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\* Toy Store

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\* Constraint Names: Primary Key - pk\_table\_name

\* Foreign Key - fk\_parent\_child\_table\_names (except for unary subcategory)

\* Unique - un\_column\_name (account, category, supplier)

\* Check - chk\_column\_name (orders)

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DROP DATABASE IF EXISTS ToyStore;

CREATE DATABASE ToyStore;

USE ToyStore;

-- SET default\_storage\_engine=InnoDB; -- engine=innodb defined in each table

-- Sorted so drops child tables with foreign keys first

DROP TABLE IF EXISTS inventory; -- References item

DROP TABLE IF EXISTS lineitem; -- References orders, item

DROP TABLE IF EXISTS wishlist; -- References account, item

DROP TABLE IF EXISTS item; -- References product, supplier

DROP TABLE IF EXISTS orderstatus; -- References orders

DROP TABLE IF EXISTS orders; -- References account

DROP TABLE IF EXISTS product; -- References category, series

DROP TABLE IF EXISTS xrefseriesgenre; -- References series, genre

DROP TABLE IF EXISTS category; -- FK Itself

DROP TABLE IF EXISTS account; -- No FK

DROP TABLE IF EXISTS genre; -- No FK

DROP TABLE IF EXISTS series; -- No FK

DROP TABLE IF EXISTS supplier; -- No FK

-- Table 1. - account - REFERENCED by orders

CREATE TABLE account (

user\_id INT AUTO\_INCREMENT, -- Primary key

user\_name VARCHAR(32) NOT NULL, -- Set unique at table level

password VARCHAR(32) NOT NULL, -- password restricted word

first\_name VARCHAR(32) NOT NULL, -- VARCHAR - variable length string type

middle\_name VARCHAR(32) NOT NULL,

last\_name VARCHAR(32) NOT NULL,

birthday DATE NOT NULL,

gender ENUM('M', 'F') DEFAULT 'M', -- enum/list

email VARCHAR(64) NOT NULL,

address VARCHAR(64) NOT NULL,

city VARCHAR(32) NOT NULL,

state\_province VARCHAR(32) NOT NULL,

zip\_post\_code VARCHAR(10) NOT NULL,

country CHAR(3) NOT NULL, -- CHAR - fixed length string type

phone\_number VARCHAR(32) NOT NULL,

fax\_number VARCHAR(32) NOT NULL,

CONSTRAINT pk\_account PRIMARY KEY (user\_id),

CONSTRAINT un\_user\_name UNIQUE (user\_name) -- Set user\_name as named constraint unique

)

ENGINE=InnoDB; -- TYPE=INNODB gives error

-- Table 2. - category REFERENCED by product

CREATE TABLE category (

cat\_id TINYINT AUTO\_INCREMENT, -- Primary key - product data type "very small range of integers"

cat\_name VARCHAR(64) NOT NULL, -- Table level unique constraint

parent\_id TINYINT, -- Foreign key - category.cat\_id (This table)

CONSTRAINT pk\_category PRIMARY KEY (cat\_id),

CONSTRAINT fk\_subcategory FOREIGN KEY (parent\_id)

REFERENCES category(cat\_id) ON DELETE RESTRICT, -- Foreign Key references its own cat\_id field for subcategory

CONSTRAINT un\_cat\_name UNIQUE (cat\_name) -- Set cat\_name unique

)

ENGINE=InnoDB;

-- Table 3. - genre REFERENCED by xrefseries

CREATE TABLE genre (

genre VARCHAR(32), -- Primary key is unique

CONSTRAINT pk\_genre PRIMARY KEY (genre)

)

ENGINE=InnoDB;

-- Table 4. series REFERENCED by product, xrefseriesgenre

CREATE TABLE series (

series VARCHAR(128), -- Primary key is not null

CONSTRAINT pk\_series PRIMARY KEY (series)

)

ENGINE=InnoDB;

-- Table 5. supplier REFERENCED by item

CREATE TABLE supplier (

supplier\_id INT AUTO\_INCREMENT, -- Primary key is not null

name VARCHAR(64) NOT NULL,

address VARCHAR(128) NOT NULL,

city VARCHAR(32) NOT NULL,

state\_province VARCHAR(32) NOT NULL,

zip\_post\_code VARCHAR(32) NOT NULL,

country CHAR(3) NOT NULL DEFAULT 'IRE',

phone\_number VARCHAR(32) NOT NULL, -- Table level unique constraint

fax\_number VARCHAR(32) NULL, -- Nulls allowed

CONSTRAINT pk\_supplier PRIMARY KEY(supplier\_id),

CONSTRAINT un\_phone\_number UNIQUE (phone\_number)

)

ENGINE=InnoDB;

-- Table 6.

