stop itself from sending spam, viruses, or highly sensitive information



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INFORMATION DOES NOT HAVE ETHICS; PEOPLE DO 1

- **Data scraping—**The process of extracting large amounts of data from a website and saving it to a spreadsheet or computer

- **Digital trust—**The measure of consumer, partner, and employee confidence in an organization's ability to protect and secure data and the privacy of individuals

INFORMATION DOES NOT HAVE ETHICS; PEOPLE DO 2

Information Secrecy

The category of computer security that addresses the protection of data from unauthorized disclosure and confirmation of data source authenticity

Information Governance

A method or system of government for information management or control

Information Management

Examines the organizational resource of information and regulates its definitions, uses, value, and distribution, ensuring that it has the types of data/information required to function and grow effectively

Information Compliance

The act of conforming, acquiescing, or yielding information

Information Property

An ethical issue that focuses on who owns information about individuals and how information can be sold and exchanged

INFORMATION SECURITY

Organizational information is intellectual capital—it must be protected

- **Information security**—The protection of information from accidental or intentional misuse by persons inside or outside an organization
- **Downtime**—Refers to a period of time when a system is unavailable
- **Cybersecurity**—Involves prevention, detection, and response to cyberattacks that can have wide-ranging effects on individuals, organizations, communities, and nations
- **Cyberattacks**—Malicious attempts to access or damage a computer system

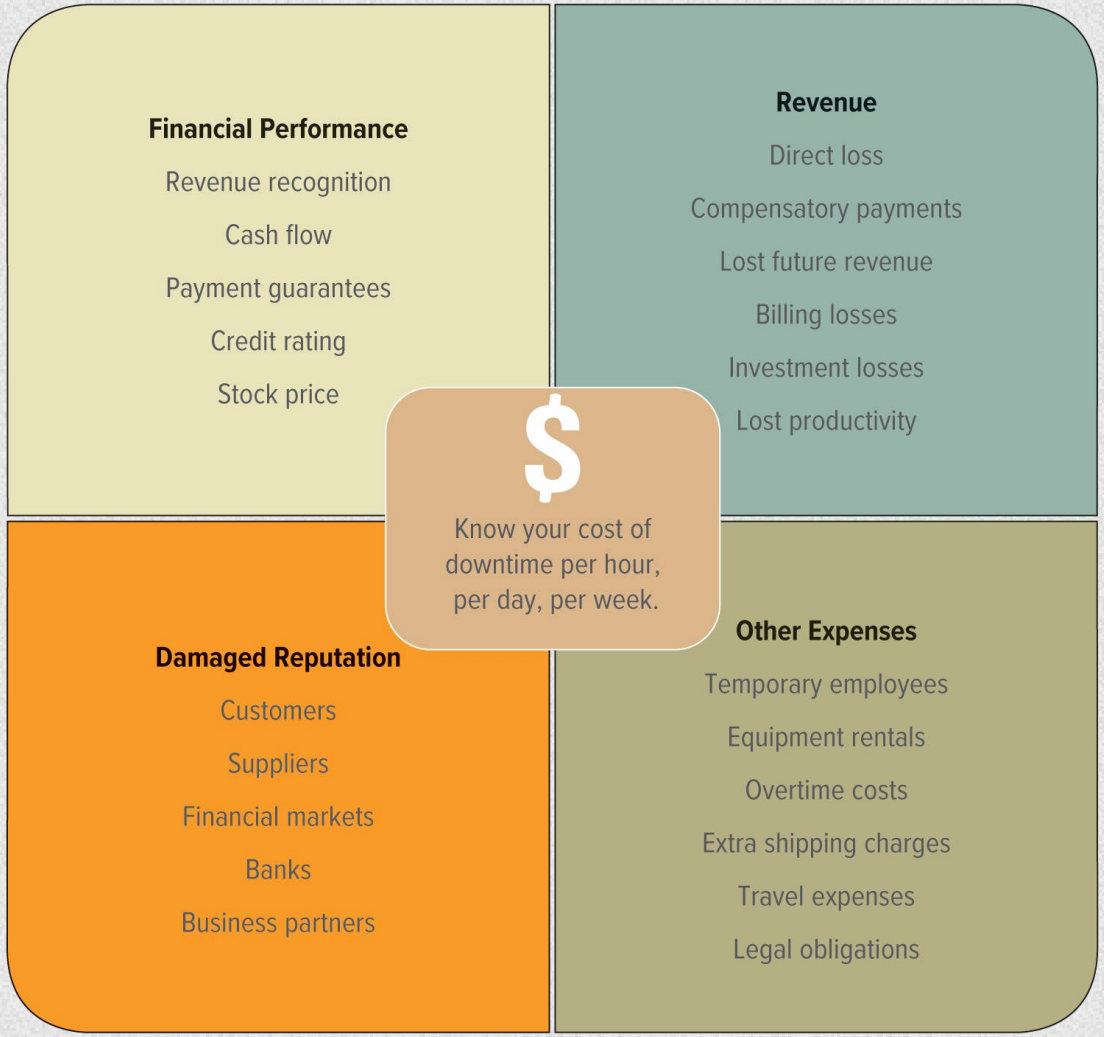
PROTECTING INTELLECTUAL ASSETS 1

- Sources of Unplanned Downtime

Bomb threat	Hacker	Snowstorm
Burst pipe	Hail	Sprinkler malfunction
Chemical spill	Hurricane	Static electricity
Construction	Ice storm	Strike
Corrupted data	Insects	Terrorism
Earthquake	Lightning	Theft
Electrical short	Network failure	Tornado
Epidemic	Plane crash	Train derailment
Equipment failure	Frozen pipe	Smoke damage
Evacuation	Power outage	Vandalism
Explosion	Power surge	Vehicle crash
Fire	Rodents	Virus
Flood	Sabotage	Water damage (various)
Fraud	Shredded data	Wind

PROTECTING INTELLECTUAL ASSETS 2

- How Much Will Downtime Cost Your Business?



