LAPORAN PRAKTIKUM

PRAKTIKUM 9:
“PERSISTENT OBJECT”

Disusun Oleh :

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24060121140105

PRAKTIKUM PEMROGRAMAN BERORIENTASI OBJEK
LAB B

DEPARTEMEN ILMU KOMPUTER / INFORMATIKA
FAKULTAS SAINS DAN MATEMATIKA
UNIVERSITAS DIPONEGORO
SEMARANG
2023

A. Menggunakan *Persistent Object* sebagai Model Basis Data Relasional

1. PersonDAO.java

```
/**
 * File        : PersonDAO.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 2023
 * Deskripsi   : interface untuk person access object
 */
public interface PersonDAO{
    public void savePerson (Person p) throws Exception;
}
```

2. **Person.java**

```
/**
 * File        : Person.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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. MySQLPersonDAO.java

```java
/**
 * File        : MySQLPersonDAO.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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",
"");

        // 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();
    }
}
```

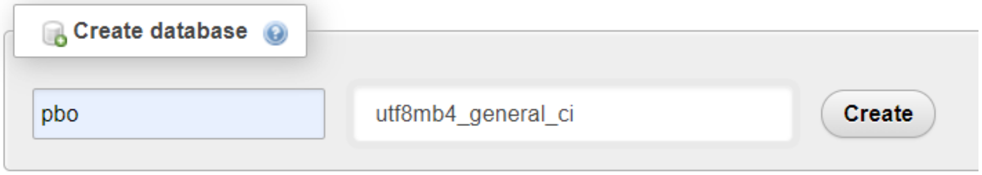
4. DAOManager.java

```java
/**
 * File        : DAOManager.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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. MainDAO.java

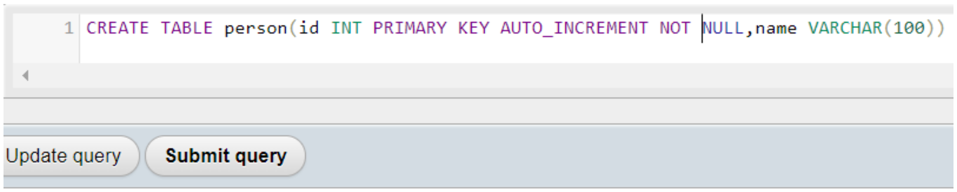
```
/**
 * File         : MainDAO.java
 * Penulis      : Aditya Suryandaru - 24060121140105
 * Tanggal      : 30 Mei 2023
 * Deskripsi    : Main program untuk akses DAO
 */

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. **Buat database dengan nama ‘pbo’ dan tabel pada database tersebut**



pbo

utf8mb4_general_ci



