COEN-6312-2184-UU

Model Driven Software Engineering

Professor: Wahab Hamou-Lhadj, Ph.D., ing.

Deliverable 5

Submitted By:

NAME	ID	EMAIL
Ashish Sharma	40050452	ashish.sharma5293@gmail.com
Harmanpreet Singh	40059358	harmansandhu63@gmail.com
Navjot Kaur Bhamrah	40050459	navjotkaurbhamrah@gmail.com
Amandeep	40046716	amandpsingh03@gmail.com
Raghav Sharda	40053703	raghavsharma2926@outlook.com
Shivya Pant	40068007	shivyapant@gmail.com

1. Software Requirements:

- **Eclipse:** Eclipse is famous for Java Integrated Development Environment (IDE). You can easily combine language support and other features into any of our default packages, and the Eclipse Marketplace allows for virtually unlimited customization and extension.

- **Java:** Java is a general-purpose computer-programming language that is concurrent, class-based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

- **Oracle:** An Oracle database is a collection of data treated as a unit. The purpose of a database is to store and retrieve related information. A database server is the key to solving the problems of information management.

- **Papyrus:** Papyrus is an open-source UML 2 tool based on Eclipse and licensed under the EPL. It has been developed by the Laboratory of Model Driven Engineering for Embedded Systems which is a part of the French Alternative Energies and Atomic Energy Commission.

- **ODBC:** The ODBC driver uses the Open Database Connectivity (ODBC) interface by Microsoft that allows applications to access data in database management systems (DBMS) using SQL as a standard for accessing the data. ODBC permits maximum interoperability, which means a single application can access different DBMS.

  The ODBC driver interface defines:

  - A library of ODBC function calls of two types:
    - Core functions that are based on the X/Open and SQL Access Group
    - Call Level Interface specification
    - Extended functions that support additional functionality, including scrollable cursors.
  - SQL syntax based on the X/Open and SQL Access Group SQL CAE specification (1992)
  - A standard set of error codes
  - A standard way to connect and login to a DBMS
  - A standard representation for data types

2. Papyrus Tool Usage:

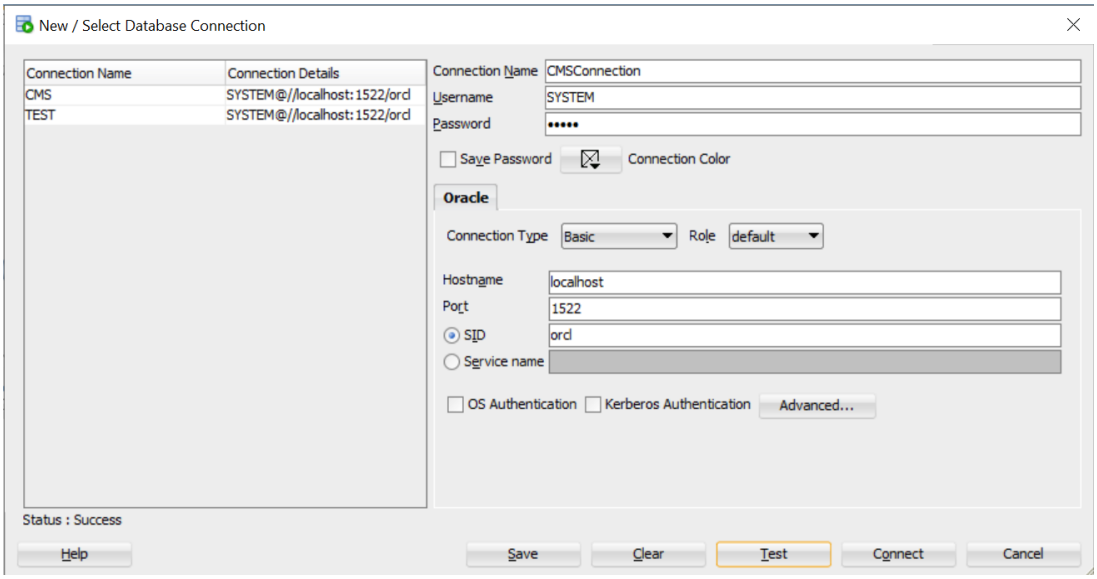
2.1 Using Papyrus Eclipse Plugin, we created a model and a UML class diagram. Then we used this UML class diagram to generate classes automatically which we later modified to add functionalities.

3. Steps to run the Clinic Management System (CMS):

3.1 Install and configure oracle database.
https://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html

3.2 Download and add JDBC Jar file to the CMS project library.
https://www.oracle.com/database/technologies/appdev/jdbc.html

3.3 Create a new connection in Oracle database where the username is 'SYSTEM' and password is 'admin'.

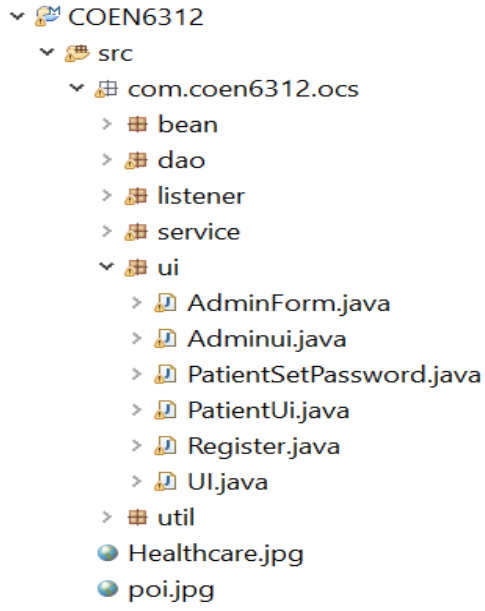


3.4 Create the required tables for the CMS in the Oracle database. Please refer to the **CMS.sql** for the commands to create various tables. After running these commands below tables will be generated.

3.5 Set the DSN (Data Source Name), username and password required to connect to the Oracle database. This is done in the ***getConnection()*** method of class ***DBUtil*** in ***com.coen6312.ocs.util*** package.

```
public static  Connection getConnection() throws ClassNotFoundException, SQLException{
    Connection connection;
    Class.forName("oracle.jdbc.driver.OracleDriver");
    connection=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1522:orcl","SYSTEM","admin");
    return connection;
}
```

3.6 Run UI.java class as Java application in the package com.coen6312.ocs.ui



4. Appendix: Attached Files

4.1 COEN6312CMS.zip: This zip file contains code which can be imported in Eclipse IDE.
The code can also be downloaded from the below github link:
https://github.com/nbhamrah/COEN-6312-Team-Raptors/tree/master/COEN6312

4.2 CMS Class Diagram.pdf: This PDF contains the class diagram.

4.3 CMS.sql: This SQL file contains all the essential SQL commands which creates the tables required for the project.

References

1. https://wiki.eclipse.org/Papyrus.
2. https://en.wikipedia.org/wiki/Integrated_development_environment.
3. Java-based approaches for accessing databases on the Internet and a JDBC-ODBC implementation.