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HACKERS: A DANGEROUS THREAT TO BUSINESS 1

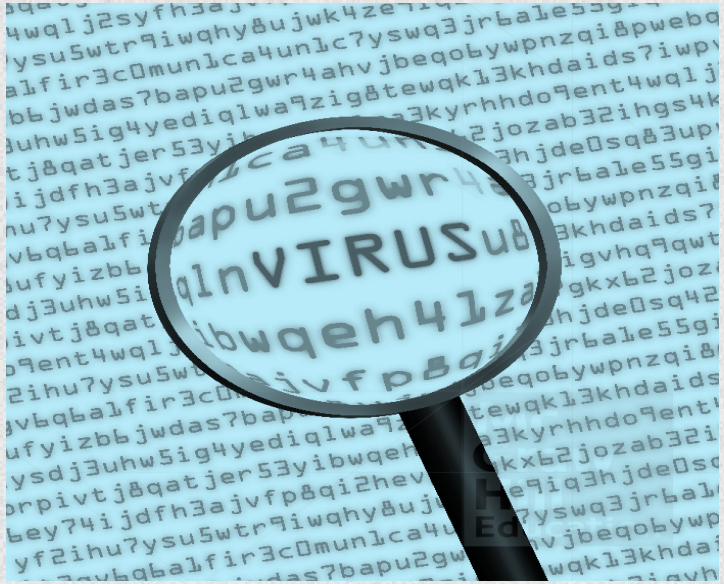
Hacker—Experts in technology who use their knowledge to break into computers and computer networks, either for profit or just motivated by the challenge

- Black-hat hacker
- Cracker
- Cyberterrorist
- Hacktivist
- Script kiddies or script bunnies
- White-hat hacker

HACKERS: A DANGEROUS THREAT TO BUSINESS 2

Virus—Software written with malicious intent to cause annoyance or damage

- Adware
- Malware
- Ransomware
- Scareware
- Spyware
- Worm



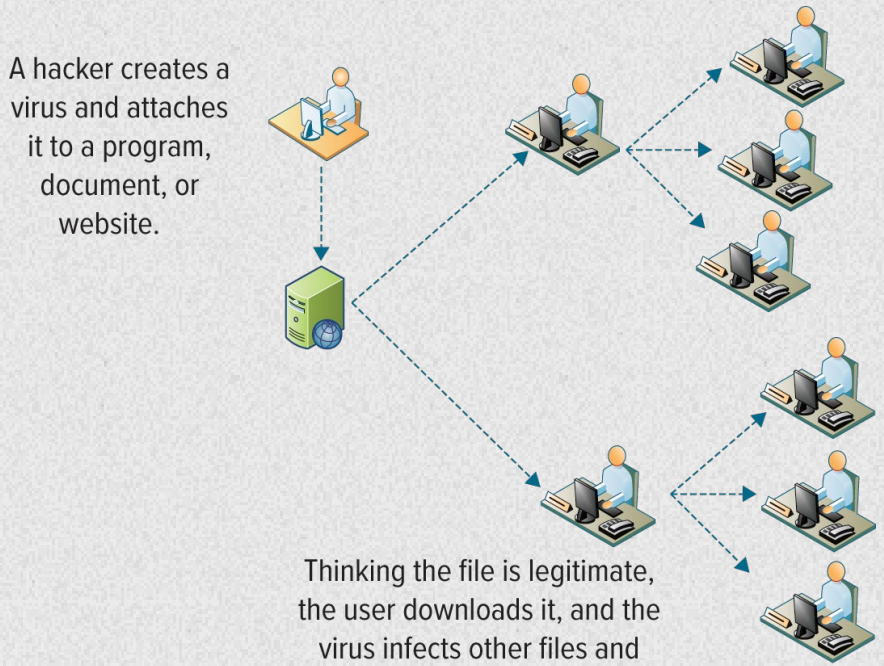
VIRUSES: A DANGEROUS THREAT TO BUSINESS 1

Virus—Software written with malicious intent to cause annoyance or damage

- Backdoor program
- Denial-of-service attack (DoS)
- Distributed denial-of-service attack (DDoS)
- Polymorphic virus
- Trojan-horse virus

VIRUSES: A DANGEROUS THREAT TO BUSINESS 2

How Computer Viruses Spread



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VIRUSES: A DANGEROUS THREAT TO BUSINESS 3

