Data Models, Queries, Evaluation
(Chapter 1)

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What are Database Systems?

Database systems are software that provide

• abstract data models,
• easy-to-use queries
• good query evaluation performance.
Example Database System

- MySQL
- Oracle
- MLPQ
Data Abstraction

Data Abstraction Features:

• Hides some parts of the data that are unimportant.
• Makes queries easier.
Data Abstraction Increases over Time

- **1960s** – Hierarchical Databases and Network Databases
  
  Tables represented as linked lists, queries used pointers to search for data.

- **1970** – Relational Databases introduced by Edgar F. Codd at IBM research
  
  IBM, which already marketed Hierarchical Databases, did not embrace the idea. Many experts thought that Relational Databases will never be practical because they require more computer memory than other databases. Larry Ellison, founder of Oracle, saw an opportunity to develop commercial Relational Databases.

- **1980s** – Oracle first to market Relational Databases

- **2000s** – practical Geographic Information Systems
Data Models

Some examples of different types of data:

- Tax records
- Maps
- Photos
- Music
- Genomes
Data Models

Some examples of different types of data:
A) Tax records
B) Maps
C) Photos
D) Music
E) Genomes

Out of the above, what type of data can relational databases handle? ___________
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