```sql
CREATE TABLE person(id INT PRIMARY KEY AUTO_INCREMENT NOT NULL,name VARCHAR(100))
```

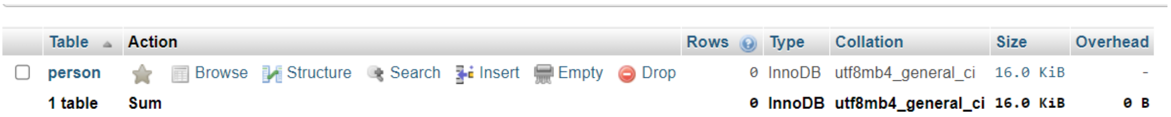
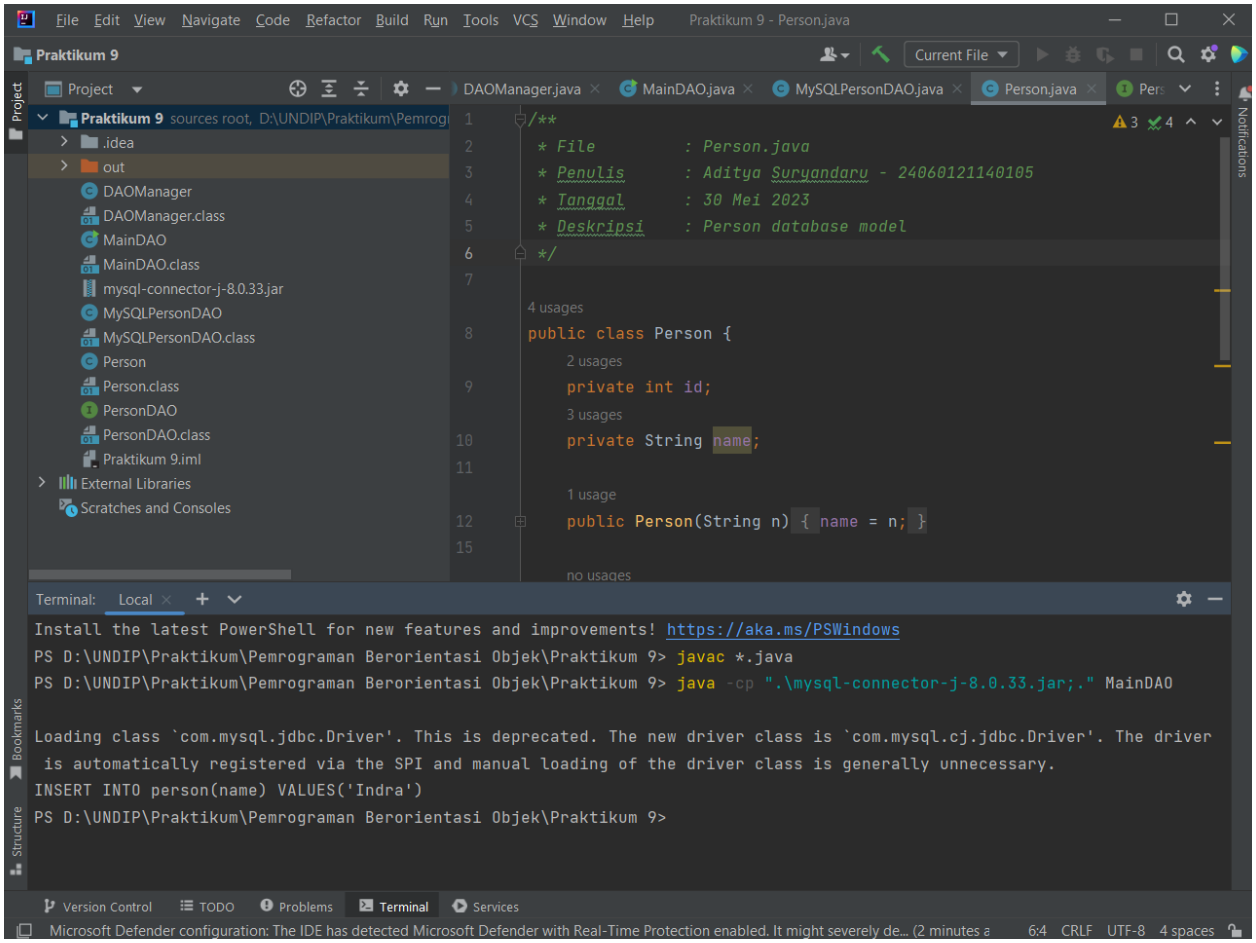


	Table	Action	Rows	Type	Collation	Size	Overhead
□	person	☆ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
	1 table	Sum	0	InnoDB	utf8mb4_general_ci	16.0 KiB	0 B

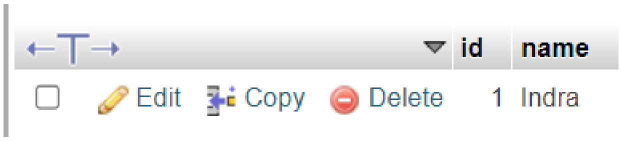
7. **Kompilasi semua source code dan jalankan MainDAO.java**



```java
/**
 * File         : Person.java
 * Penulis      : Aditya Suryandaru - 24060121140105
 * Tanggal      : 30 Mei 2023
 * Deskripsi    : Person database model
 */

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

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

```
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9> javac *.java
PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9> java -cp ".\mysql-connector-j-8.0.33.jar;." MainDAO

Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver class is `com.mysql.cj.jdbc.Driver'. The driver
 is automatically registered via the SPI and manual loading of the driver class is generally unnecessary.
INSERT INTO person(name) VALUES('Indra')
PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9>
```

