Q.2. PROGRAM TO PERFORM LOGIN FUNCTION

import java.util.Scanner;

public class LoginSystem {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

String username = "user"; // Replace with actual username

String password = "password"; // Replace with actual password

int attemptsRemaining = 3;

boolean loggedIn = false;

while (attemptsRemaining > 0 && !loggedIn) {

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

String enteredUsername = scanner.nextLine();

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

String enteredPassword = maskPasswordInput(scanner.nextLine());

if (enteredUsername.equals(username) && enteredPassword.equals(maskPasswordInput(password))) {

loggedIn = true;

System.out.println("Login successful!");

} else {

attemptsRemaining--;

System.out.println("Incorrect username or password. Attempts remaining: " + attemptsRemaining);

}

}

if (!loggedIn) {

System.out.println("Login failed after multiple attempts.");

}

scanner.close();

}

// Helper method to mask password input

private static String maskPasswordInput(String password) {

StringBuilder maskedPassword = new StringBuilder();

for (int i = 0; i < password.length(); i++) {

maskedPassword.append("\*");

}

return maskedPassword.toString();

}

}

Q.1

**Classes**

* + Car: Attributes might include car ID, make, model, year, availability status, rental rate. Methods could include rentCar(), returnCar(), displayDetails().
  + Customer: Attributes could be customer ID, name, address, contact information, driver's license. Methods might include rentACar(), returnACar(), viewRentalHistory().
  + RentalAgency: Attributes could be a list of cars, a list of customers, and potentially rental records. Methods would manage car rentals, customer accounts, and rental transactions (addCar(), addCustomer(), rentCar(), returnCar(), generateReport()).

**Functionality Implementation**

* + **Car Rental:** Allow customers to rent cars, specifying the rental period.
  + **Customer Management:** Add, update, and delete customer information.
  + **Rental Transactions:** Record rental transactions, including dates, car rented, customer, and total cost.