import java.util.HashMap;

import java.util.Map;

import java.util.Scanner;

class User {

private String username;

private String password;

public User(String username, String password) {

this.username = username;

this.password = password;

}

public String getUsername() {

return username;

}

public String getPassword() {

return password;

}

}

class AuthenticationService {

private Map<String, User> userDatabase;

public AuthenticationService() {

userDatabase = new HashMap<>();

}

public void registerUser(String username, String password) {

if (!userDatabase.containsKey(username)) {

User newUser = new User(username, password);

userDatabase.put(username, newUser);

System.out.println("User registered successfully.");

} else {

System.out.println("Username already exists. Please choose another username.");

}

}

public boolean authenticateUser(String username, String password) {

User user = userDatabase.get(username);

return user != null && user.getPassword().equals(password);

}

}

public class EAuthenticationSystem {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

AuthenticationService authService = new AuthenticationService();

while (true) {

System.out.println("\nE-Authentication System Menu:");

System.out.println("1. Register a new user");

System.out.println("2. Authenticate a user");

System.out.println("3. Exit");

System.out.print("Enter your choice: ");

int choice = scanner.nextInt();

scanner.nextLine(); // Consume the newline character

switch (choice) {

case 1:

System.out.print("Enter a new username: ");

String newUsername = scanner.nextLine();

System.out.print("Enter a password: ");

String newPassword = scanner.nextLine();

authService.registerUser(newUsername, newPassword);

break;

case 2:

System.out.print("Enter your username: ");

String enteredUsername = scanner.nextLine();

System.out.print("Enter your password: ");

String enteredPassword = scanner.nextLine();

if (authService.authenticateUser(enteredUsername, enteredPassword)) {

System.out.println("Authentication successful. Welcome, " + enteredUsername + "!");

} else {

System.out.println("Authentication failed. Invalid username or password.");

}

break;

case 3:

System.out.println("Exiting E-Authentication System. Goodbye!");

System.exit(0);

default:

System.out.println("Invalid choice. Please enter a number between 1 and 3.");

}

}

}

}