RDBMS PRACTICE EXERCISES

EXERCISE 1:
Create a relational database model for a book information portal to track information about Authors, Publishers and Books.

EXERCISE 2:
Consider a database of social groups at allows people to become members of groups: a person can be a member of several groups and each group maintains a list of pictures that are accessible to all members. In addition to the groups, the database also maintains a list of friends. Develop a Schema for it.

BASIC SQL PRACTICE EXERCISES

Use the "Facility Services.accdb" (mailed to you separately) for these practice exercises. This database has the following 7 tables:

- CustomerMaster
- LocationMaster
- PriceMaster
- ProductMaster
- TransactionMaster
- Employee_Master
- Test Comments

EXERCISE 1: COMPARISON OPERATOR QUERIES

1. From the TransactionMaster table, select a list of all items purchased for Customer_Number 296053. Display the Customer_Number, Product_Number, and Sales_Amount for this customer.
2. Select all columns from the LocationMaster table for transactions made in the Region = NORTH.

3. Select the distinct products in the TransactionMaster table. In other words, display a listing of each of the unique products from the TransactionMaster table.
4. List all the Customers without duplication.

EXERCISE 2: AGGREGATE FUCNTION QUERIES

1. Find the average Sales Amount for Product Number 30300 in Sales Period P03.
2. Find the maximum Sales Amount amongst all the transactions.
3. Count the total number of transactions for each Product Number and display in descending order
4. List the total number of transactions in Sales Period P02 and P03
5. What is the total number of rows in the TransactionMaster table?
6. Look into the PriceMaster table to find the price of the cheapest product that was ordered.

EXERCISE 3: LIKE FUNCTION QUERIES

1. Select all Employees where Employee-Status = "A"
2. Select all Employees where Job Description is "TEAMLEAD 1".
3. List the Last name, Employee Status and Job Title of all employees whose names contain the letter "o" as the second letter.
4. List the Last name, Employee Status and Job Title of all employees whose First names start with the letter "A" and does not contain the letter "i".
5. List the First name and Last names of employees with Employee Status "I" whose Job Code is not SR2 and SR3.
6. Find out details of employees whose last name ends with "N" and first name begins with "A" or "D".
7. Find the list of products with the word "Maintenance" in their product description.

EXERCISE 4: DATE FUNCTION QUERIES

1. List the employees who were hired before 01/01/2000 (hint: use # for date values).
2. Find the total number years of employment for all the employees who have retired.
3. List the transactions, which were performed on Wednesday or Saturdays.
4. Find the list of employees who are still working at the present.

EXERCISE 5: GROUP BY CLAUSE QUERIES

1. List the number of Customers from each City and State.
2. For each Sales Period find the average Sales Amount.
3. Find the total number of customers in each Market.
4. List the number of customers and the average Sales Amount in each Region.
5. From the TransactionMaster table, select the Product number, maximum price, and minimum price for each specific item in the table. Hint: The products will need to be broken up into separate groups.

EXERCISE 6: ORDER BY CLAUSE QUERIES

1. Select the Name of customer companies, city, and state for all customers in the CustomerMaster table. Display the results in Ascending Order based on the Customer Name (company name).
2. Same thing as question #1, but display the results in descending order.
3. Select the product number and sales amount for all of the items in the TransactionMaster table that the sales amount is greater than 100.00. Display the results in descending order based on the price.

EXERCISE 7: HAVING CLAUSE QUERIES

1. How many branches are in each unique region in the LocationMaster table that has more than one branch in the region? Select the region and display the number of branches are in each if it's greater than 1.
2. From the TransactionMaster table, select the item, maximum sales amount, and minimum sales amount for each product number in the table. Only display the results if the maximum price for one of the items is greater than 390.00.
3. How many orders did each customer company make? Use the TransactionMaster table. Select the Customer_Number, count the number of orders they made, and the sum of their orders if they purchased more than 1 item.

EXERCISE 8: IN AND BETWEEN FUNCTION QUERIES

1. List all the employees who have worked between 22 March 2004 and 21 April 2004.
2. List the names of Employees whose Job Code is in SR1,SR2 or SR3.
3. Select the Invoice date, Product number and Branch number of all transactions, which have Sales amount ranging from 150.00 to 200.00.
4. Select the Branch Number, Market and Region from the LocationMaster table for all of the rows where the Market value is either: Dallas, Denver, Tulsa, or Canada.

EXERCISE 9: UNION AND INTERSECTION QUERIES

EXERCISE 10: TABLE JOINS

1. Write a query using a join to determine which products were ordered by each of the customers in the CustomerMaster table. Select the Customer_Number, FirstOfCustomer_Name, FirstOfCity, Product_Number, Invoice_Number, Invoice_date, and Sales_Amount for everything each customer purchased in the TransactionsMaster table.
2. Repeat question #1, however display the results sorted by City in descending order.