Security threats to ebusiness include

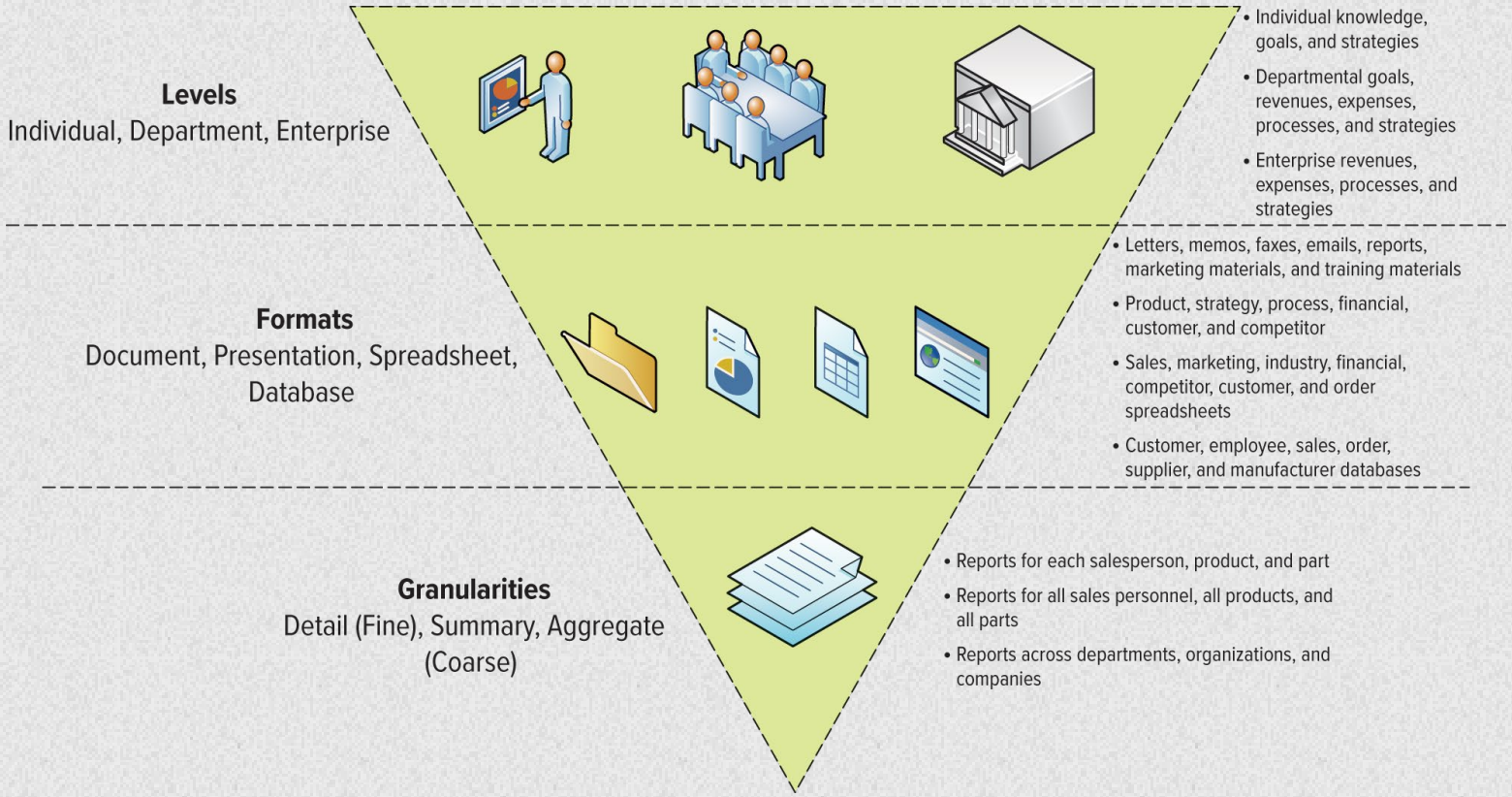
- Elevation of privilege
- Hoaxes
- Malicious code
- Packet tampering
- Sniffer
- Spoofing
- Splogs
- Spyware

DATA 1

- Data is everywhere in an organization
- Employees must be able to obtain and analyze the many different levels, formats, and granularities of organizational data to make decisions
- Successfully collecting, compiling, sorting, and analyzing data can provide tremendous insight into how an organization is performing

