

LAPORAN PRAKTIKUM
PEMROGRAMAN BERORIENTASI OBJEK

(Dosen Pengampu: *Dede Husen, M.Kom*)



NAMA : MUHAMMAD RIZAL NURFIRDAUS

NIM : 20230810088

KELAS : TINFC-2023-04

TEKNIK INFORMATIKA
FAKULTAS ILMU KOMPUTER
UNIVERSITAS KUNINGAN

2024

PRETEST

1. Jelaskan yang anda ketahui tentang I/O Stream!

I/O Stream di Java adalah mekanisme untuk mengelola input dan output data, terbagi menjadi dua kategori utama: Byte Stream dan Character Stream. Byte Stream (InputStream dan OutputStream) digunakan untuk data biner, sementara Character Stream (Reader dan Writer) digunakan untuk data teks. Byte Stream meliputi kelas seperti FileInputStream dan FileOutputStream, sedangkan Character Stream meliputi FileReader dan FileWriter. Buffering menggunakan kelas seperti BufferedInputStream, BufferedOutputStream, BufferedReader, dan BufferedWriter meningkatkan kinerja dengan mengurangi jumlah operasi fisik baca/tulis. Memahami penggunaan dan perbedaan antara kedua jenis stream ini penting untuk efisiensi pemrosesan data dalam aplikasi Java.

PRAKTIKUM 1

```
package com.example.m9;
```

```
import java.io.BufferedReader;
```

```
import java.io.InputStreamReader;
```

```
import java.io.IOException;
```

```
public class Main
```

```
{
```

```
public static void main(String[] args) throws IOException {
```

```
    char inputChar;
```

```
    System.out.println("Masukkan sembarang karakter: ");
```

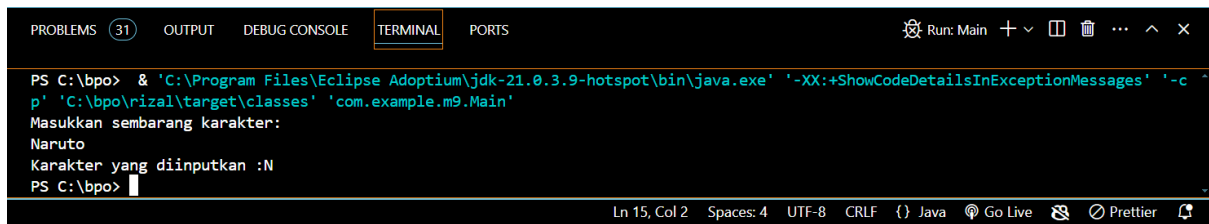
```
    BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(System.in));
```

```
    inputChar = (char)bufferedReader.read();
```

```
    System.out.println("Karakter yang diinputkan :"+ inputChar);
```

```
}
```

```
}
```



```
PS C:\bpo> & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.3.9-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\bpo\rizal\target\classes' 'com.example.m9.Main'
Masukkan sembarang karakter:
Naruto
Karakter yang diinputkan :N
PS C:\bpo>
```

PRAKTIKUM 2

```
package com.example.m9;
```

```
import java.io.BufferedReader;
```

```
import java.io.IOException;
```

```
import java.io.InputStreamReader;
```

```
public class IO_ReadString
```

```
{
```

```
    public static void main(String[] args) throws IOException
```

```
    {
```

```
        String nameString;
```

```
        System.out.println("Masukkan nama Anda: ");
```

```
        BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(System.in));
```

```
        nameString = bufferedReader.readLine();
```

```
        System.out.println("Nama Anda :"+ nameString);
```

```
    }
```

```
}
```



```
PS C:\bpo> & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.3.9-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\bpo\rizal\target\classes' 'com.example.m9.IO_ReadString'
Masukkan nama Anda:
Muhammad Rizal Nurfirdaus
Nama Anda :Muhammad Rizal Nurfirdaus
PS C:\bpo>
```

