

# Database Design Workshop

i257

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# 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 be 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