DATA 2

- Levels, Formats, and Granularities of Data



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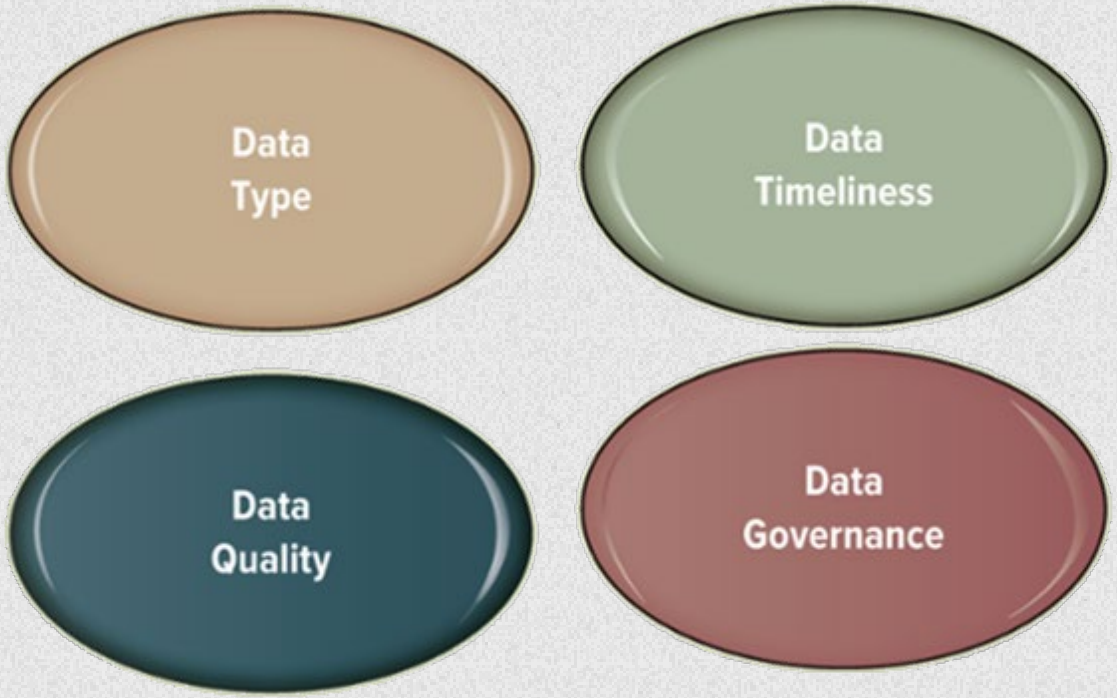
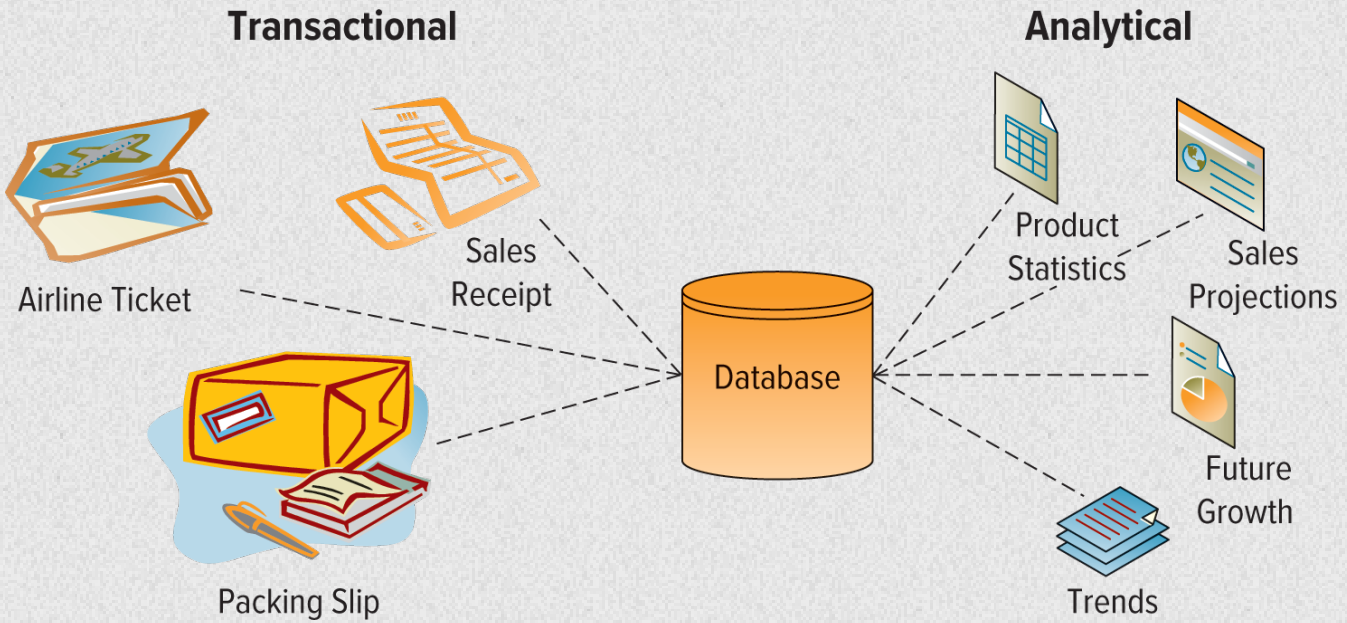
DATA TYPE: TRANSACTIONAL AND ANALYTICAL 1

- The Four Primary Traits of The Value of Data



DATA TYPE: TRANSACTIONAL AND ANALYTICAL 2

- **Transactional data**
- **Analytical data**



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DATA TIMELINESS

Timeliness is an aspect of data that depends on the situation

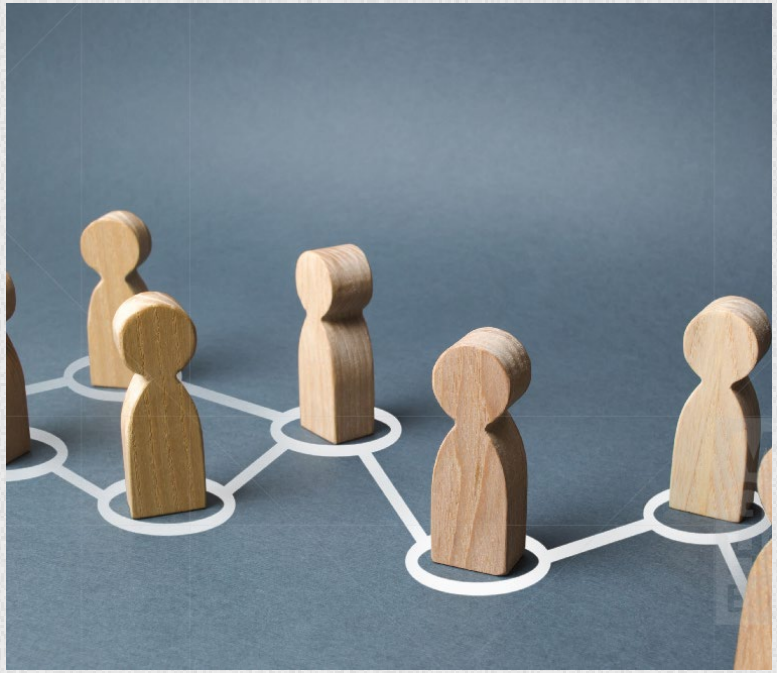
- **Real-time data**
- **Real-time system**

