

codelab

```
package perpustakaan;
```

```
//memksa class memaikai sebuah method yg sudah di tntukn
```

```
// sprti abstrak tidk diisi apapun
```

```
public interface Peminjaman {  
    void pinjamBuku(String judul);  
    void kembalikanBuku(String judul);  
}
```

```
package perpustakaan;
```

```
public abstract class Buku {  
    protected String judul; //hnya pewarisan atau satu paket  
    protected String penulis;
```

```
    public Buku(String judul, String penulis) {  
        this.judul = judul;  
        this.penulis = penulis;  
    }
```

```
    public abstract void displayInfo();  
}
```

```
package perpustakaan;
```

```
public class Fiksi extends Buku {
```

```
    public Fiksi(String judul, String penulis) {
```

```
    super(judul, penulis);  
}
```

```
@Override
```

```
public void displayInfo() {  
    System.out.println("=== Buku Fiksi ===");  
    System.out.println("Judul : " + judul);  
    System.out.println("Penulis : " + penulis);  
}  
}
```

```
package perpustakaan;
```

```
public class NonFiksi extends Buku {
```

```
    public NonFiksi(String judul, String penulis) {  
        super(judul, penulis);  
    }
```

```
@Override
```

```
public void displayInfo() {  
    System.out.println("=== Buku Non-Fiksi ===");  
    System.out.println("Judul : " + judul);  
    System.out.println("Penulis : " + penulis);  
}  
}
```

```
package perpustakaan;
```

```
public class Anggota implements Peminjaman {  
    private String nama;  
    private String idAnggota;  
  
    // konstruktor  
    public Anggota(String nama, String idAnggota) {  
        this.nama = nama;  
        this.idAnggota = idAnggota;  
    }  
  
    @Override  
    public void pinjamBuku(String judul) {  
        System.out.println(nama + " meminjam buku: " + judul);  
    }  
  
    // Overloaded method paramater durasi  
    public void pinjamBuku(String judul, int durasi) {  
        System.out.println(nama + " meminjam buku: " + judul + " untuk " + durasi + " hari.");  
    }  
  
    @Override  
    public void kembalikanBuku(String judul) {  
        System.out.println(nama + " mengembalikan buku: " + judul);  
    }  
  
    public String getNama() {  
        return nama;  
    }  
}
```

```

    public String getIdAnggota() {
        return idAnggota;
    }
}

package app;

import perpustakaan.*;

public class Main {
    public static void main(String[] args) {
        Buku buku1 = new Fiksi("silat", "yofi");
        Buku buku2 = new NonFiksi("Indonesia maju", "Yofie");
        //polymorphism = konsep yang memungkinkan satu metod atau objek memiliki bnyk bentuk
        buku1.displayInfo();
        System.out.println();
        buku2.displayInfo();
        System.out.println();

        Anggota anggota1 = new Anggota("Yusuf", "2021158");
        Anggota anggota2 = new Anggota("alif", "2021437");

        anggota1.pinjamBuku("silat");
        anggota2.pinjamBuku("Indonesia maju", 7);

        System.out.println();

        anggota1.kembalikanBuku("silat");
    }
}

```

```
}
```

praktikum

```
package com.praktikum.actions;
```

```
public interface AdminActions {  
    void manageItems();  
    void manageUsers();  
}
```

```
package com.praktikum.actions;
```

```
public interface MahasiswaActions {  
    void reportItem();  
    void viewReportedItems();  
}
```

```
package com.praktikum.users;
```

```
public abstract class User {  
    private String nama;  
    private String nim;
```

```
    public User(String nama, String nim) {  
        this.nama = nama;  
        this.nim = nim;  
    }
```

```
public String getNama() {  
    return nama;  
}
```

```
public String getNim() {  
    return nim;  
}
```

```
public abstract boolean login(String input1, String input2);  
public abstract void displayAppMenu(); // method untuk menampilkan menu spesifik peran  
}
```

```
package com.praktikum.users;
```

```
import com.praktikum.actions.MahasiswaActions;
```

```
import java.util.Scanner;
```

```
public class Mahasiswa extends User implements MahasiswaActions {
```

```
    public Mahasiswa(String nama, String nim) {  
        super(nama, nim);  
    }
```

```
    @Override
```

```
    public boolean login(String inputNama, String inputNim) {  
        return inputNama.equals(getNama()) && inputNim.equals(getNim());  
    }
```

```
    @Override
```

```

public void displayAppMenu() {
    Scanner scanner = new Scanner(System.in);
    int pilihan;
    do {
        System.out.println("\n=== Menu Mahasiswa ===");
        System.out.println("1. Laporkan Barang Temuan/Hilang");
        System.out.println("2. Lihat Daftar Laporan");
        System.out.println("0. Logout");
        System.out.print("Pilih menu: ");
        pilihan = scanner.nextInt();
        scanner.nextLine();

        switch (pilihan) {
            case 1 -> reportItem();
            case 2 -> viewReportedItems();
            case 0 -> System.out.println("Logout...");
            default -> System.out.println("Pilihan tidak valid.");
        }
    } while (pilihan != 0);
}

