Class Admin :

```java
package model;

public class Admin extends User {
    private String username;
    private String email;

    public Admin(String idAdmin, String namaAdmin, String username, String password, String email, String noTelp) {
        super(idAdmin, namaAdmin, noTelp, password);
        this.username = username;
        this.email = email;
    }

    public String getUsername() {
        return username;
    }

    public String getEmail() {
        return email;
    }

    public void setUsername(String username) {
        this.username = username;
    }

    public void setEmail(String email) {
        this.email = email;
    }

    @Override
    public void displayInfo() {
        super.displayInfo();
    }

    @Override
    public void displayInfo(boolean detail) {
        super.displayInfo(detail); // panggil dari User

        if (detail) {
            System.out.println("Username: " + username);
            System.out.println("Email: " + email);
        }
    }

    @Override
    public String getRole() {
        return "Admin";
    }
}
```

Class Buku Service

```java
package service;
import model.Buku;
import java.util.ArrayList;

public class BukuService {
    private static ArrayList<Buku> listBuku = new ArrayList<Buku>();

    public void tambahBuku(Buku buku) {
        listBuku.add(buku);
    }

    public void tampilkanBuku() {
        if(daftarBuku().isEmpty()) {
            System.out.println("Tidak ada buku yang tersedia");
        } else {
            for(Buku buku : daftarBuku()) {
                buku.menampilkanBuku();
            }
        }
    }

    public Buku cariBuku(String idBuku) {
        for (Buku buku : listBuku) {
            if (buku.getIdBuku().equals(idBuku)) {
                return buku;
            }
        }
        return null;
    }

    public void updateBuku(String idBuku, double hargaBuku, int stok) {
        Buku buku = cariBuku(idBuku);
        if (buku != null) {
            buku.setHarga(hargaBuku);
            buku.setStok(stok);
            System.out.println("Buku berhasil diupdate!");
        } else {
            System.out.println("Buku tidak ditemukan.");
        }
    }

    public boolean hapusBuku(String idBuku) {
        Buku buku = cariBuku(idBuku);
        if (buku != null) {
            listBuku.remove(buku);
            System.out.println("Buku berhasil dihapus!");
            return true;
        } else {
            System.out.println("Buku tidak ditemukan.");
            return false;
        }
    }


    public boolean beliBuku(String idBuku, int jumlah) {
        Buku buku = cariBuku(idBuku);
        if (buku != null && buku.getStok() >= jumlah) {
            buku.setStok(buku.getStok() - jumlah);
            System.out.println("✅ Pembelian berhasil!");
            return true;
        } else {
            System.out.println("Pembelian gagal, stok tidak mencukupi atau buku tidak ditemukan.");
            return false;
        }
    }

    public ArrayList<Buku> daftarBuku() {
        return listBuku;
    }
}
```

Class Buku

```java
package model;

public class Buku {
    private String idBuku;
    protected String judulBuku;
    String genre;
    private int stok;
    private double hargaBuku;

    // Constructor
    public Buku(String idBuku, String judulBuku,String genre, int stok, double hargaBuku2) {
        this.idBuku = idBuku;
        this.judulBuku = judulBuku;
        this.genre = genre;
        this.stok = stok;
        this.hargaBuku = hargaBuku2;
    }

    // Getter
    public String getIdBuku() {
        return idBuku;
    }
    public String getJudulBuku() {
        return judulBuku;
    }
    public String getGenre() {
        return genre;
    }
    public int getStok() {
        return stok;
    }
    public double getHargaBuku() {
        return hargaBuku;
    }

    // Setter
    public void setHarga(double hargaBuku)
    {
        this.hargaBuku = hargaBuku;
    }
    public void setStok(int stok)
    {
        this.stok = stok;
    }

    // Method
    public void menampilkanBuku() {
        System.out.println("ID Buku: " + idBuku);
        System.out.println("Judul Buku: " + judulBuku);
        System.out.println("Genre: " + genre);
        System.out.println("Stok: " + stok);
        System.out.println("Harga Buku: Rp " + hargaBuku);
        System.out.println("----------------------------------");
    }
}
```