8. Hasil Akhir



	id	name
□ Edit Copy Delete	1	Indra

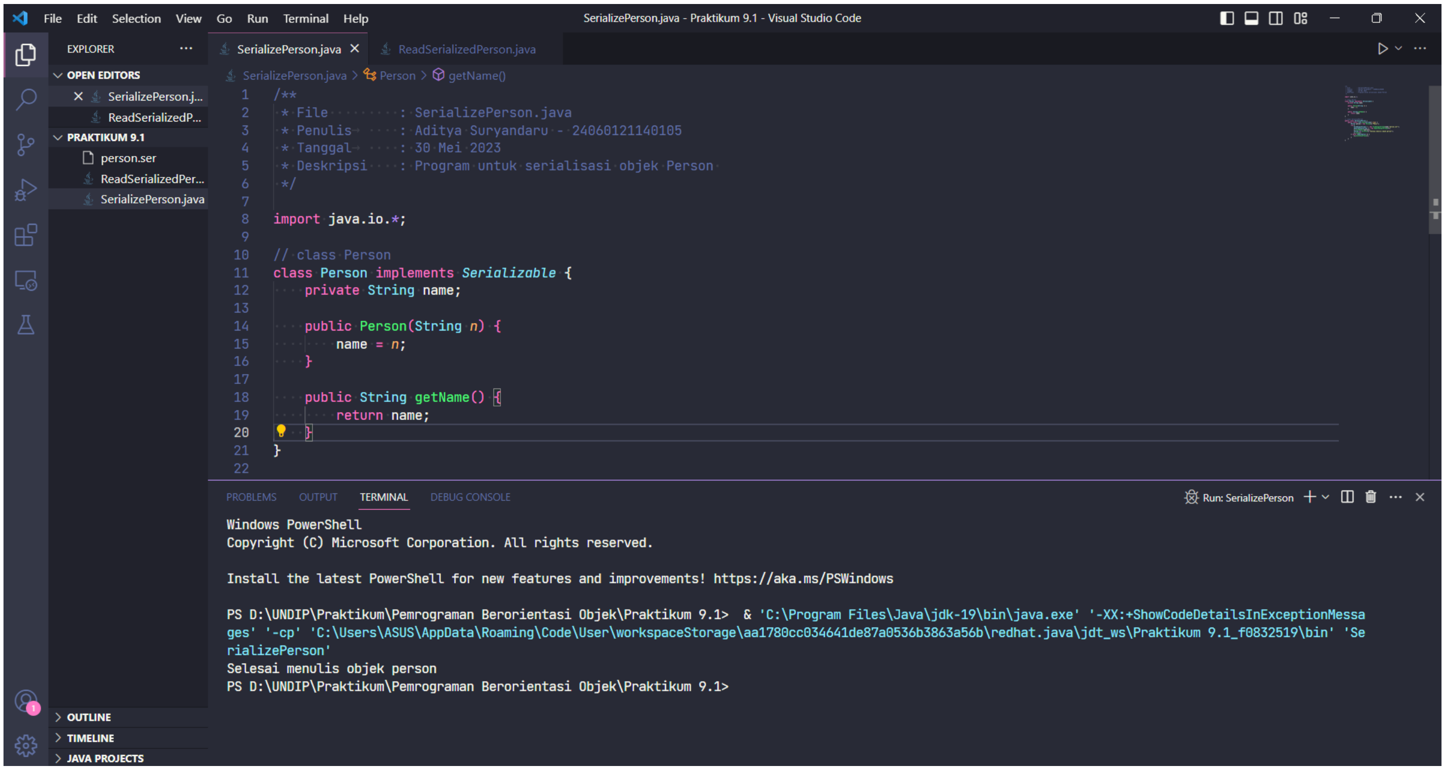
B. Menggunakan *Persistent Object* sebagai objek terserialisasi

1. SerializePerson.java

```
/**
 * File        : SerializePerson.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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 o = new ObjectOutputStream(f);
            o.writeObject(person);
            System.out.println("Selesai menulis objek person");
            o.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

2. Compile dan jalankan program diatas



File Edit Selection View Go Run Terminal Help
SerializePerson.java - Praktikum 9.1 - Visual Studio Code
EXPLORER
OPEN EDITORS
SerializePerson.j...
ReadSerializedP...
PRAKTIKUM 9.1
person.ser
ReadSerializedPer...
SerializePerson.java
SerializePerson.java
ReadSerializedPerson.java
SerializePerson.java > Person > getName()
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Run: SerializePerson
OUTLINE
TIMELINE
JAVA PROJECTS

```
/**
 * File         : SerializePerson.java
 * Penulis      : Aditya Suryandaru - 24060121140105
 * Tanggal      : 30 Mei 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;
    }
}
```

