CS 260 - Database Systems

Lab 4

This lab will focus on DDL creation queries using both Oracle SQL Developer and MySQL Workbench. For each of the following you are to create two scripts, one for Oracle and one for MySQL.

Task 1: Sun-Ray Video

The following figure shows the table structure and sample data values for the Sun-Ray Video database:

Category

CategoryID	CategoryDesc
1	New Release
2	Action
3	Horror
4	Comedy
5	Children's

Format

FORMATID	FORMATDESC
1	VCR
2	DVD
3	Playstation
4	Nintendo 64
5	Sega

Customer

CUSTOMERID	LASTNAME	FIRSTNAME	ADDRESS	CITY	STATE	ZIP
1	Johnson	Edward	222 Main Street	Boston	MA	09222
2	Bailey	Bill	4233 Oxford	Cheyenne	WY	82001
3	Freeman	Mary	9822 Boston	Austin	TX	54772
4	Harrison	Susan	822 Water	Eau Claire	WI	54703
5	Clemons	Arlo	9833 Guthrie	Enid	OK	77355

Rentals

RENTALID	DATEOUT	DATEDUE	DATEIN	DELIVERYSTATUS	COST	LATEFEE	CUSTOMERID	VIDEOID
1	22-Sep-02	24-Sep-02	24-Sep-02	pickup	$2.00	$0.00	1	3
2	23-Sep-02	25-Sep-02		delivery	$3.00	$1.00	2	4
3	25-Sep-02	27-Sep-02	26-Sep-02	pickup	$2.00	$0.00	2	2
4	25-Sep-02	27-Feb-02	26-Sep-02	pickup	$2.00	$0.00	2	5
5	27-Sep-02	28-Sep-02		delivery	$1.00	$0.00	4	6

Videos

VIDEOID	TITLE	FORMATID	COST	CATEGORYID
2	The Matrix	1	$2.00	2
3	The Evil	1	$2.00	3
4	Super Mario	4	$1.00	5
5	Bride	1	$2.00	5
6	Men In Tights	2	$2.00	4

Steps:

1. Examine the tables, and identify all primary keys, foreign keys, and surrogate keys in the database.

2. Identify the order in which you must create the tables. Remember that you need to create all parent tables **before** you can create child tables that contain the parent table PK values as foreign keys!
3. Modify the table and field names as necessary to match the naming convention specified in the Powerpoints (i.e. Sun_Customer, etc.).
4. Identify the data types for each field based on the sample data and the rules for selecting data types presented in the Powerpoints.
5. Write the CREATE TABLE commands to create all of the tables.
    a. Specify appropriate data types and field widths. Use fixed-width character fields if appropriate. Don't store ZIP codes as numbers!
    b. Create appropriate constraint definitions to define all primary and foreign keys. Create AUTO_INCREMENT columns for all primary surrogate key fields.
    c. Create the tables in the correct order to specify foreign key relationships.
    d. Run your script to confirm that it works correctly.
    e. Add DROP TABLE .. IF EXISTS commands to the beginning of the script. Be sure to drop the tables in the reverse order that you create them!
    f. You do NOT need to populate the tables with the sample data.

Debugging tips:

- Be sure character fields are enclosed in single quotes.
- Remember that you can't create a table if it already exists! If you want to create the table a second time, drop it first.
- Remember that you can't create a foreign key constraint on a field unless that field is declared as the primary key in another table first.
- Remember that foreign key fields have to have the same data type and size as their corresponding primary keys.
- Do not use AUTO_INCREMENT to specify foreign key fields. You only use AUTO_INCREMENT for primary keys!

Task 2: Clearwater Traders

The following figure shows a series of database tables for Clearwater Traders, which is a company that markets clothing and sporting goods via mail order catalogs and its Web site.

CUSTOMER

C_ID	C_LAST	C_FIRST	C_MI	C_BIRTHDATE	C_ADDRESS	C_CITY	C_STATE	C_ZIP
Number	*String*	*String*	*String*	*Date/Time*	*String*	*String*	*String*	*String*
1	Harris	Paula	E	04/09/1953	1156 Water Street, Apt. #3	Osseo	WI	54705
2	Garcia	Maria	H	07/14/1958	2211 Pine Drive	Radisson	WI	54867
3	Miller	Lee		01/05/1936	699 Pluto St. NW	Silver Lake	WI	53821
4	Chang	Alissa	R	10/01/1976	987 Durham Rd.	Apple Valley	MN	55712
5	Edwards	Mitch	M	11/20/1986	4204 Garner Street	Washburn	WI	54891
6	Nelson	Kyle	E	12/04/1984	232 Echo Rd.	Minnetonka	MN	55438

CUSTOMER (continued)

