ASSIGNMENT – 5 EXTERNAL DOCUMENT

Overview

In assignment 5 there are two problems. In problem 1, I was given five queries and have to generate output accordingly. In problem 2, there was a scenario in which I work for Mini-Me Toy Car company and the management wanted periodical summary of the company's operation over a period. My job was to extract all the data from the database and store the summary information in a file that follows XML format.

Problem 1:

a) In this query I have used sub query. The sub query will execute first and inside it, it will select the city from employees table where the job title is Sales Rep and the table is inner joined with offices table. And the main query will show the customer name from customers table which is inner joined with employees where the city is not in the sub query part.
b) It will show the distinct order number from orderdetails table which is inner joined with products where priceEach is less than MSRP.
c) It will show the top 5 product name and will find the highest average mark-up percentage per order from orderdetails which is inner joined with products and orders where the orderDate is 2004 and the output is grouped by product name and is ordered by descending order with respect to the average calculated. In this query I have used Limit 5 because I have to only display 5 records and I have used year() function to extract only the year from orderDate.
d)
e) In this query I have used a sub query which will inner join four tables which are orders, orderdetails, customers and employees. Then the outer query will show office code and will calculate the average by finding the difference between shipped date and order date. To find difference I have used the datediff() function and avg () to find the average.

Problem 2:

Class in my program:

MMTCarCompany: This is the class which contains main method and it takes input from the keyboard i.e. the start date, end date and the file name.

Approach to solve the problem:

To solve this problem, I have first created SQL query for all three table i.e. for customers, products and employees information. Further, I created java code that includes the SQL queries and will store all the information in the resultset. After storing the data into resultsets I wrote code to display the information in XML format inside the file.

How I implemented:

1). First, for good user interface I created menu driven program and for that I have used a while loop which execute till it is true.

2). Further, I have enclosed whole program in **try catch** block so that all the exceptions can be caught and handled.

3). Next, I have used **switch case** so that user can get chance to select 1 or 2. If the user selects 1 then they have to enter start date, end date and file name. And for 2 for exit.

4). Further, if the user selects option 1 then firstly, the **forName()** function will register the driver class.

5). Next, the **getConnection()** function establish the connection with the database.

6). Once the connection is created then I used **createStatement()** function which will create the statement that will allow us to write SQL query.

7). Next, I have taken the input for date in string format and then using **Date** class and **valueOf()** function I converted string into SQL date.

8). To write the summary information into file I have used **BufferedWriter** class.

9). Further, all the SQL query is written in a string variable and is passed into the **executeQuery()** function and stored to the **ResultSet**.

10). Next, I created three SQL variables of string type where I wrote SQL query in which using sub query the first query will get all the information of customer. Further, the remaining two queries will fetch the information of products and employee.

11). Lastly, using **write()** function I printed all the retrieved information from database to XML file. For spacing I used \t.

Handling Exceptions:

All the exceptions are handled using try catch block

1) If the user enters null as a filename, invalid filename, puts null path then it will be handled using try catch block.
2) If the user enters null date, empty date or date in / format (1996/12/12) instead of – format (1996-12-12).

Why my solution is ready to deploy?

The data is retrieved from the database and is ready to get written into the XML file in XML format. That's why my solution is ready to deploy. Further, my code writes the summary in XML format in proper XML file format and in human readability form with proper spacing.

XML files are widely used because the tags are not fixed meaning new tags can be created as we need. Further XML format can contain any possible data types. Also, it is very light weighted file. Lastly, information in XML file is easy to read, understand and easily processed by computers.