DATA QUALITY 1

Business decisions are only as good as the quality of the data used to make the decisions

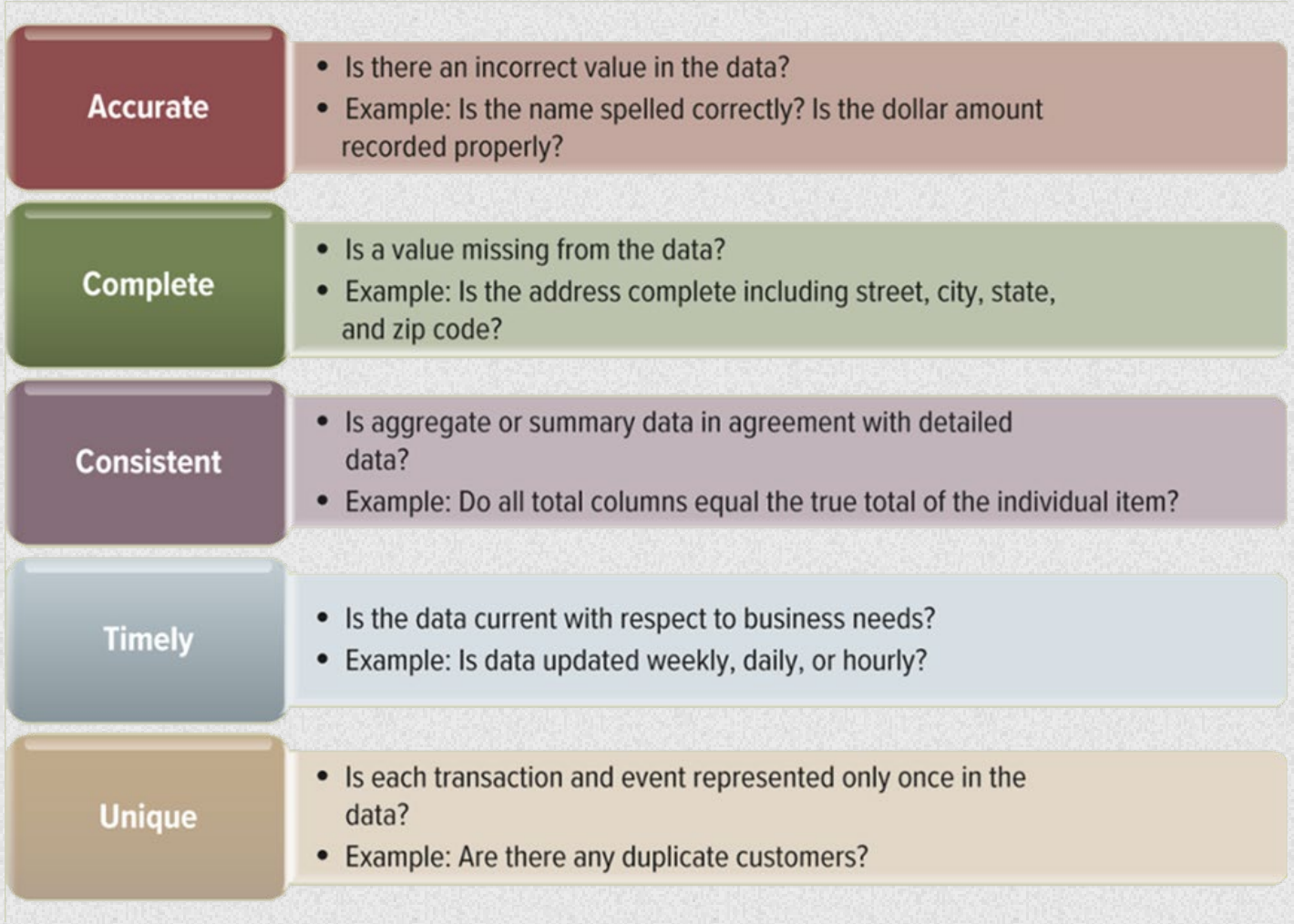
You never want to find yourself using technology to help you make a bad decision faster

