LAPORAN PRAKTIKUM
PRAKTIKUM 9:
"PERSISTENT OBJEK"

Disusun Oleh :

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PRAKTIKUM PEMROGRAMAN BERORIENTASI OBJEK
LAB B

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SEMARANG
2023

A. Menggunakan Persistent Object sebagai model basis data relasional

1. Interface PersonDAO.java

```
/**
* Nama               : Eva Sitompul
* NIM                : 24060119120035
* Lab                : B2
* Nama File          : PersonDAO.java
* Tanggal Pembuatan  : 31/05/2023
* Deskripsi          : interface untuk person access object
*/

public interface PersonDAO{
    public void savePerson(Person p) throws Exception;
}
```

2. Kelas Person.java

```
/**
* Nama               : Eva Sitompul
* NIM                : 24060119120035
* Lab                : B2
* Nama File          : Person.java
* Tanggal Pembuatan  : 31/05/2023
* Deskripsi          : Person database model
*/

public class Person{
    private int id;
    private String name;

    public Person(String n){
        name = n;
    }

    public Person(int i, String n){
        id = i;
        name = n;
    }

    public int getId(){
        return id;
    }

    public String getName(){
        return name;
    }
}
```

3. Kelas MySQLPersonDAO.java

```
/**
* Nama               : Eva Sitompul
* NIM                : 24060119120035
* Lab                : B2
* Nama File          : MySQLPersonDAO.java
* Tanggal Pembuatan  : 31/05/2023
```

```
 * Deskripsi          : implementasi PersonDAO untuk MySQL
 */

import java.sql.*;

public class MySQLPersonDAO implements PersonDAO{
     public void savePerson(Person person) throws Exception{
          String name = person.getName();

          //membuat koneksi,nama db,user,password menyesuaikan
          Class.forName("com.mysql.jdbc.Driver");
          Connection con =
DriverManager.getConnection("jdbc:mysql://localhost/pbo","root"
,"LulusBD@22");

          //kerjakan mysql query
          String query = "INSERT INTO
person(name)VALUES('"+name+"')";
          System.out.println(query);
          Statement s = con.createStatement();
          s.executeUpdate(query);

          //tutup koneksi database
          con.close();
     }
}
```

4. Kelas DAOManager.java

```
/**
 * Nama                : Eva Sitompul
 * NIM                 : 24060119120035
 * Lab                 : B2
 * Nama File           : DAOManager.java
 * Tanggal Pembuatan   : 31/05/2023
 * Deskripsi           : pengelola DAO dalam program
 */

public class DAOManager{
     private PersonDAO personDAO;

     public void setPersonDAO(PersonDAO person){
          personDAO = person;
     }

     public PersonDAO getPersonDAO(){
          return personDAO;
     }
}
```

5. **Kelas MainDAO.java**

```
/**
 * Nama              : Eva Sitompul
 * NIM               : 24060119120035
 * Lab               : B2
 * Nama File         : MainDAO.java
 * Tanggal Pembuatan : 31/05/2023
 * Deskripsi         : Main program untuk akses DAO
 */

public class MainDAO{
    public static void main(String args[]){
        Person person = new Person ("Indra");
        DAOManager m = new DAOManager();
        m.setPersonDAO (new MySQLPersonDAO());
        try{
            m.getPersonDAO().savePerson(person);
        }catch(Exception e){
            e.printStackTrace();
        }
    }
}
```

6. **Membuat database pbo di mysql**

```
evasitompul>create database pbo;
Query OK, 1 row affected (0.00 sec)

evasitompul>use pbo;
Database changed
evasitompul>create table person(
    -> id int primary key auto_increment not null,
    -> name varchar(100));
Query OK, 0 rows affected (0.01 sec)

evasitompul>describe person;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| id    | int          | NO   | PRI | NULL    | auto_increment |
| name  | varchar(100) | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
2 rows in set (0.00 sec)

evasitompul>select * from person;
Empty set (0.00 sec)
```

7. **Download MySQL Driver dari http://dev.mysql.com/downloads/connector/j/, ekstrak file berekstensi *.jar (mysql-connector-java-[versi].jar) dan letakkan satudirektori dengan source code program.**

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Name	Date modified	Type	Size
DAOManager.class	6/6/2023 10:31 PM	CLASS File	1 KB
DAOManager	6/6/2023 9:37 PM	JAVA File	1 KB
EvaSitompul	6/6/2023 11:00 PM	Microsoft Word D...	47 KB
MainDAO.class	6/6/2023 10:31 PM	CLASS File	1 KB
MainDAO	6/6/2023 9:51 PM	JAVA File	1 KB
mysql-connector-j-8.0.33	5/31/2023 4:21 PM	Executable Jar File	2,424 KB
MySQLPersonDAO.class	6/6/2023 10:31 PM	CLASS File	2 KB
MySQLPersonDAO	6/6/2023 10:30 PM	JAVA File	1 KB
Person.class	6/6/2023 10:31 PM	CLASS File	1 KB
Person	6/6/2023 9:46 PM	JAVA File	1 KB
PersonDAO.class	6/6/2023 10:31 PM	CLASS File	1 KB
PersonDAO	6/6/2023 9:45 PM	JAVA File	1 KB

