IT360: Applied Database Systems

Exercise Set

ER To Relational

ER to Relational - Summary

- Transform entities in tables
  - Specify primary and alternate keys
  - Specify column types, null status, default values, constraints
- Transform relationships using foreign keys
  - Place the key of the parent in the child
  - Create intersection tables, if needed
- Specify logic for enforcing minimum cardinalities
  - Actions for insert, delete, update
SQL: Creating Tables

CREATE TABLE table_name(
    column_name1 column_type1 [constraints1],
    ...
    )

Table constraints:
• NULL/NOT NULL
• PRIMARY KEY (columns)
• UNIQUE (columns)
• CHECK (conditions)
• FOREIGN KEY (local columns) REFERENCES foreign_table (foreign_columns) [ON DELETE action_d ON UPDATE action_u]

Specify surrogate key in SQL Server:
    column_name int_type IDENTITY (seed, increment)
Specify surrogate key in MySQL:
    column_name int_type AUTO_INCREMENT

Transform to Relational Model
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Transform to Relational Model
1:1 Recursive Relationship
Transform to Relational Model

1:N Recursive Relationship –
Transform to Relational Model
N:M Recursive Relationship
Transform to Relational Model

Transform to Relational Model