Class Main

```java
import service.BukuService;
import java.util.Scanner;
import model.Admin;
import model.Buku;
import model.Pelanggan;
import model.User;
import java.util.ArrayList;

public class Main {
    private static BukuService bukuService = new BukuService();
    private static Scanner scanner = new Scanner(System.in);
    private static ArrayList<User> users = new ArrayList<>();

    public static void main(String[] args) {
        // Menambahkan buku ke dalam daftar
        bukuService.tambahBuku(new Buku("B01", "Harry Potter", "Magic", 10, 100000));
        bukuService.tambahBuku(new Buku("B02", "Percy Jackson", "Action", 5, 75000));
        bukuService.tambahBuku(new Buku("B03", "Sherlock Holmes", "Psychology", 7, 80000));
        bukuService.tambahBuku(new Buku("B04", "The Hunger Games", "Thriller", 3, 90000));
        bukuService.tambahBuku(new Buku("B05", "The Lord of The Rings", "Fantasy", 2, 120000));

        // Menambahkan data pengguna (Admin dan Pelanggan)
        users.add(new Pelanggan("1", "Budi", "Jl. Merdeka No. 1", "08123456789", "budi123"));
        users.add(new Pelanggan("2", "Andi", "Jl. Merdeka No. 2", "08123456788", "andi123"));
        users.add(new Admin("A1", "Admin1", "admin1", "admin123", "admin@gmail.com", "08123456789"));

        login();
    }

    public static void login() {
        while (true) {
            System.out.println("=====================");
            System.out.println("           LOGIN            ");
            System.out.println("=====================");

            System.out.print("Masukkan username: ");
            String username = scanner.nextLine();
            System.out.print("Masukkan password: ");
            String password = scanner.nextLine();

            for (User user : users) {
                if (user instanceof Admin && ((Admin) user).getUsername().equals(username) && user.getPassword().equals(password)) {
                    System.out.println("\nLogin berhasil sebagai ADMIN\n");

                    // Tampilkan info user
                    user.displayInfo();
                    System.out.println("\nDisplay Info Lengkap menggunakan Overload: ");
                    user.displayInfo(true);
                    System.out.println("Role: " + user.getRole());
                    menuAdmin();
                    return;
                } else if (user instanceof Pelanggan && ((Pelanggan) user).getNamaPelanggan().equals(username) && user.getPassword().equals(password)) {
                    System.out.println("\nLogin berhasil sebagai PELANGGAN\n");

                    // Tampilkan info user
                    user.displayInfo();
                    System.out.println("\nDisplay Info Lengkap menggunakan Overload: ");
                    user.displayInfo(true);
                    System.out.println("Role: " + user.getRole());
                    menuPelanggan();
                    return;
                }
            }
            System.out.println("\nUsername atau password salah! Coba lagi.\n");
        }
    }

    public static void menuAdmin() {
        while (true) {
            System.out.println("=====================");
            System.out.println("        MENU ADMIN        ");
            System.out.println("=====================");
            System.out.println("1. Tambah Buku");
            System.out.println("2. Hapus Buku");
            System.out.println("3. Lihat Daftar Buku");
            System.out.println("4. Logout");
            System.out.print("Pilih menu: ");
            int pilihan = scanner.nextInt();
            scanner.nextLine();

            switch (pilihan) {
                case 1:
                    tambahBuku();
                    break;
                case 2:
                    hapusBuku();
                    break;
                case 3:
                    System.out.println("=====================");
                    System.out.println("     DAFTAR BUKU        ");
                    System.out.println("=====================");
                    bukuService.tampilkanBuku();
                    break;
                case 4:
                    System.out.println("\nLogout berhasil\n");
                    return;
                default:
                    System.out.println("\n Pilihan tidak valid \n");
            }
        }
    }

    public static void menuPelanggan() {
        while (true) {
            System.out.println("=====================");
            System.out.println("      MENU PELANGGAN      ");
            System.out.println("=====================");
            System.out.println("1. Lihat Buku");
            System.out.println("2. Beli Buku");
            System.out.println("3. Logout");
            System.out.print("Pilih menu: ");
            int pilihan = scanner.nextInt();
            scanner.nextLine();

            switch (pilihan) {
                case 1:
                    System.out.println("=====================");
                    System.out.println("     DAFTAR BUKU        ");
                    System.out.println("=====================\n");
                    bukuService.tampilkanBuku();
                    break;
                case 2:
                    beliBuku();
                    break;
                case 3:
                    System.out.println("\nLogout berhasil\n");
                    return;
                default:
                    System.out.println("\n Pilihan tidak valid \n");
            }
        }
    }

    public static void tambahBuku() {
        System.out.println("=====================");
        System.out.println("       TAMBAH BUKU        ");
        System.out.println("=====================");
        System.out.print("Masukkan Kode Buku: ");
        String kode = scanner.nextLine();
        System.out.print("Masukkan Nama Buku: ");
        String nama = scanner.nextLine();
        System.out.print("Masukkan Genre Buku: ");
        String genre = scanner.nextLine();
        System.out.print("Masukkan Stok Buku: ");
        int stok = scanner.nextInt();
        System.out.print("Masukkan Harga Buku: ");
        int harga = scanner.nextInt();
        scanner.nextLine();

        Buku bukuBaru = new Buku(kode, nama, genre, stok, harga);
        bukuService.tambahBuku(bukuBaru);
        System.out.println("\nBuku berhasil ditambahkan!\n");
    }

    public static void hapusBuku() {
        System.out.println("=====================");
        System.out.println("        HAPUS BUKU        ");
        System.out.println("=====================\n");
        bukuService.tampilkanBuku();
        System.out.print("Masukkan Kode Buku yang ingin dihapus: ");
        String kode = scanner.nextLine();
        if (bukuService.hapusBuku(kode)) {
            System.out.println("\nBuku berhasil dihapus!\n");
        } else {
            System.out.println("\nBuku tidak ditemukan\n");
        }
    }

    public static void beliBuku() {
        System.out.println("=====================");
        System.out.println("         BELI BUKU        ");
        System.out.println("=====================");
        bukuService.tampilkanBuku();
        System.out.print("Masukkan Kode Buku yang ingin dibeli: ");
        String kode = scanner.nextLine();
        System.out.print("Masukkan Jumlah Buku yang ingin dibeli: ");
        int jumlah = scanner.nextInt();
        scanner.nextLine();

        if (bukuService.beliBuku(kode, jumlah)) {
            System.out.println("\nPembelian berhasil\n");
        } else {
            System.out.println("\nPembelian gagal, cek stok atau kode buku\n");
        }
    }
}
```