- **Data inconsistency**
- **Data integrity issues**



DATA QUALITY 2

- Characteristics of High-Quality Data



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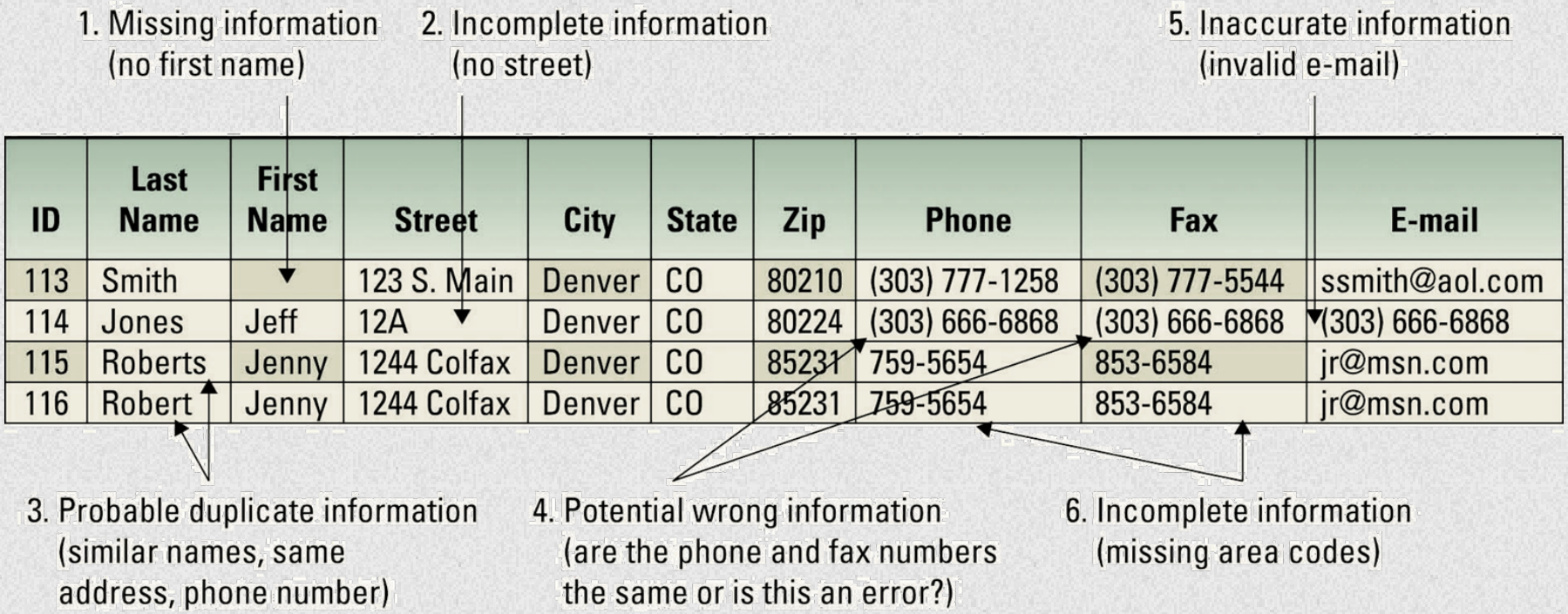
DATA QUALITY 3

- Low Quality Data Example



ID	Last Name	First Name	Street	City	State	Zip	Phone	Fax	E-mail
113	Smith		123 S. Main	Denver	CO	80210	(303) 777-1258	(303) 777-5544	ssmith@aol.com
114	Jones	Jeff	12A	Denver	CO	80224	(303) 666-6868	(303) 666-6868	(303) 666-6868
115	Roberts	Jenny	1244 Colfax	Denver	CO	85231	759-5654	853-6584	jr@msn.com
116	Robert	Jenny	1244 Colfax	Denver	CO	85231	759-5654	853-6584	jr@msn.com

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UNDERSTANDING THE COSTS OF USING LOW-QUALITY DATA 1

- The four primary sources of low-quality data include
  1. Customers intentionally enter inaccurate data to protect their privacy
  2. Different entry standards and formats
  3. Operators enter abbreviated or erroneous data by accident or to save time
  4. Third party and external data contains inconsistencies, inaccuracies, and errors

UNDERSTANDING THE COSTS OF USING LOW-QUALITY DATA 2

Potential business effects resulting from low-quality data include

- Inability to accurately track customers
- Difficulty identifying valuable customers
- Inability to identify selling opportunities
- Marketing to nonexistent customers
- Difficulty tracking revenue
- Inability to build strong customer relationships

UNDERSTANDING THE BENEFITS OF GOOD DATA

- High-quality data can significantly improve the chances of making a good decision
- Good decisions can directly impact an organization's bottom line

DATA GOVERNANCE

Data governance—Refers to the overall management of the availability, usability, integrity, and security of company data

- **Master data management (MDM)**
- **Data validation**

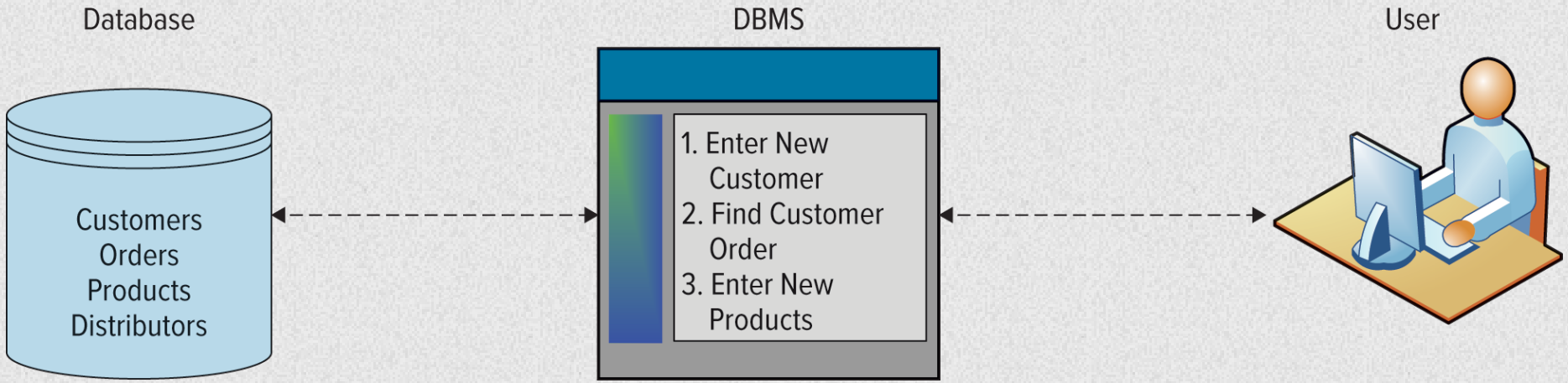
STORING DATA IN A RELATIONAL DATABASE 1

Data is everywhere in an organization

Data is stored in databases

- **Database**—maintains data about various types of objects (inventory), events (transactions), people (employees), and places (warehouses)