PRAKTIKUM 3

```
package com.example.m9;

import java.io.DataOutputStream;
import java.io.FileOutputStream;
import java.io.IOException;

public class TulisFile
{
    public static void main(String[] args) throws IOException
    {
        String namaFile = "PBO.txt";
        String namaMhs = "Rio Andriyat Krisdiawan, M.Kom\n";
        String jurusan = "Teknik Informatika\n";
        String angkatan = "2007";

        FileOutputStream outFile = new FileOutputStream(namaFile);

        try
        {
            DataOutputStream outStream=new DataOutputStream(outFile);

            outStream.writeUTF(namaMhs);

            outStream.writeUTF(jurusan);

            outStream.writeUTF(angkatan);

            outStream.close();
        }

        catch (IOException e)
```

```

    {

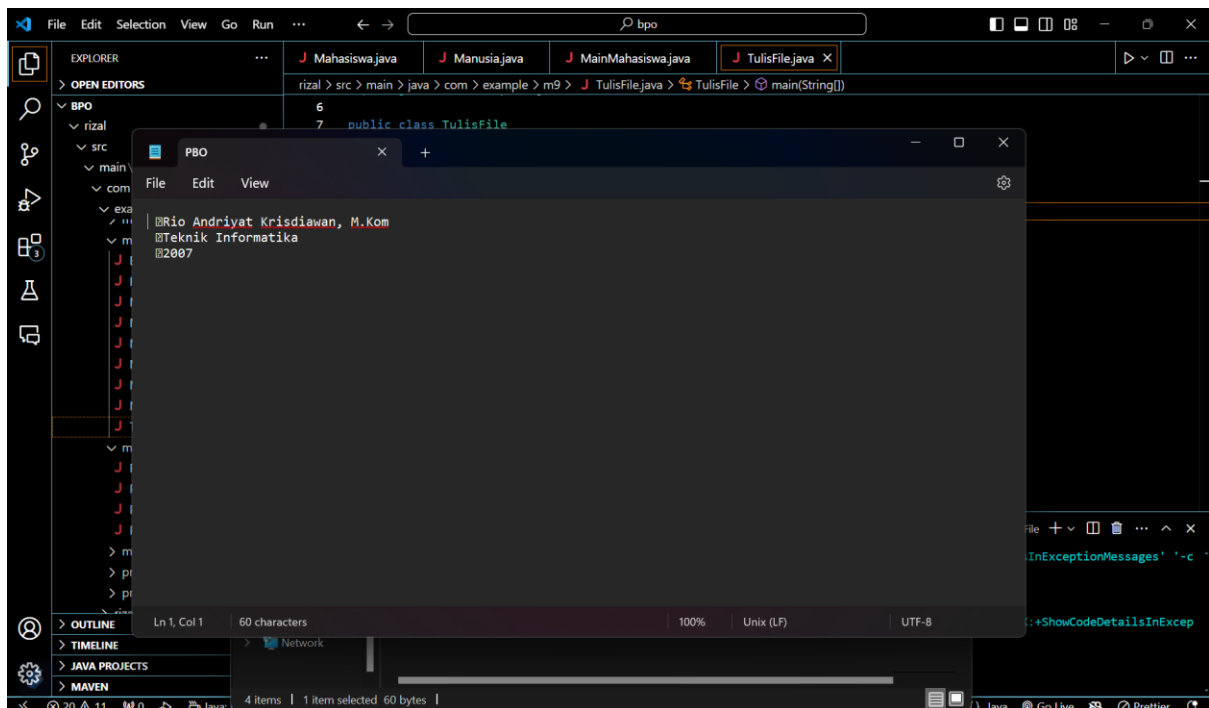
        System.out.println("IOERROR:"+e.getMessage() + "\n");

    }

}

}

```



PRAKTIKUM 4

```
package com.example.m9;
```

```
import java.io.DataInputStream;
```

```
import java.io.FileInputStream;
```

```
import java.io.FileNotFoundException;
```

```
import java.io.IOException;
```

```
class BacaFile {
```

```
    public static void main(String[] args) throws IOException
```

```

{
    String namaFile = "PBO.txt";

    String namaMhs, jurusan, angkatan;

    try
    {
        FileInputStream inFile = new FileInputStream(namaFile);

        DataInputStream inStream = new DataInputStream(inFile);

        namaMhs = inStream.readUTF();

        jurusan = inStream.readUTF();

        angkatan = inStream.readUTF();

        inStream.close();

        System.out.println("Nama : "+namaMhs+"\nJurusan : "+jurusan+"\nAngkatan : "+angkatan);
    }

    catch (FileNotFoundException e)

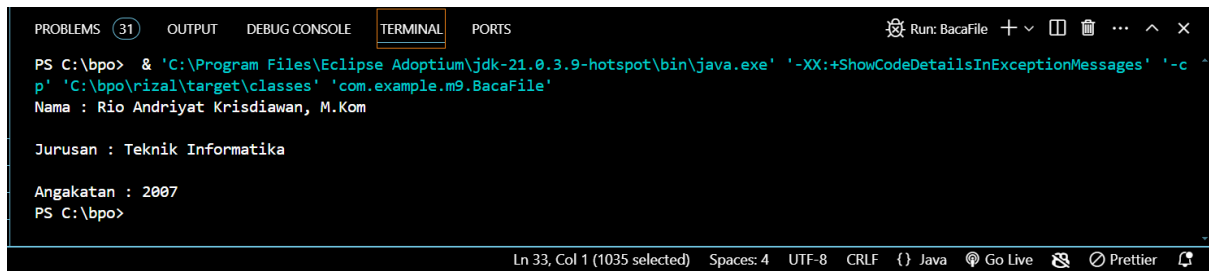
    {
        System.out.println("File "+ namaFile+"Tidak Ada !\n");
    }

    catch (IOException ex)

    {
        System.out.println("IOERROR:"+ex.getMessage() + "\n");
    }

}
}

