Databases – Chapter 7

Flat Database Example

<table>
<thead>
<tr>
<th>Class</th>
<th>Name</th>
<th>Addr</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 120</td>
<td>Smith</td>
<td>123 Main</td>
<td>562-948-3241</td>
</tr>
<tr>
<td>BBLE 100</td>
<td>Clark</td>
<td>342 Elm</td>
<td>714-320-3423</td>
</tr>
<tr>
<td>CSCI 104</td>
<td>Smith</td>
<td>123 Main</td>
<td>562-948-3241</td>
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<td>Clark</td>
<td>342 Elm</td>
<td>714-320-3423</td>
</tr>
<tr>
<td>CSCI 104</td>
<td>Jones</td>
<td>3000 W 1st</td>
<td>349-342-9932</td>
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</tbody>
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Relational Database

<table>
<thead>
<tr>
<th>Class Roster Table</th>
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<tbody>
<tr>
<td>Cl_ID</td>
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<tr>
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<table>
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<td>1394352</td>
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</table>

Transaction Processing

- Whole computer systems dedicated to it
- Special systems assure:
  - Redundancy – transaction never lost
  - Multiple users & record locking
  - "Atomic" operations

Databases & the Web

- Databases behind almost any online system
- Banking, Blackboard, WebReg, Google, online shopping
Data Mining

• Masses of data available:
  – Every phone call
  – Every ATM purchase
  – Every cash purchase with club card

Identity Theft

• The deliberate assumption of another person’s identity
• Usually to gain access to finances
• Sometimes to frame for a crime
• In USA: 93 million victims a year (4.25% of adults)
Social Security Number

- Purpose: track working people for tax purposes
- Became *de facto* national ID number, a “primary key”
- Often treated as an *authenticator*
- No biometric features
- No other national ID in the USA

Credit Bureaus

- Three: Equifax, TransUnion, Experian
- Track your loans
- Assign a Credit Score
- You may check your own record
- You may fix errors

Identity Theft Protection

- Protect your SSN
- Don’t fall for “phishing”
- Shred your financial trash
- Use anti-virus software
- Check for https when shopping online
- Check your bills & bank statement
  (Use Quicken or MS Money)

Identity Theft Protection

- Check your credit reports
  Stagger every 3 months
- Fix incorrect information
- Put yourself on “do not call” list
- Do not keep your SSN card in your wallet or purse

Advanced Techniques

- Keep a low profile:
  – Use cash
  – Use a Post Office box
  – Have an unlisted number or cell phone
- CA residents can Freeze their credit report:
  – Free if you’ve been an ID theft victim
  – $10 / agency if not

Scott McNealy

You have zero privacy anyway. Get over it.