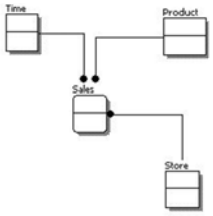
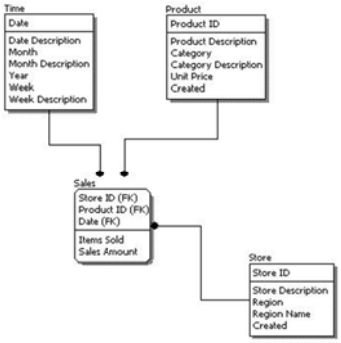
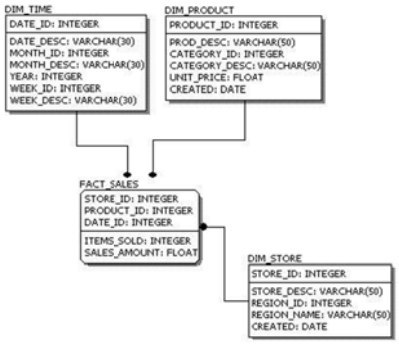
DAY1

MODELS

Three different ways of modeling data in a domain
The complexity increases from conceptual to logical to physical
All contain entities and relationships, but are created for different target audiences







Conceptual model	Logical model	Physical model
Used by business analyst Entities / Relationships	Used by system developer Attributes Primary keys / Foreign keys	Used by database designer Tables / Columns (Names) Data types

CONCEPTS / TERMS

DBMS
: System software for creating and managing databases

MySQL
: Open source database management system

MySQL Workbench
: Visual tool for database architects to visually design, model, generate, and manage databases

Setup / Configuration
: Local DB / DO DB

Demo DB
: ClassicModels

Import
: Open SQL script / Run SQL script

Export
: Server -> Data export -> Self-contained file / Include create schema

Schemas / Database
: Schema = Database

Model
: Create EER model from database / Create EER model from script
: Synchronize model with database

Table
: Collection of related data held in a structured format consisting of rows and columns

: Column
: : Set of data values of a particular simple type
: Row
: : Single, implicitly structured data item

Naming conventions

Table

Like class names / Upper case first letter / Singular / LargeandSmallLetters

Column

Lower case first letter / Singular in table / smallAndLargeLetters

Data types

Numeric

INTEGER, INT, SMALLINT, TINYINT, MEDIUMINT, BIGINT

FLOAT, DOUBLE

Text

CHAR, VARCHAR

Time

DATE, DATETIME, TIMESTAMP

Unique

No two rows with the same value

Null

Specify a column to never contain null values

Default

Specify a column to have a default value

Keys

Unique column that cannot be null

Index is created for keys

Faster to retrieve a row based on a key

Should not change over time

Primary key

Key chosen for identification of rows in a table

Composite key

Composed of multiple columns

Foreign key

Column that has a value which exists as primary keys in other table

Creates relationships between tables

Relationships / Relations

OneToOne / OneToMany / ManyToOne / ManyToMany

SCRIPTING

SQL

Read / Write

Select

Insert / Update / Delete

Where

Order By

Functions (Aggregate / Scalar)

Group By