Experiment 19

1.) i) PreparedStatements objects are used to execute repititive SQL Statements.

ii) Compared to statement object execution, Prepared Statement object creation is faster. The reason is the object is precompiled, by eliminating the compilation task by DBMS.

iii) The PreparedStatement object can be used by just replacing the parameters.

2.) i) public boolean next()
Used to move the cursor to the one row next from the current position.

ii) public boolean previous()
Used to move the cursor to the row previous from the current position.

iii) public boolean first()
Used to move the cursor to the first row in ResultSet object.

iv) public boolean last()
Used to move the cursor to the last row in ResultSet object.

v) public int getInt(int index) or public int getInt(~~int~~ String column):
Used to return the data of the specified index or column name.

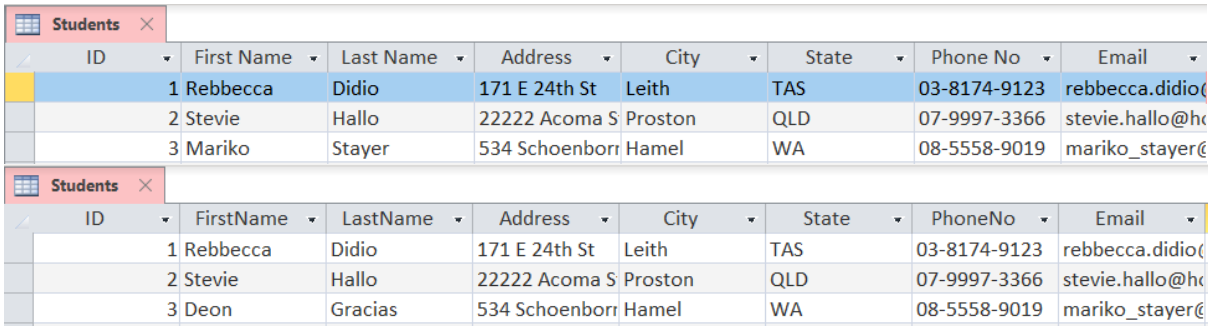
vi) public String getString(int index)
or public String getString(String column_name)

Used to return the data of specified column index or column name

3) i) Since a PreparedStatements object represents only one SQL statement at a time, we can execute only one statement by one prepared statement object

ii) To prevent injection attacks it does not allow more than one value to a place holder.

```
import java.sql.*;

class Exp19a {
   public String database = "C:\\Users\\deong\\College\\Java\\Manual-
Programs\\Experiment19\\MSBTE.accdb";

   private Connection conn;

   // Create Connection
   public void createConnection() {
      try {
         conn = DriverManager.getConnection("jdbc:ucanaccess://" + database);
      } catch (SQLException e) {
         System.out.println("Connection Failed");
         System.exit(1);
      }
   }

   public void closeConnection() {
      try {
         conn.close();
      } catch (SQLException e) {
         System.out.println("Close Connection Failed ?");
      }
   }

   public void updateQuery(String query) {
      try {
         Statement statement = conn.createStatement();
         statement.executeUpdate(query);
      } catch (SQLException e) {
         System.out.println("Error in updateQuery()");
      }
   }

   public static void main(String[] args) {
      Exp19a dbconn = new Exp19a();
      try {
         Class.forName("net.ucanaccess.jdbc.UcanaccessDriver");
      } catch (Exception e) {
         System.out.println("Error in Loading Driver");
      }
      dbconn.createConnection();
      dbconn.updateQuery("UPDATE Students SET FirstName = 'Deon' , LastName = 'Gracias' WHERE
ID = 3;");
   }
}
```



Students

ID	First Name	Last Name	Address	City	State	Phone No	Email
1	Rebbecca	Didio	171 E 24th St	Leith	TAS	03-8174-9123	rebbecca.didio(
2	Stevie	Hallo	22222 Acoma S	Proston	QLD	07-9997-3366	stevie.hallo@h(
3	Mariko	Stayer	534 Schoenborı	Hamel	WA	08-5558-9019	mariko_stayer@