CREATE TABLE product (

product\_id SMALLINT, -- Primary key is not null

cat\_id TINYINT, -- Foreign key - category.cat\_id

name VARCHAR(128) NOT NULL,

-- description TEXT NOT NULL,

description VARCHAR(1028) NOT NULL, -- VARCHAR up to 65,535 (says 255 on handout), blob or text also usable, Length not specified with blob or text

series VARCHAR(128) NOT NULL, -- Foreign key - series.series

manufacturer VARCHAR(128) NOT NULL,

-- INDEX (cat\_id), -- On moodle "Enforcing Referential Integrity"

-- INDEX (series),

CONSTRAINT pk\_product PRIMARY KEY (product\_id),

CONSTRAINT fk\_product\_category FOREIGN KEY (cat\_id)

REFERENCES category (cat\_id) ON DELETE RESTRICT,

CONSTRAINT fk\_product\_series FOREIGN KEY (series)

REFERENCES series (series) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 7. item REFERENCED by inventory, lineitem

CREATE TABLE item (

item\_id INT AUTO\_INCREMENT, -- Primary key is not null

product\_id SMALLINT, -- Foreign key - product.product\_id

listprice DECIMAL(5,2) NOT NULL, -- expensive toy if it costs more than 999.99

unitprice DECIMAL(5,2) NOT NULL,

supplier\_id INT NOT NULL, -- Foreign key - supplier.supplier\_id

status ENUM('A','O','B','P','R'),

colour VARCHAR(16) DEFAULT NULL, -- named "color" on ERD

size VARCHAR (16) DEFAULT NULL,

CONSTRAINT pk\_item PRIMARY KEY (item\_id),

CONSTRAINT fk\_item\_product FOREIGN KEY (product\_id)

REFERENCES product (product\_id) ON DELETE RESTRICT,

CONSTRAINT fk\_item\_supplier FOREIGN KEY (supplier\_id)

REFERENCES supplier (supplier\_id) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 8. inventory

CREATE TABLE inventory (

item\_id INT, -- Primary key, foreign key - item.item\_id

quantity INT UNSIGNED NOT NULL,

CONSTRAINT pk\_inventory PRIMARY KEY(item\_id),

CONSTRAINT fk\_inventory\_item FOREIGN KEY (item\_id)

REFERENCES item(item\_id) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 9. orders - REFERENCED by lineitem, orderstatus

CREATE TABLE orders (

order\_id INT AUTO\_INCREMENT, -- Primary key is not null

user\_id INT NOT NULL, -- Foreign key - account.user\_id

-- order\_date TIMESTAMP DEFAULT NOW(), -- Tried different time settings - ON UPDATE CURRENT\_TIMESTAMP

-- order\_date DATETIME NOT NULL DEFAULT CURRENT\_TIMESTAMP, -- DATE, GETDATE, NOW()

-- order\_date DATE DEFAULT NOW(), -- Invalid default value

-- order\_date DATE DEFAULT GETDATE(), -- GETDATE() ...said in a few places on the interweb to use this, doesn't work

order\_date DATETIME NOT NULL DEFAULT NOW(),

total\_price DECIMAL(6,2) NOT NULL, -- 9999.99

ship\_firstname VARCHAR(32) NULL,

ship\_middlename VARCHAR(32) DEFAULT NULL, -- NULL DEFAULT NULL seemed like a bit too many Nulls