```
Windows PowerShell
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PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9.1>  & 'C:\Program Files\Java\jdk-19\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessa
ges' '-cp' 'C:\Users\ASUS\AppData\Roaming\Code\User\workspaceStorage\aa1780cc034641de87a0536b3863a56b\redhat.java\jdt_ws\Praktikum 9.1_f0832519\bin' 'Se
rializePerson'
Selesai menulis objek person
PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9.1>
```

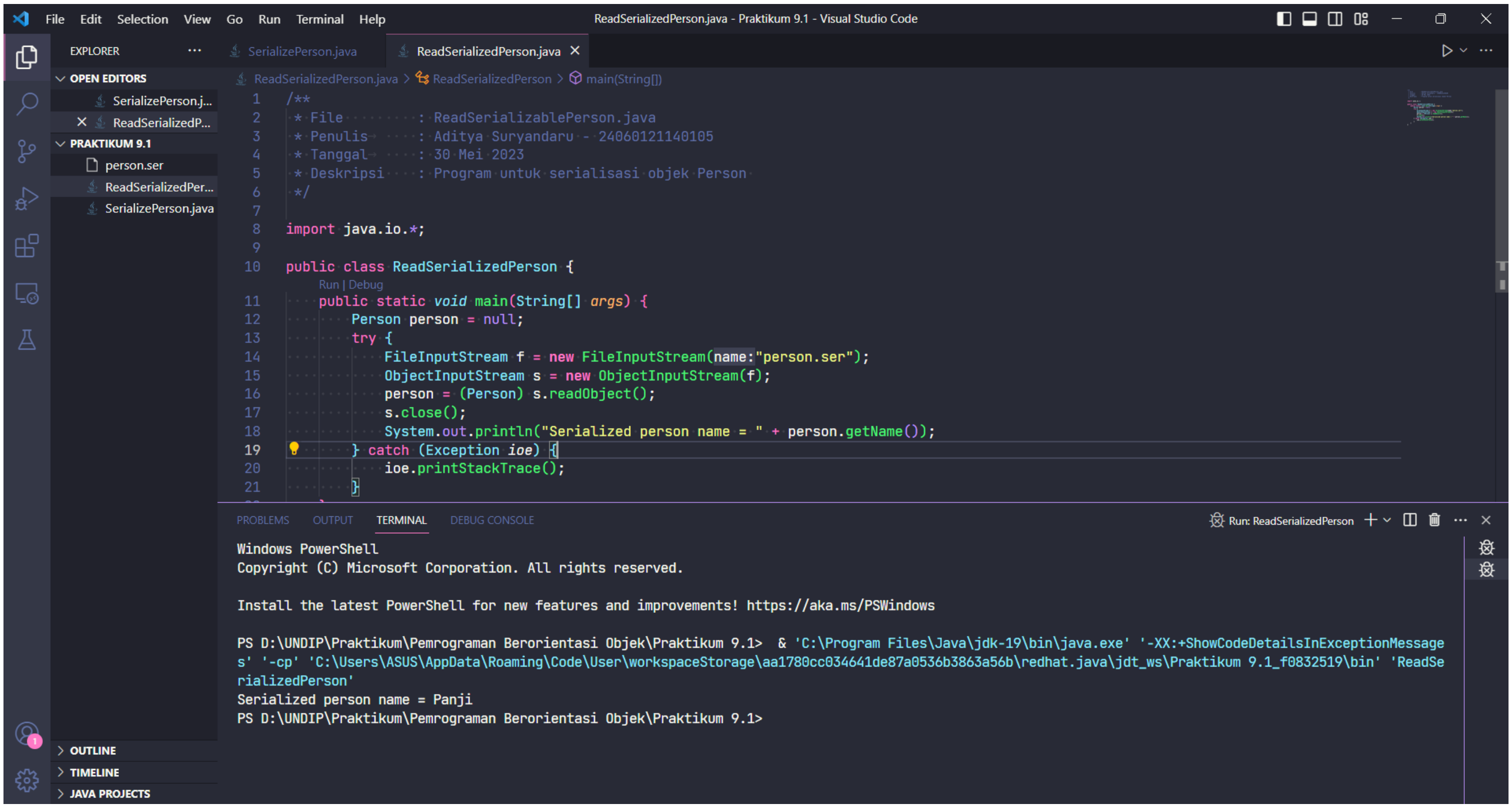
3. ReadSerializePerson.java

```
/**
 * File        : ReadSerializablePerson.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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("Serialized person name = " +
person.getName());
        } catch (Exception ioe) {
            ioe.printStackTrace();
        }
    }
}
```

4. Compile dan jalankan program diatas


File Edit Selection View Go Run Terminal Help
ReadSerializedPerson.java - Praktikum 9.1 - Visual Studio Code
EXPLORER
OPEN EDITORS
SerializePerson.j...
ReadSerializedP...
PRAKTIKUM 9.1
person.ser
ReadSerializedPer...
SerializePerson.java
SerializePerson.java
ReadSerializedPerson.java
ReadSerializedPerson.java > ReadSerializedPerson > main(String[])
Run | Debug
OUTLINE
TIMELINE
JAVA PROJECTS
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Run: ReadSerializedPerson

```java
/**
 * File        : ReadSerializablePerson.java
 * Penulis     : Aditya Suryandaru - 24060121140105
 * Tanggal     : 30 Mei 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(name:"person.ser");
            ObjectInputStream s = new ObjectInputStream(f);
            person = (Person) s.readObject();
            s.close();
            System.out.println("Serialized person name = " + person.getName());
        } catch (Exception ioe) {
            ioe.printStackTrace();
        }
```

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9.1>  & 'C:\Program Files\Java\jdk-19\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessage
s' '-cp' 'C:\Users\ASUS\AppData\Roaming\Code\User\workspaceStorage\aa1780cc034641de87a0536b3863a56b\redhat.java\jdt_ws\Praktikum 9.1_f0832519\bin' 'ReadSe
rializedPerson'
Serialized person name = Panji
PS D:\UNDIP\Praktikum\Pemrograman Berorientasi Objek\Praktikum 9.1>
```