Overview

This program extracts information from a bicycle store database system and summarizes the information in an XML file.

Files and External Data

DatabaseTester.java: Contains the main method, this is where the code is executed from. It is also used to establish connection to the database.

BicycleStore.java: Generates the xml document

CustomerInformation.java: Extracts customer information from the database

ProductInformation.java: Extracts product information from the database

StoreInformation.java: Extracts store information from the database

databaseTester.prop: Contains username and password for the database

Assumptions

The requirements were specific enough that no additional assumptions needed to be made, other than the ones given in the assignment.

Choices

I chose to use xml parser and DOM approach to create the xml file to ensure it is extendable and maintainable in the future.

Key Algorighm and Design Elements

- Prompt user for input: start date, end date, and output file name.
- Establish a connection to the database.
- Fetch customer information
- Fetch product information
- Fetch store information
- Generate the XML output:
    - Create the XML structure using the extracted data.
    - Format the XML output
- Save the XML output to the specified file

Resources used

I used the following websites to learn about xml library provided by w3c:

https://www.w3schools.com/xml/xml_parser.asp

https://www.tutorialspoint.com/java_xml/java_dom_parse_document.htm

https://docs.oracle.com/javase/7/docs/api/org/w3c/dom/package-summary.html

https://howtodoinjava.com/java/xml/read-xml-dom-parser-example/

I used the following resources to learn about date format in java for input validation:

https://docs.oracle.com/javase/7/docs/api/java/text/SimpleDateFormat.html

https://www.javatpoint.com/java-simpledateformat

Why I believe this program is ready for deployment:

1. I have ensured the code of this program maintains loose coupling and high cohesion.
2. Each class has a single responsibility. CustomerInformation, StoreInformation and ProductInformation classes are only responsible for summarizing information related to them. The BicycleStore class is only responsible for generating xml file.
3. I have tested the code thoroughly and wrote input validations to ensure the robustness of the program.
4. I used the classes provided by org.w3c.dom and xml library to make the code extendable and maintainable in the future.
5. I wrote internal comments and created an external document to ensure it is understandable, maintainable and extendable in the future.
6. The generated xml output is human understandable, making it easier for anyone to gather and understand the summary information.
7. The program takes input from the user for a period, making the program flexible.