Students

ID	FirstName	LastName	Address	City	State	PhoneNo	Email
1	Rebbecca	Didio	171 E 24th St	Leith	TAS	03-8174-9123	rebbecca.didio(
2	Stevie	Hallo	22222 Acoma S	Proston	QLD	07-9997-3366	stevie.hallo@h(
3	Deon	Gracias	534 Schoenborı	Hamel	WA	08-5558-9019	mariko_stayer@

```
import java.sql.*;

class Exp19b {
   public String database = "C:\\Users\\deong\\College\\Java\\Manual-
Programs\\Experiment19\\SampleDatabase.accdb";

   private Connection conn;

   // Create Connection
   public void createConnection() {
      try {
         conn = DriverManager.getConnection("jdbc:ucanaccess://" + database);
      } catch (SQLException e) {
         System.out.println("Connection Failed");
         System.exit(1);
      }
   }

   public void closeConnection() {
      try {
         conn.close();
      } catch (SQLException e) {
         System.out.println("Close Connection Failed ?");
      }
   }

   public void updateQuery(int id, String firstName, String lastName) {
      try {
         PreparedStatement stmt = conn.prepareStatement("insert into student values(?,?,?)");
         stmt.setInt(1, id);
         stmt.setString(2, firstName);
         stmt.setString(3, lastName);
         int i = stmt.executeUpdate();
         System.out.println(i + " records inserted");
      } catch (SQLException e) {
         System.out.println("Error in updateQuery()");
      }
   }

   public static void main(String[] args) {
      Exp19b dbconn = new Exp19b();
```

```
        try {
            Class.forName("net.ucanaccess.jdbc.UcanaccessDriver");
        } catch (Exception e) {
            System.out.println("Error in Loading Driver");
        }
        dbconn.createConnection();
        dbconn.updateQuery(101, "Abhishek", "Yadav");
    }
}
```

```
1 records inserted
```

Student

id	firstname	lastname
1	Deon	Gracias
101	Abhishek	Yadav

```
import java.sql.*;

public class Exp19c {
    public String database = "C:\\Users\\deong\\College\\Java\\Manual-
Programs\\Experiment19\\MSBTE.accdb";

    private Connection conn;

    // Create Connection
    public void createConnection() {
        try {
            conn = DriverManager.getConnection("jdbc:ucanaccess://" + database);
        } catch (SQLException e) {
            System.out.println("Connection Failed");
            System.exit(1);
        }
    }

    public void closeConnection() {
        try {
            conn.close();
        } catch (SQLException e) {
            System.out.println("Close Connection Failed ?");
        }
    }

    public void selectQuery() {
        try {
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT ID, first_name, last_name FROM Student;");
            System.out.println("-----------------------------------");
            System.out.printf("%5s | %13s | %13s\n", "ID", "FirstName", "LastName");
            System.out.println("-----------------------------------");
            while (rs.next()) {
```

```
            System.out.printf("%5s | %13s |%13s\n", Integer.toString(rs.getInt("ID")),
rs.getString("first_name"),
                    rs.getString("last_name"));

          }
        } catch (SQLException e) {
          e.printStackTrace();
          System.out.println("Error in selectQuery()");
        }
    }

    public static void main(String[] args) {
        Exp19c dbconn = new Exp19c();
        try {
          Class.forName("net.ucanaccess.jdbc.UcanaccessDriver");
        } catch (Exception e) {
          System.out.println("Error in Loading Driver");
        }
        dbconn.createConnection();
        dbconn.selectQuery();
    }
}
```

ID	FirstName	LastName
1	Rebbecca	Didio
2	Stevie	Hallo
3	Deon	Gracias
4	Gerardo	Woodka
5	Mayra	Bena
6	Idella	Scotland
7	Sherill	Klar
8	Ena	Desjardiws
9	Vince	Siena
10	Theron	Jarding