8. **Kompilasi semua source code dengan perintah : javac *.java**


```
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>javac *java

C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>
```

9. **Jalankan MainDAO dengan perintah :**


```
C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>java -classpath .\mysql-connector-j-8.0.33.jar;. MainDAO
com.mysql.cj.jdbc.exceptions.CommunicationsException: Communications link failure

The last packet sent successfully to the server was 0 milliseconds ago. The driver has not received any packets from the server.
        at com.mysql.cj.jdbc.exceptions.SQLError.createCommunicationsException(SQLError.java:175)
        at com.mysql.cj.jdbc.exceptions.SQLExceptionsMapping.translateException(SQLExceptionsMapping.java:64)
        at com.mysql.cj.jdbc.ConnectionImpl.createNewIO(ConnectionImpl.java:825)
        at com.mysql.cj.jdbc.ConnectionImpl.<init>(ConnectionImpl.java:446)
        at com.mysql.cj.jdbc.ConnectionImpl.getInstance(ConnectionImpl.java:239)
        at com.mysql.cj.jdbc.NonRegisteringDriver.connect(NonRegisteringDriver.java:188)
        at java.sql/java.sql.DriverManager.getConnection(DriverManager.java:683)
        at java.sql/java.sql.DriverManager.getConnection(DriverManager.java:230)
        at MySQLPersonDAO.savePerson(MySQLPersonDAO.java:21)
        at MainDAO.main(MainDAO.java:16)
Caused by: com.mysql.cj.exceptions.CJCommunicationsException: Communications link failure
```

Belum dapat melakukan koneksi ke MainDAO

10. **Lihat apakah terjadi penambahan record pada tabel !**


```
evasitompul>select * from person;
Empty set (0.01 sec)

evasitompul>
```

Karena pada tahap sebelumnya tidak dapat melakukan koneksi ke MainDAO, maka hasil di mysql masih tetap kosong.

B. **Menggunakan Persistent Object sebagai objek terserialisasi**

1. **Kelas SerializePerson.java berikut, untuk menyimpan objek dalam file yangbernama "person.ser"**

```
/**
 * Nama             : Eva Sitompul
 * NIM              : 24060119120035
 * Lab              : B2
 * Nama File        : SerializePerson.java
 * Tanggal Pembuatan : 31/05/2023
 * Deskripsi         : Program untuk serialisasi objek Person
 */

import java.io.*;

//class Person
class Person implements Serializable{
    private String name;
    public Person(String n){
        name = n;
    }
    public String getName(){
        return name;
    }
}

//class SerializePerson
public class SerializePerson {
    public static void main(String[] args){
        Person person = new Person("Panji");
        try{
            FileOutputStream f = new
FileOutputStream("person.ser");
            ObjectOutputStream s = new ObjectOutputStream(f);
            s.writeObject(person);
            System.out.println("selesai menulis objek
person");
            s.close();
        }
        catch(IOException e){
            e.printStackTrace();
        }
    }
}
```

2. Compile, dan jalankan program di atas

```
C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>javac SerializePerson.java

C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>java SerializePerson
selesai menulis objek person
```

3. Kelas ReadSerializedPerson.java berikut untuk membaca objek yang telahterserialisasi

```
/**
 * Nama              : Eva Sitompul
 * NIM               : 24060119120035
 * Lab               : B2
 * Nama File         : ReadSerializedPerson.java
 * Tanggal Pembuatan : 31/05/2023
 * Deskripsi         : Program untuk serialisasi objek Person
 */

import java.io.*;

public class ReadSerializedPerson {
    public static void main(String[] args){
        Person person = null;
        try{
            FileInputStream f = new
FileInputStream("person.ser");
            ObjectInputStream s = new ObjectInputStream(f);
            person = (Person)s.readObject();
            s.close();
            System.out.println("serial person name =
"+person.getName());
        }
        catch(Exception ioe){
            ioe.printStackTrace();
        }
    }
}
```

4. **Compile dan jalankan kelas di atas dengan**

```
C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>javac ReadSerializedPerson.java

C:\Users\Lenovo\Documents\KULIAH\PRAK PBO\praktikum-pbo\Praktikum 9>java ReadSerializedPerson
serial person name = Panji
```