```



The screenshot shows the Eclipse IDE's terminal window. The terminal title bar includes tabs for PROBLEMS (31), OUTPUT, DEBUG CONSOLE, TERMINAL (selected), and PORTS. The terminal content shows a command prompt where a Java command is executed. The output of the command is displayed in a monospaced font. The command is: `PS C:\bpo> & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.3.9-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\bpo\rizal\target\classes' 'com.example.m9.BacaFile'`. The output is: `Nama : Rio Andriyat Krisdiawan, M.Kom`, `Jurusan : Teknik Informatika`, and `Angkatan : 2007`. The terminal status bar at the bottom shows `Ln 33, Col 1 (1035 selected)`, `Spaces: 4`, `UTF-8`, `CRLF`, `{}`, `Java`, `Go Live`, `Prettier`, and a bell icon.

```
PROBLEMS (31) OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\bpo> & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.3.9-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\bpo\rizal\target\classes' 'com.example.m9.BacaFile'
Nama : Rio Andriyat Krisdiawan, M.Kom

Jurusan : Teknik Informatika

Angkatan : 2007
PS C:\bpo>
```

POSTTEST

1. Buatlah Program I/O dengan case studi yang berbeda dari praktikum diatas.

```
package com.example.m9;
```

```
import java.io.BufferedReader;
```

```
import java.io.IOException;
```

```
import java.io.InputStreamReader;
```

```
public class Mobil {
```

```
    public static void main(String[] args) throws IOException
```

```
    {
```

```
        String namaString;
```

```
        String mobilString;
```

```
        String motorString;
```

```
        System.out.print("Masukkan nama Anda: ");
```

```
        BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(System.in));
```

```
        namaString = bufferedReader.readLine();
```

```
        System.out.print("Masukkan nama mobil Anda: ");
```

```
        mobilString = bufferedReader.readLine();
```

```
        System.out.print("Masukkan nama motor Anda: ");
```

```

        motorString = bufferedReader.readLine();

        System.out.println("Nama Anda :"+ namaString);

        System.out.println("Mobil Anda :"+ mobilString);

        System.out.println("Motor Anda :"+ motorString);

    }

}

```

```

PS C:\bpo> & 'C:\Program Files\Eclipse Adoptium\jdk-21.0.3.9-hotspot\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\bpo\rizal\target\classes' 'com.example.m9.Mobil'
Masukkan nama Anda: Muhammad Rizal Nurfirdaus
Masukkan nama mobil Anda: Bugatti Chiron
Masukkan nama motor Anda: Ducatti H2
Nama Anda :Muhammad Rizal Nurfirdaus
Mobil Anda :Bugatti Chiron
Motor Anda :Ducatti H2
PS C:\bpo>

```

TUGAS INDIVIDU UNTUK MINGGU DEPAN

1.

```
package com.example.m9;
```

```

public class Manusia {

    protected String nama;

    protected String alamat;

    protected String jenisKelamin;

    public Manusia(String nama, String alamat, String jenisKelamin) {

        this.nama = nama;

        this.alamat = alamat;

        this.jenisKelamin = jenisKelamin;

    }
}

```



```

    public String getNama() {

        return nama;

    }


    public String getAlamat() {

        return alamat;

    }


    public String getJenisKelamin() {

        return jenisKelamin;

    }

}

package com.example.m9;


public class Mahasiswa extends Manusia {

    private String nim;

    private String programStudi;

    private String jurusan;


    public Mahasiswa(String nim, String nama, String alamat, String jenisKelamin, String
programStudi, String jurusan) {

        super(nama, alamat, jenisKelamin);

        this.nim = nim;

        this.programStudi = programStudi;

        this.jurusan = jurusan;

    }

```

```

public String getNim() {

    return nim;

}

public String getProgramStudi() {

    return programStudi;

}

public String getJurusan() {

    return jurusan;

}

public String toString() {

    return "Nim: " + nim + "\nNama: " + nama + "\nAlamat: " + alamat + "\nJenis Kelamin: " +
jenisKelamin +

        "\nProgram Studi: " + programStudi + "\nJurusan: " + jurusan + "\n";

}

public String toCSV() {

    return nim + "," + nama + "," + alamat + "," + jenisKelamin + "," + programStudi + "," +
jurusan;

}

}

package com.example.m9;