Overload bagian user

```
1   // Overload
2   public void displayInfo(boolean detail) {
3       if (detail) {
4           System.out.println("ID: " + id);
5           System.out.println("Nama: " + nama);
6           System.out.println("role: " + role);
7           System.out.println("No HP: " + noTelp);
8       } else {
9           displayInfo(); // panggil yang versi singkat
10      }
11  }
```

Override bagian pelanggan

```
1   @Override
2   public void displayInfo() {
3       super.displayInfo();
4   }
5
6   @Override
7   public void displayInfo(boolean detail) {
8       super.displayInfo(detail); // panggil dari User
9
10      if (detail) {
11          System.out.println("Alamat: " + alamat);
12      }
13  }
14
15  @Override
16  public String getRole() {
17      return "Pelanggan";
18  }
```

Override dibagian admin

```
@Override
public void displayInfo() {
    super.displayInfo();
}

@Override
public void displayInfo(boolean detail) {
    super.displayInfo(detail); // panggil dari User

    if (detail) {
        System.out.println("Username: " + username);
        System.out.println("Email: " + email);
    }
}

@Override
public String getRole() {
    return "Admin";
}
}
```

Class Pelanggan

```java
package model;

public class Pelanggan extends User {
    private String alamat;

    public Pelanggan(String idPelanggan, String namaPelanggan, String alamat, String noTelp, String password) {
        super(idPelanggan, namaPelanggan, noTelp, password);
        this.alamat = alamat;
    }

    public String getIdPelanggan() {
        return id;
    }

    public String getNamaPelanggan() {
        return nama;
    }

    public String getNoTelpPelanggan() {
        return noTelp;
    }

    public String getPasswordPelanggan() {
        return password;
    }

    public String getAlamat() {
        return alamat;
    }

    @Override
    public void displayInfo() {
        super.displayInfo();
    }

    @Override
    public void displayInfo(boolean detail) {
        super.displayInfo(detail); // panggil dari User

        if (detail) {
            System.out.println("Alamat: " + alamat);
        }
    }

    @Override
    public String getRole() {
        return "Pelanggan";
    }
}
```

Class User

```java
package model;

public class User {
    protected String id;
    protected String nama;
    protected String noTelp;
    protected String password;
    protected String role;

    public User(String id, String nama, String noTelp, String password) {
        this.id = id;
        this.nama = nama;
        this.noTelp = noTelp;
        this.password = password;
    }

    public String getId() {
        return id;
    }

    public String getNama() {
        return nama;
    }

    public String getNoTelp() {
        return noTelp;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {
        this.password = password;
    }

    public String getRole() {
        return "User";
    }

    public void displayInfo() {
        System.out.println("ID: " + id);
        System.out.println("Nama: " + nama);
    }

// Overload
public void displayInfo(boolean detail) {
    if (detail) {
        System.out.println("ID: " + id);
        System.out.println("Nama: " + nama);
        System.out.println("role: " + role);
        System.out.println("No HP: " + noTelp);
    } else {
        displayInfo(); // panggil yang versi singkat
    }
}

    public void setPassword(String password, String confirmPassword) {
        if (password.equals(confirmPassword)) {
            this.password = password;
        } else {
            System.out.println("Password dan konfirmasi tidak cocok!");
        }
    }
}
```