C_DPHONE	C_EPHONE	C_USERID	C_PASSWORD
String	*String*	*String*	*String*
7155558943	7155559035	harrispe	asdfjk
7155558332	7155558332	garciamm	12345
7155554978	7155559002	miller	zxcvb
7155557651	7155550087	changar	qwerui
7155558243	7155556975	edwardsam	qwerty
7151113333	7155552222	nelsonke	clever

ORDER_SOURCE

OS_ID	OS_DESC
Number	*String*
1	Winter 2005
2	Spring 2006
3	Summer 2006
4	Outdoor 2006
5	Children's 2006
6	Web Site

INVENTORY

INV_ID	ITEM_ID	COLOR	INV_SIZE	INV_PRICE	INV_QOH
Number	*Number*	*String*	*String*	*Number*	*Number*
1	2	Sky Blue		259.99	16
2	2	Light Grey		259.99	12
3	3	Khaki	S	29.95	150
4	3	Khaki	M	29.95	147
5	3	Khaki	L	29.95	0
6	3	Navy	S	29.95	139
7	3	Navy	M	29.95	137
8	3	Navy	L	29.95	115
9	4	Eggplant	S	59.95	135
10	4	Eggplant	M	59.95	168
11	4	Eggplant	L	59.95	187
12	4	Royal	S	59.95	0
13	4	Royal	M	59.95	124
14	4	Royal	L	59.95	112
15	5	Turquoise	10	15.99	121
16	5	Turquoise	11	15.99	111
17	5	Turquoise	12	15.99	113
18	5	Turquoise	1	15.99	121
19	5	Bright Pink	10	15.99	148
20	5	Bright Pink	11	15.99	137
21	5	Bright Pink	12	15.99	134
22	5	Bright Pink	1	15.99	123
23	1	Spruce	S	199.95	114
24	1	Spruce	M	199.95	17
25	1	Spruce	L	209.95	0
26	1	Spruce	XL	209.95	12
27	6	Blue	S	15.95	50
28	6	Blue	M	15.95	100
29	6	Blue	L	15.95	100
30	7	White	S	19.99	100
31	7	White	M	19.99	100
32	7	White	L	19.99	100

ORDER_LINE

O_ID	INV_ID	OL_QUANTITY
Number	*Number*	*Number*
1	1	1
1	14	2
2	19	1
3	24	1
3	26	1
4	12	2
5	8	1
5	13	1
6	2	1
6	7	3

SHIPMENT

SHIP_ID	SHIP_DATE_EXPECTED
Number	Date/Time
1	09/15/2006
2	11/15/2006
3	06/25/2006
4	06/25/2006
5	08/15/2006

ORDER_SOURCE

OS_ID	OS_DESC
Number	*String*
1	Winter 2005
2	Spring 2006
3	Summer 2006
4	Outdoor 2006
5	Children's 2006
6	Web Site

ORDERS

O_ID	O_DATE	O_METHPMT	C_ID	OS_ID
Number	*Date/Time*	*String*	*Number*	*Number*
1	5/29/2006	CC	1	2
2	5/29/2006	CC	5	6
3	5/31/2006	CHECK	2	2
4	5/31/2006	CC	3	3
5	6/01/2006	CC	4	6
6	6/01/2006	CC	4	3

CATEGORY

CAT_ID	CAT_DESC
Number	*String*
1	Women's Clothing
2	Children's Clothing
3	Men's Clothing
4	OutdoorGear

ITEM

ITEM_ID	ITEM_DESC	CAT_ID	ITEM_IMAGE
String	*Number*	*Number*	*String*
1	Men's Expedition Parka	3	parka.jpg
2	3-Season Tent	4	tents.jpg
3	Women's Hiking Shorts	1	shorts.jpg
4	Women's Fleece Pullover	1	fleece.jpg
5	Children's Beachcomber Sandals	2	sandals.jpg
6	Boy's Surf Shorts	2	surfshorts.jpg
7	Girl's Soccer Tee	2	girlstee.jpg

SHIPMENT_LINE

SHIP_ID	INV_ID	SL_QUANTITY	SL_DATE_RECEIVED
Number	Number	Number	Date/Time
1	1	25	09/10/2006
1	2	25	09/10/2006
2	2	25	
3	5	200	
3	6	200	
3	7	200	
4	12	100	08/15/2006
4	13	100	08/25/2006
5	23	50	08/15/2006
5	24	100	08/15/2006
5	25	100	08/15/2006

COLOR

COLOR
String
Sky Blue
Light Grey
Khaki
Navy
Royal
Eggplant
Blue
Red
Spruce
Turquoise
Bright Pink
White

Steps:

1. Create a new database script named Clearwater.sql.
2. Create a script that drops all of the tables and then creates them.
    a. Select appropriate data types and field widths.
    b. Create appropriate constraint definitions to define all primary and foreign keys. Create AUTO_INCREMENT columns for all primary surrogate key fields.
    c. Create the tables in the correct order to specify foreign key relationships