```

```

import java.io.*;

import java.util.ArrayList;

import java.util.List;

import java.util.Scanner;


public class MainMahasiswa {

    private static final String FILE_NAME = "data_mahasiswa.txt";

    private static List<Mahasiswa> mahasiswaList = new ArrayList<>();


    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        loadMahasiswa();


        while (true) {

            System.out.println("=====");

            System.out.println("MENU PILIHAN");

            System.out.println("-----");

            System.out.println("1. Input Data Mahasiswa");

            System.out.println("2. Lihat Data Mahasiswa");

            System.out.println("3. Keluar Dari program");

            System.out.print("Pilih: ");

            int pilihan = scanner.nextInt();

            scanner.nextLine();

```

```

switch (pilihan) {

    case 1:

        inputDataMahasiswa(scanner);

        break;

    case 2:

        lihatDataMahasiswa();

        break;

    case 3:

        saveMahasiswa();

        System.out.println("Keluar dari program.");

        return;

    default:

        System.out.println("Pilihan tidak valid.");

        break;

}

}

}

```

```

private static void inputDataMahasiswa(Scanner scanner) {

    System.out.print("Masukkan NIM: ");

    String nim = scanner.nextLine();

    System.out.print("Masukkan Nama: ");

    String nama = scanner.nextLine();

    System.out.print("Masukkan Alamat: ");

    String alamat = scanner.nextLine();

```

```

        System.out.print("Masukkan Jenis Kelamin (L/P): ");

        String jenisKelamin = scanner.nextLine();

        System.out.print("Masukkan Program Studi: ");

        String programStudi = scanner.nextLine();

        System.out.print("Masukkan Jurusan: ");

        String jurusan = scanner.nextLine();


        Mahasiswa mahasiswa = new Mahasiswa(nim, nama, alamat, jenisKelamin, programStudi,
        jurusan);

        mahasiswaList.add(mahasiswa);

        System.out.println("Data mahasiswa berhasil ditambahkan.");
    }

    private static void lihatDataMahasiswa() {

        if (mahasiswaList.isEmpty()) {

            System.out.println("Belum ada data mahasiswa.");

        } else {

            System.out.println("Data Mahasiswa:");

            for (Mahasiswa mhs : mahasiswaList) {

                System.out.println(mhs.toString());

            }

        }

    }

    private static void saveMahasiswa() {

        try (BufferedWriter writer = new BufferedWriter(new FileWriter(FILE_NAME))) {

```

```

        for (Mahasiswa mhs : mahasiswaList) {

            writer.write(mhs.toCSV());

            writer.newLine();

        }

    } catch (IOException e) {

        System.out.println("Terjadi kesalahan saat menyimpan data.");

        e.printStackTrace();

    }

}

private static void loadMahasiswa() {

    try (BufferedReader reader = new BufferedReader(new FileReader(FILE_NAME))) {

        String line;

        while ((line = reader.readLine()) != null) {

            String[] data = line.split(",");

            if (data.length == 6) {

                Mahasiswa mahasiswa = new Mahasiswa(data[0], data[1], data[2], data[3], data[4],
data[5]);

                mahasiswaList.add(mahasiswa);

            }

        }

    } catch (IOException e) {

    }

}

}

```

```
PROBLEMS 31 OUTPUT DEBUG CONSOLE TERMINAL PORTS Run: MainMahasiswa + - [ ] [ ] ... - x

=====
MENU PILIHAN
-----
1. Input Data Mahasiswa
2. Lihat Data Mahasiswa
3. Keluar Dari program
Pilih: 1
Masukkan NIM: 20230810088
Masukkan Nama: Muhammad Rizal Nurfirdaus
Masukkan Alamat: Desa Sidaraja
Masukkan Jenis Kelamin (L/P): L
Masukkan Program Studi: Teknik Informatika
Masukkan Jurusan: Ilmu Komputer
Data mahasiswa berhasil ditambahkan.
=====
MENU PILIHAN
-----
1. Input Data Mahasiswa
2. Lihat Data Mahasiswa
3. Keluar Dari program
Pilih: 2
Data Mahasiswa:
Nim: 20230810088
Nama: Muhammad Rizal Nurfirdaus
Alamat: Desa Sidaraja
Jenis Kelamin: L
Program Studi: Teknik Informatika
Jurusan: Ilmu Komputer

=====
MENU PILIHAN
-----
1. Input Data Mahasiswa
2. Lihat Data Mahasiswa
3. Keluar Dari program
Pilih: 3
Keluar dari program.
```

Ln 28, Col 24 Spaces: 4 UTF-8 CRLF {} Java Go Live Prettier