Department of Artificial Intelligence and Multimedia Gaming

CS-207 Database Systems (BS-AI & MMG)

LAB # 01

Lab Manual: Overview of Oracle SQL Live, Oracle APEX and MySQL
Objective
To provide an understanding of Oracle Application Express (APEX), including workspace creation, application development, and navigation of the APEX environment. Additionally, this lab highlights that Oracle Database SQL, Oracle APEX, and MySQL Workbench can be run both on-premises and online.

Introduction to Oracle SQL Live
1. Oracle SQL Live allows users to practice and execute SQL commands directly in a browser without requiring an on-premises installation.
2. Features:
   - o Interactive SQL environment.
   - o Predefined schemas and datasets for practice.
   - o Accessible at https://livesql.oracle.com/.
3. Steps:
   - o Log in or sign up on the Oracle Live SQL platform.
   - o Explore tutorials, examples, and challenges available on the platform.
   - o Execute SQL commands in the provided workspace.

Using Oracle APEX On-Premises and Online
1. **On-Premises**:
   - o Install Oracle Database and APEX locally on your server or machine.
   - o Access APEX through the URL configured during installation (e.g., http://localhost:8080/apex).
2. **Online**:
   - o Use the cloud-hosted version of Oracle APEX available at https://apex.oracle.com/.
   - o No local installation required, and it offers easy access from anywhere with an internet connection.

Lab Steps
Step 1: Accessing Oracle APEX
1. Open a web browser.
2. Navigate to the Oracle APEX login page.
   - o For online usage: Visit https://apex.oracle.com/.
   - o For on-premises usage: Use the local URL provided by your database administrator.
3. Log in using the provided workspace credentials (Workspace, Username, Password).
Step 2: Understanding the Oracle APEX Interface
1. Familiarize yourself with the following sections on the dashboard:
   - o **App Builder**: For creating and managing applications.
   - o **SQL Workshop**: For executing SQL queries.

- o **Team Development**: For managing team projects and tasks.
- o **Administration**: For workspace settings.
2. Explore each section briefly to understand its purpose.

Step 3: Creating a Workspace (Optional, if not already created)
1. Go to the administration section and select **Manage Workspaces**.
2. Click on **Create Workspace**.
3. Provide the following details:
   - o **Workspace Name**: Name for the workspace (e.g., MyWorkspace).
   - o **Schema**: Select an existing schema or create a new one.
   - o **Storage**: Set storage limits if necessary.
4. Click **Next**, review details, and confirm the workspace creation.

Step 4: Creating a New Application
1. Navigate to the **App Builder** section.
2. Click on **Create**.
3. Select **New Application**.
4. Provide the following details:
   - o **Application Name**: Enter a name (e.g., Employee Management App).
   - o **Application ID**: Leave the default or set a custom ID.
5. Click **Next** and configure:
   - o **Pages**: Add new pages (e.g., Home, Reports, Forms).
   - o **Navigation Menu**: Choose menu types.
   - o **Authentication**: Set user authentication (default is fine for now).
6. Review the details and click **Create Application**.

Step 5: Running the Application
1. In the **App Builder**, locate your application.
2. Click on the **Run** button.
3. Enter the workspace credentials if prompted.
4. Explore the application and verify functionality.

Step 6: Modifying the Application
1. Open the created application in the **App Builder**.
2. Add or edit pages by clicking on the **Edit Page** button.
3. Modify components such as:
   - o **Regions**: Add or remove data regions.
   - o **Items**: Add form fields.
   - o **Buttons**: Configure buttons for actions (e.g., Save, Submit).
4. Save changes and re-run the application to view updates.

Step 7: Exploring SQL Workshop
1. Navigate to the **SQL Workshop** section.
2. Use the **SQL Commands** to write and execute SQL queries.
   - o Example: SELECT * FROM employees;
3. Save scripts for reuse in your application.

Step 8: Creating an Interactive Report
1. In your application, create a new page.
2. Select **Report** as the page type.
3. Choose **Interactive Report**.
4. Define the source table or SQL query.
5. Customize report settings (e.g., filters, column headings).

6. Save and preview the report.

Introduction to MySQL Workbench

1. MySQL is an open-source relational database management system.
2. It can be used both on-premises and via cloud-hosted services (e.g., AWS RDS, Google Cloud SQL).
3. Features:
   o Supports SQL for data manipulation.
   o Widely used in web applications and data analysis.
   o Compatible with various programming languages.
4. Usage:
   o Install MySQL Server locally or access it via cloud services.
   o Use MySQL Workbench or command-line tools for managing databases.
   o Develop applications with MySQL as the backend database.

   Note: It requires xampp/wampp server if server not installed.

Conclusion

After completing this lab, you should understand the basics of Oracle APEX, Oracle SQL Live, and MySQL, including navigating their interfaces, creating workspaces or databases, and executing SQL queries. You will also appreciate the flexibility of running these systems both on-premises and online.

Links:
1. Video: [How to Install MySQL Workbench](#)
2. Video: [How to Install Oracle Database & Oracle APEX](#)
   a. [Download Oracle Database](#)
   b. [Download Oracle APEX](#)
3. Video: [Oracle APEX in Virtual Machine](#)
   a. [Download VirtualBox Software](#)
   b. [Download readymade Virtual Machine of Oracle APEX](#)

Lab Submission

1. Submit a screenshots of all the steps performed while creating application or executing SQL commands.
2. Provide a brief write-up on your experience navigating Oracle APEX, Oracle SQL Live, or MySQL.