```

@Override

```

public void reportItem() { //untuk melaporkan barang
    Scanner scanner = new Scanner(System.in);
    System.out.print("Nama Barang: ");
    String namaBarang = scanner.nextLine();
    System.out.print("Deskripsi Barang: ");
    String deskripsi = scanner.nextLine();
    System.out.print("Lokasi Ditemukan/Terakhir Dilihat: ");
}

```

```
String lokasi = scanner.nextLine();
```

```
System.out.println("Laporan berhasil dikirim:");
```

```
System.out.println("Nama Barang: " + namaBarang);
```

```
System.out.println("Deskripsi: " + deskripsi);
```

```
System.out.println("Lokasi: " + lokasi);
```

```
}
```

```
@Override
```

```
public void viewReportedItems() { //untuk melihat daftar barang
```

```
    System.out.println(">> Fitur Lihat Laporan Belum Tersedia <<");
```

```
}
```

```
}
```

```
package com.praktikum.users;
```

```
import com.praktikum.actions.AdminActions;
```

```
import java.util.Scanner;
```

```
public class Admin extends User implements AdminActions {
```

```
    private String username;
```

```
    private String password;
```

```
    public Admin(String nama, String nim, String username, String password) {
```

```
        super(nama, nim);
```

```
        this.username = username;
```

```
        this.password = password;
```

```
}
```


@Override

```
public boolean login(String inputUsername, String inputPassword) {  
    return inputUsername.equals(username) && inputPassword.equals(password);  
}
```

@Override

```
public void displayAppMenu() {  
    Scanner scanner = new Scanner(System.in);  
    int pilihan;  
    do {  
        System.out.println("\n=== Menu Admin ===");  
        System.out.println("1. Kelola Laporan Barang");  
        System.out.println("2. Kelola Data Mahasiswa");  
        System.out.println("0. Logout");  
        System.out.print("Pilih menu: ");  
        pilihan = scanner.nextInt();  
        scanner.nextLine();  
  
        switch (pilihan) {  
            case 1 -> manageItems();  
            case 2 -> manageUsers();  
            case 0 -> System.out.println("Logout...");  
            default -> System.out.println("Pilihan tidak valid.");  
        }  
    } while (pilihan != 0);  
}
```

@Override

```
public void manageItems() { //untuk mengelola barang
```

```
        System.out.println(">> Fitur Kelola Barang Belum Tersedia <<");  
    }
```

```
@Override
```

```
public void manageUsers() { //untuk mengelola data mahasiswa  
    System.out.println(">> Fitur Kelola Mahasiswa Belum Tersedia <<");  
}  
}
```

```
package com.praktikum.main;
```

```
import com.praktikum.users.Admin;  
import com.praktikum.users.Mahasiswa;  
import com.praktikum.users.User;  
import java.util.Scanner;
```

```
public class LoginSystem {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
  
        Admin admin = new Admin("Yusuf", "158", "admin158", "pass158");  
        Mahasiswa mhs = new Mahasiswa("Yusuff", "158");  
  
        System.out.println("=== Login System ===");  
        System.out.println("1. Admin");  
        System.out.println("2. Mahasiswa");  
        System.out.print("Pilih Login: ");  
        int pilihan = scanner.nextInt();  
        scanner.nextLine();
```

```
User user = null;

if (pilihan == 1) {
    System.out.print("Username: ");
    String u = scanner.nextLine();
    System.out.print("Password: ");
    String p = scanner.nextLine();

    if (admin.login(u, p)) {
        user = admin; // POLYMORPHISM
    } else {
        System.out.println("Login Admin gagal.");
    }
} else if (pilihan == 2) {
    System.out.print("Nama: ");
    String n = scanner.nextLine();
    System.out.print("NIM: ");
    String nim = scanner.nextLine();

    if (mhs.login(n, nim)) {
        user = mhs; // POLYMORPHISM
    } else {
        System.out.println("Login Mahasiswa gagal.");
    }
} else {
    System.out.println("Pilihan tidak valid.");
}
```

```
if (user != null) {  
    user.displayAppMenu();  
}  
  
scanner.close();  
}  
}
```