STORING DATA IN A RELATIONAL DATABASE 2



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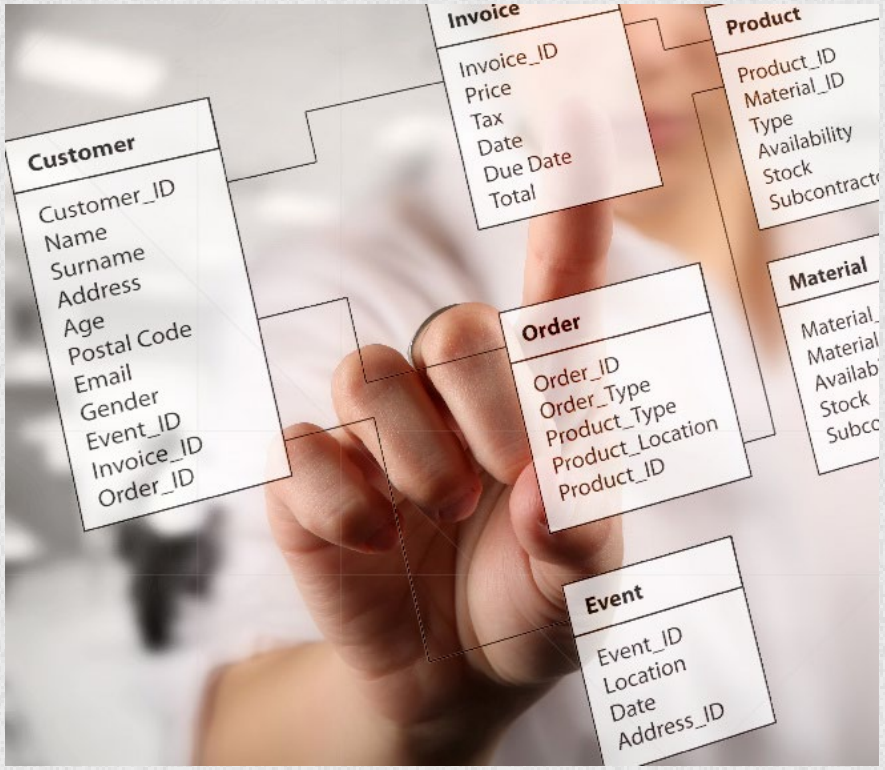
STORING DATA IN A RELATIONAL DATABASE 3

Database management systems (DBMS)— Allows users to create, read, update, and delete data in a relational database

- **Data element**
- **Data model**
- **Metadata**
- **Data dictionary**



STORING DATA ELEMENTS IN ENTITIES AND ATTRIBUTES

- **Entity**—The rows in a table contain entities
- **Attribute (field, column)**—The columns in each table contain the attributes
- **Record**—A collection of related data elements

