

# Lab 07 – Database Application Development

## Objective:

In this lab students learn:

- How to connect to an Oracle server from a C++ program.
- How to write and execute SQL queries in a C++ program.

## Individual Submission:

*Your submission will be a single text-based .cpp file including your C++ program for the Database Application lab.*

L07\_ID\_LASTNAME.cpp

Your submission needs to have your username and password in the .cpp file. **If any other username is used or left empty, will be marked '0'.**

## Lab Requirements and Submission:

In this lab, you need to write a C++ program to execute the following queries and display the result returned by each query. For the output format, see the sample output.

1. Display Employee Number, First Name, Last Name, Phone Number, and Extension of all Employees who work in San Francisco. See the following Sample output. (Sort the report according to the employee number)
2. Display Employee Number, Last Name, Phone Number, and Extension for all managers. (You can use column reportsto to find the managers' employee number)

**Your program will output only the following reports.**

**Remove any outputs (messages) from your program that you have used for testing you code such as printing "The connection is successful".**

----- Report 1 (Employee Report) -----				
Employee ID	First Name	Last Name	Phone	Extension
1002	Diane	Murphy	+1 650 219 4782	x5800
1056	Mary	Patterson	+1 650 219 4782	x4611
1076	Jeff	Firrelli	+1 650 219 4782	x9273
1143	Anthony	Bow	+1 650 219 4782	x5428
1165	Leslie	Jennings	+1 650 219 4782	x3291
1166	Leslie	Thompson	+1 650 219 4782	x4065

  

----- Report 2 (Manager Report) -----				
Employee ID	First Name	Last Name	Phone	Extension
1002	Diane	Murphy	+1 650 219 4782	x5800
1056	Mary	Patterson	+1 650 219 4782	x4611
1088	William	Patterson	+61 2 9264 2451	x4871
1102	Gerard	Bondur	+33 14 723 4404	x5408
1143	Anthony	Bow	+1 650 219 4782	x5428
1621	Mami	Nishi	+81 33 224 5000	x101

### C++ sample code to execute a query(this is not your submission code)

```

cout << "Connection is Successful!" << endl;
Statement* stmt = conn->createStatement();
string employeeenum;
cout << "Enter Employee Number: ";
cin >> employeeenum;
ResultSet* rsss = stmt->executeQuery("SELECT employeeenum, lastname, firstname, extension, email,
officecode, reportsto, jobtitle FROM retailemployees WHERE employeeenum=" + employeeenum);
cout << "The employee is : " << endl;
cout << "# Employee Number      Last Name      First Name      Extension      Email
      Office Code      Reports To      Job Title" << endl;
while (rsss->next()) {
    int employeeenum = rsss->getInt(1);
    string lastname = rsss->getString(2);
    string firstname = rsss->getString(3);
    string extension = rsss->getString(4);
    string email = rsss->getString(5);
    int officecode = rsss->getInt(6);
    string reportsto = rsss->getString(7);
    string jobtitle = rsss->getString(8);
    // cout << count << " ";
    cout.width(20); cout << left << employeeenum << " ";
    cout.width(15); cout << left << lastname << " ";
    cout.width(15); cout << firstname << " ";
    cout.width(15); cout << extension << " ";
    cout.width(30); cout << email << " ";
    cout.width(15); cout << officecode << " ";
    cout.width(15); cout << reportsto << " ";
    cout.width(15); cout << jobtitle << endl;
}
conn->terminateStatement(stmt);

```