Database Design Workshop

i257
Tuesday, Sept. 19, 2006
Assignment 2

- Written description of the database
  - use cases
- Data dictionary
- ER diagram
  - five real entities + composites
Description

• Brief Summary
  – What is the problem that the DB will solve?
  – Who will use it?
  – What’s the scope of use?
Use Cases

• Specific things that the database will need accomplish.
Use Cases for the Bank Database

- Create a new customer account
- Record cash withdrawal from an ATM
- Transfer money from one account to another
- Look up recent transactions
- Generate a monthly statement
Use Cases Details

• Cash withdrawal
  - ATM sends account number and requested amount
  - Find the BankAccount entity by account number
  - Check sufficient balance, if sufficient:
    • Tell ATM to issue cash
    • Create a Transaction, link to the Account
    • Update Account balance
    • Update cash quantity for the ATM (how?)
The Data Dictionary

• List all entities
• List all attributes for each entity
• For each attribute:
  – name
  – description
  – primary key?
  – format
  – can it undefined?
  – optionally: access rights
Entity “BankAccount” (1/3)

- accountNumber
  - the account number as seen by the customer
  - long integer, must be defined
  - <<PK>>

- balance
  - current account balance
  - decimal number, 0 by default
Entity “BankAccount” (2/3)

- **trackedToFBI**
  - should transactions on this account automatically reported to FBI
  - boolean, default to “False”
  - can only be seen by a Manager or above
  - can only be set by a Director

- **currency**
  - the currency is which this account denominated
  - FK to “Currency”, must be defined
Entity “BankAccount” (3/3)

- other relationships
  - account ownership represented by “AccountOwnership” entity
  - account transactions are linked with a FK from “Transaction” entity