# Lecture 1 Introduction to Database Management

#### Objectives

- TAL Distributors 케이스의 소개
  - 수업에서 많이 쓰여질 예제 회사 케이스
- 기본적인 Database 용어의 소개
- Database management systems (DBMSs) 의 소개
- 데이터베이스 프로세싱 (Database Processing) 의 장단점

#### Objectives (continued)

- Colonial Adventure Tours 케이스의 소개
- Solmaris CondominiumGroup 케이스의 소개

#### TAL Distributors Background

#### TAL Distributors

- Wholesaler: wooden toys, games, puzzles
- 중요한 데이터의 관리를 위해 Spreadsheet Software 를 사용함
- 최근 사세와 사업의 성장이 spreadsheet approach 의 문제점을 드러냄

### TAL Distributors Background

Orders requiring more than one spreadsheet row									
Customer Number	Customer Name	Order Number	Order Date	Item Number	Description	Number Ordered	Quoted Price	Store house	Rep Numbe
126	Toys Galore	51608	10/12/2015	CD33	Wood Block Set (48 piece)	5	\$86.99	1	15
126	Toys Galore	51619	10/15/2015	FD11	Rocking Horse	2	\$121.95	3	15
260	Brookings Direct	51614	10/13/2015	FD11	Rocking Horse	1	\$124.95	3	30
334	The Everything Shop	51610	10/12/2015	KL78	Pick Up Sticks	25	\$10.95	1	45
334	The Everything Shop	51610	10/12/2015	TR40	Tic Tac Toe	10	\$13.99	2	45
386	Johnson's Department Store	51613	10/13/2015	DL51	Classic Railway Set	5	\$104.95	3	30
586	Almondton General Store	51617	10/15/2015	NL89	Wood Block Set (62 piece)	4	\$115.99	3	45
586	Almondton General Store	51617	10/15/2015	TW35	Fire Engine	3	\$116.95	2	45
586	Almondton General Store	51623	10/15/2015	DR67	Giant Star Brain Teaser	5	\$29.95	2	45
586	Almondton General Store	51623	10/15/2015	FH24	Puzzle Gift Set	12	\$36.95	1	45
586	Almondton General Store	51623	10/15/2015	KD34	Pentominoes Brain Teaser	10	\$13.10	2	45
796	Unique Gifts	51625	10/16/2015	MT03	Zauberkasten Brain Teaser	8	\$45.79	1	45

FIGURE 1-1: Sample orders spreadsheet

#### TAL Distributors의 Background

- Spreadsheet 사용의 문제점
  - Redundancy (중복)
    - 같은 data가 여러곳에 저장되거나 중복/복사 됨
  - 필요한 관련데이터의 접근이 어려움
  - 보안상의 한계점
  - 사이즈의 한계

#### TAL Distributors의 Background

- TAL Distributors 가 관리해야 할 정보
  - Sales Reps (영업사원)
    - Sales rep number, last name, first name, address, total commission, commission rate
  - Customers (고객)
    - Customer number, name, address, current balance, credit limit, number of customer's sales rep
  - Items Inventory (제품)
    - Item number, description, number units on hand, item category, storehouse number, unit price

## TAL Distributors Background

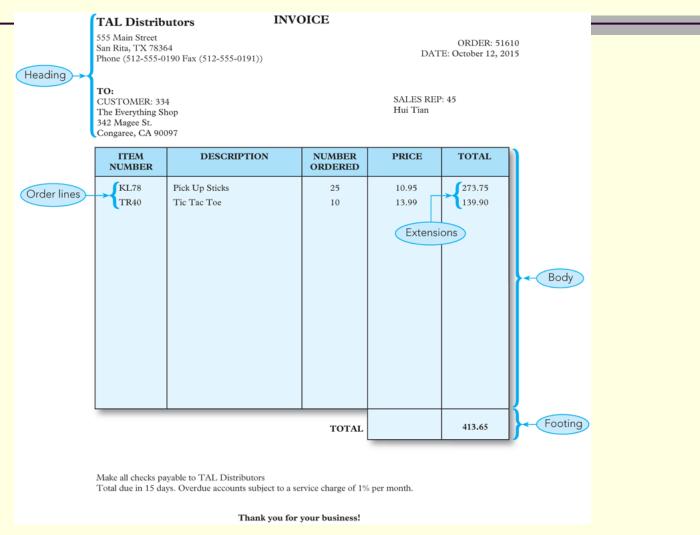


FIGURE 1-2: Sample order

#### TAL Distributors의 Background

- 각 고객의 주문에 관련 된 아이템들
  - Order (주문)
    - Order number, order date, customer number
  - Order line (주문행)
    - Order number, item number, number of units ordered, quoted price
  - Overall order total (전체주문액)
    - Not stored because it can be calculated

