



DALHOUSIE
UNIVERSITY

Software Development Concepts

Assignment 5

Submitted by –

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Overview –

This program fetched the data from “alen” database using various stored procedures and transfers it to the java program using the JDBC connection and through a Data transfer object. The data is then visualized using an XML document which requires some input from the user.

Files and external data –

1. Main.java: Contains the main method and takes input from start of period, end of period and name of XML file from user.
2. OfficeList.java: Contains query which gets the Office information. The data calculated here is stored in the OfficeListDTO.
3. ProductList.java: Contains query which gets the product information. The data calculated here is stored in the ProductListDTO.
4. CustomerData.java: Contains query which gets the customer information. The data calculated here is stored in the CustomerInformationDTO.
5. CustomerInformationDTO.java: Stores customer information calculated in the query.
6. OfficeListDTO.java: Stores office information calculated in the query.
7. ProductListDTO.java: Stores product information calculated in the query.
8. XMLBuilder.java: Builds an XML file by taking data from DTO. Uses document builder library in java.

Stored Procedure -

All the queries have been attached to the src file

1. For CustomerList -

GET_CUSTOMER_LIST

GET_CUSTOMER_ORDER_VALUE_FOR_TIME

GET_CUSTOMER_OUTSTANDING_BALANCE

2. For ProductList-

GET_PRODUCT_NAMES

GET_PRODUCT_LIST

3. For OfficeList-

GET_OFFICE_LIST_NAMES

GET_OFFICE_LIST_CITES_CUSTOMERS

Implementation -

In the main class the user provides input dates for start of period and end of period, which is stored to be used to compute values in the database. The user also gives the filename for the XML document. There are three classes: officelist, productlist and customerdata where the sql queries are being run. The data from these queries are stored in respective DTO's (data transfer object). There is another class called XMLbuilder.java which takes list input from these DTO's and creates XML files respectively.

General data flow -

1. Data fetched from database through stored procedures.
2. The data fetched is stored in a data transfer object which I have created to store information on each customer, product and city.
3. The DTO is then used to create the XML document.
4. The XML document is created using the Document Builder library in java.
5. User provides the name of the XML document.
6. The document is created which has all the information provided.

Architecture -

1. Three DTO (Data transfer object) files have been created to capture the data from the Database.
2. This file casts each data in the required format.
3. This is then used to generate the XML

```
package DTOs;

public class OfficeListDTO {
    public String customerSalesValue;
    public String territory;
    public String city;
    public String customerName;
    public String employeeCount;

    public OfficeListDTO(String customerSalesValue, String territory, String city, String customerName, String employeeCount) {
        this.customerSalesValue = customerSalesValue;
        this.territory = territory;
        this.city = city;
        this.customerName = customerName;
        this.employeeCount = employeeCount;
    }
}
```

Figure - DTO

Limitations

- The SQL fetch time can be improved.
- Edge case handling could have been added.