CSCI 3901 ASSIGNMENT 5 – 2 – EXTERNAL DOCUMENTATION

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Date: 2021-12-02

Problem 2:

Overview:

A simple overview of the problem statement is to create a java solution to create an XML document in the specified file path with the data fetched from a database using JDBC. The data to be fetched is the manager's information and product line's information from the sales database.

Files and External Data:

There are two files submitted related to problem 2:

1. Main.java: This is the main of the program to allow user interactions like getting start date and end date from the keyboard.
2. mySQLCredentials: This class store the credentials of the database to be connected. Please change the username and password in this class according to the need.
3. CreateXMLFile.java: This class generates the XML file from the data taken from the database mentioned. Please change the database in this class according to the need. (I referred to a website to learn XML generation and please find the references to those websites below.)

Data Structures and their relations:

The program doesn't use any data structure to store data. It uses document elements to append. This program works in the hierarchy of parent & child elements. It uses java.sql library to create statements and it uses resultSet from java.sql library to store results from executeQuery.

1) mySQLQuery() – This is the main method to take the arguments from the driver class and run the rest of the program. This method is responsible for

appending child elements and iterating through each manager, product line and customers

2) isValidateDate() – This method is responsible for validating the given start date and end date. (Note: I took reference from other websites to validate dates in Java and I referenced them below)
3) yearEndReportMethod() – This method will
4) manager() – This method will be run in a loop. This method will append all the managers from the resultSet taken from the query given
5) product() – This method will be run in a loop to generate product line information from the query given.
6) customer() – This method will be run inside the product line loop in a loop to generate customers' information.

Algorithms:

This program doesn't have any notable algorithms. It fetches data from the database and writes it to an XML file according to the style mentioned in the problem statement. It will take the start year and end year and file path and fetches all the managers who interact in the given date range and also product lines the customers had interactions with and also the customers had interactions in the specified format. Finally, this will be documented into the XML path specified.

Assumptions:

All the assumptions from the PDF were considered.

Limitations:

Network Latency can delay XML generation

References:

[1]"SQL/XML in JDBC Applications", *Ils.unc.edu*, 2021. [Online]. Available: https://ils.unc.edu/courses/2014_fall/inls623_001/XML-DB-docs/XML-SQL.htm. [Accessed: 07- Dec- 2021].

[2]"XML Tutorial", *W3schools.com*, 2021. [Online]. Available: https://www.w3schools.com/xml/. [Accessed: 07- Dec- 2021].

[3]"Java DOM Parser - Create XML Document", *Tutorialspoint.com*, 2021. [Online]. Available: https://www.tutorialspoint.com/java_xml/java_dom_create_document.htm. [Accessed: 07- Dec- 2021].

[4]"Entity-Relationship Diagram Symbols and Notation", *Lucidchart*, 2021. [Online]. Available: https://www.lucidchart.com/pages/ER-diagram-symbols-and-meaning. [Accessed: 07- Dec- 2021].

[5]"How to check if date is valid in Java - Mkyong.com", *Mkyong.com*, 2021. [Online]. Available: https://mkyong.com/java/how-to-check-if-date-is-valid-in-java/. [Accessed: 07- Dec- 2021].

[6]"SQL Tutorial", *W3schools.com*, 2021. [Online]. Available: https://www.w3schools.com/sql/. [Accessed: 07- Dec- 2021].