#### Database Background

#### Database

- Structure that can store information about (다음과 같은 정보를 저장할 수 있는 구조):
  - Different categories of information (다른 카테고리의 정보)
  - Relationships between those categories of information (다른 카테고리 정보 사이의 관계)
- Entity (엔터티, 객체)
  - Person, place, object, event, or idea
  - Entities for TAL Distributors: sales reps, customers, orders, and items

#### Database Background (continued)

#### ■ Attribute (속성)

- Characteristic (특성) or property (속성) of an entity
- Example: Customer has name, street, city, etc.
- field 혹은 column 으로도 불린다
- Relationship (관계)
  - Association between entities (엔터티 사이의 관계)
  - One-to-many relationship
    - Each rep is associated with many customers
    - Each customer is associated with a single rep

### Database Background (continued)

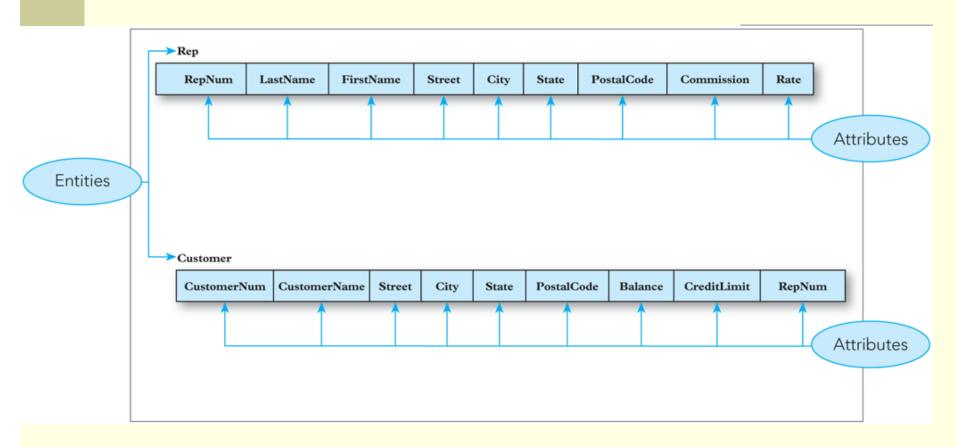


FIGURE 1-3: Entities and attributes

#### Database Background (continued)

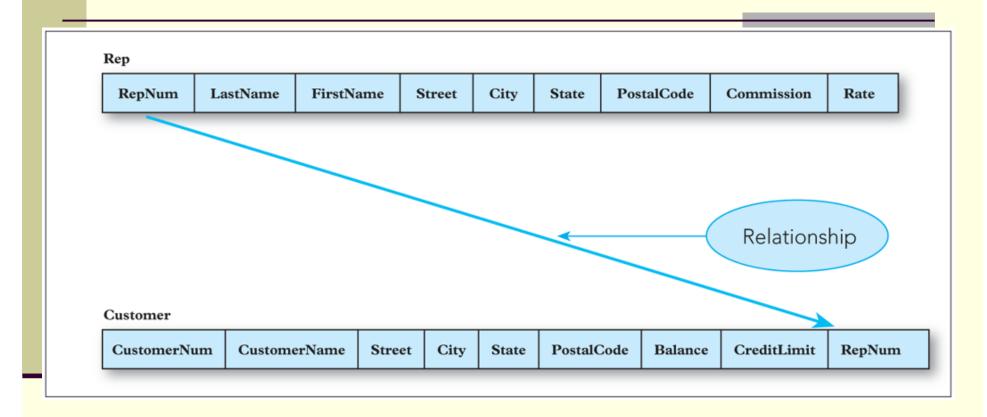


FIGURE 1-4: One-to-many relationship