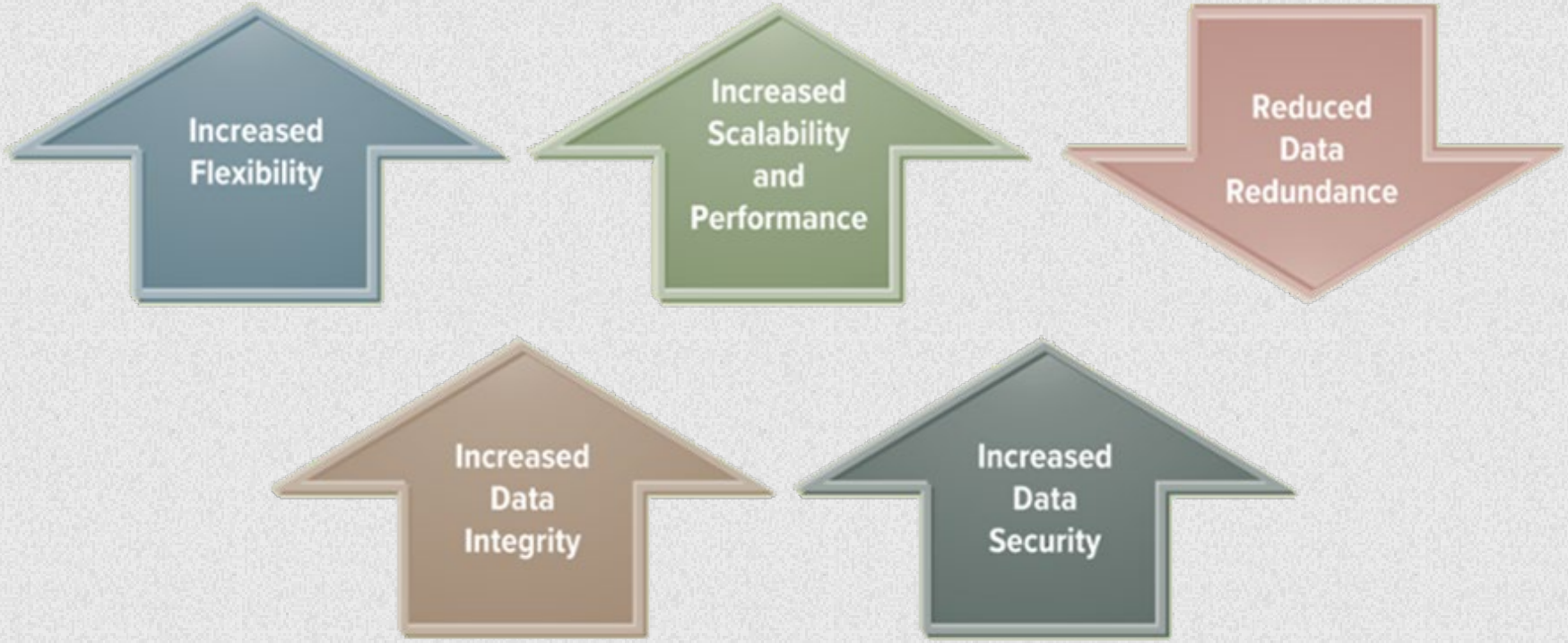
CREATING RELATIONSHIPS THROUGH KEYS

Primary keys and foreign keys identify the various entities (tables) in the database

- **Primary key**
- **Foreign key**

USING A RELATIONAL DATABASE FOR BUSINESS ADVANTAGES

- Database Advantages from a Business Perspective Include



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INCREASED FLEXIBILITY

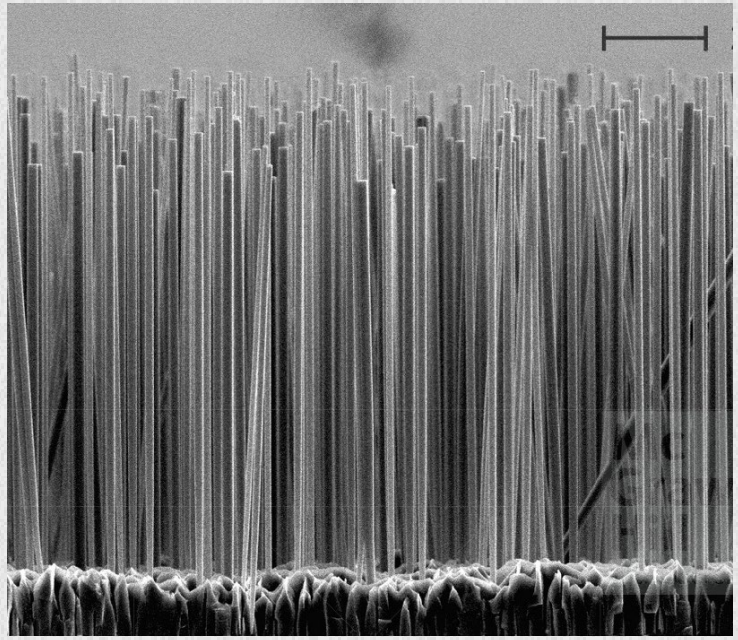
A well-designed database should

- Handle changes quickly and easily
- Provide users with different views
- Have only one physical view—Deals with the physical storage of data on a storage device
- Have multiple logical views—Focuses on how individual users logically access data to meet their own particular business needs

INCREASED SCALABILITY AND PERFORMANCE

A database must scale to meet increased demand, while maintaining acceptable performance levels

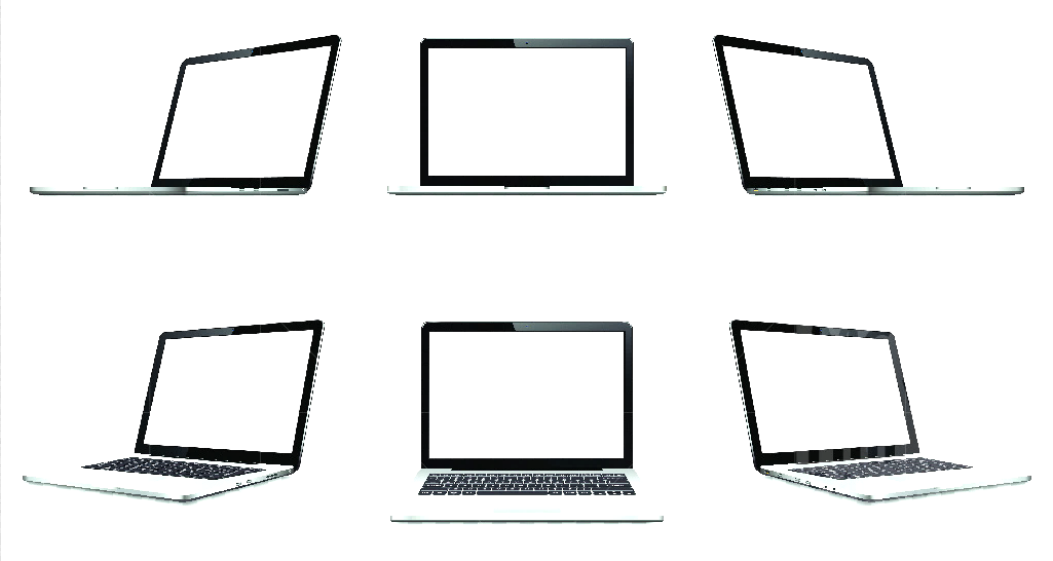
- **Scalability**
- **Performance**



REDUCED DATA REDUNDANCY

Data redundancy—Databases reduce data redundancy

- Inconsistency is one of the primary problems with redundant data



INCREASE DATA—INTEGRITY (QUALITY)

Data integrity—measures the quality of data

Integrity constraint—rules that help ensure the quality of data

- **Relational integrity constraint**
- **Business-critical integrity constraint**

INCREASED DATA SECURITY

Data is an organizational asset and must be protected

Databases offer several security features

- **Password**
- **Access level**
- **Access control**