ship\_lastname VARCHAR(32) NULL,

ship\_address VARCHAR(128) NULL,

ship\_city VARCHAR(32) NULL,

ship\_state\_province VARCHAR(32) NULL,

ship\_zip\_post\_code VARCHAR(32) NULL,

ship\_country CHAR(3) NULL,

courier\_id VARCHAR(16) NOT NULL, -- NOT NULL

bill\_firstname VARCHAR(32) NULL,

bill\_middlename VARCHAR(32) NULL,

bill\_lastname VARCHAR(32) NULL,

bill\_address VARCHAR(32) NULL,

bill\_city VARCHAR(32) NULL,

bill\_state\_province VARCHAR(32) NULL,

bill\_zip\_post\_code VARCHAR(32) NULL,

bill\_country VARCHAR(32) NULL,

credit\_card CHAR(16) NOT NULL,

-- cc\_type VARCHAR(10) NOT NULL CHECK (cc\_type IN ('Visa','Mastercard','AMEX')), -- Used table level constraint

-- cc\_type ENUM ('Visa', 'Mastercard', 'AMEX') NOT NULL, -- Used table level constraint

cc\_type VARCHAR(10) NOT NULL,

cc\_expire DATE NOT NULL,

CONSTRAINT pk\_orders PRIMARY KEY(order\_id),

CONSTRAINT fk\_orders\_account FOREIGN KEY (order\_id)

REFERENCES account(user\_id) ON DELETE RESTRICT,

CONSTRAINT chk\_cc\_type CHECK (cc\_type IN ('Visa','Mastercard','AMEX'))

)

ENGINE=InnoDB;

-- Table 10.

CREATE TABLE lineitem (

order\_id INT, -- Primary key is not null, Foreign key - orders.order\_id

line\_num SMALLINT UNSIGNED, -- Primary key is not null, unsigned = positive integer

item\_id INT NOT NULL, -- Foreign key - item.item\_id

quantity SMALLINT UNSIGNED NOT NULL DEFAULT 1, -- unsigned = positive integer

CONSTRAINT pk\_lineitem PRIMARY KEY (order\_id,line\_num),

CONSTRAINT fk\_lineitem\_order FOREIGN KEY (order\_id)

REFERENCES orders(order\_id) ON DELETE RESTRICT,

CONSTRAINT fk\_lineitem\_item FOREIGN KEY (item\_id)

REFERENCES item (item\_id) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 11.

CREATE TABLE orderstatus (

order\_id INT, -- not null = primary key, Foreign key orders.order\_id

line\_num INT, -- not null = primary key

-- timestamp TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP, -- update timestamp as order processes

-- timestamp TIMESTAMP ON UPDATE NOW(),

timestamp TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

status ENUM ('I','P','S','T') DEFAULT 'I',

CONSTRAINT pk\_orderstatus PRIMARY KEY (order\_id, line\_num),

CONSTRAINT fk\_orderstatus\_orders FOREIGN KEY (order\_id)

REFERENCES orders (order\_id) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 12.

CREATE TABLE xrefseriesgenre (

series VARCHAR(128), -- Primary key is not null, foreign key - series.series

genre VARCHAR(32), -- Primary key is not null, foreign key - genre.genre

CONSTRAINT pk\_xrefseriesgenre PRIMARY KEY (series, genre),

CONSTRAINT fk\_xref\_series FOREIGN KEY (series)

REFERENCES series (series) ON DELETE RESTRICT,

CONSTRAINT fk\_xref\_genre FOREIGN KEY (genre)

REFERENCES genre (genre) ON DELETE RESTRICT

)

ENGINE=InnoDB;

-- Table 13.

CREATE TABLE wishlist (

user\_id INT, -- Primary key, foreign key - account.user\_id

item\_id INT, -- Primary key, foreign key - item.item\_id

quantity SMALLINT UNSIGNED NOT NULL, -- Copied data type from quantity column of lineitem, inventory

CONSTRAINT pk\_wishlist PRIMARY KEY (user\_id, item\_id),

CONSTRAINT fk\_wishlist\_account FOREIGN KEY (user\_id)

REFERENCES account (user\_id) ON DELETE RESTRICT,

CONSTRAINT fk\_wishlist\_item FOREIGN KEY (item\_id)

REFERENCES item (item\_id) ON DELETE RESTRICT

)

ENGINE=InnoDB;

DESC account;

DESC category;

DESC genre;

DESC item;

DESC inventory;

DESC lineitem;

DESC orders;

DESC orderstatus;

DESC product;

DESC series;

DESC supplier;

DESC wishlist;

DESC xrefseriesgenre;