

```

run:
*****
1. Rent a Car
2. Return a Car
3. Display Information
4. Quit
*****
Please the enter the number '1' '2' '3' '4' :1
Enter the Registration Number of the car.
tas123
Enter the name of the person
tas
Enter the Identity of the person
bal23
Enter the Start Date D/MM/YYYY
25/6/17
Enter the number of days
5
*****
1. Rent a Car
2. Return a Car
3. Display Information
4. Quit
*****
Please the enter the number '1' '2' '3' '4' :|

```

Option 1

```

*****
Please the enter the number '1' '2' '3' '4' :2
Enter car registration number
tas123
Done.
*****
1. Rent a Car
2. Return a Car
3. Display Information
4. Quit
*****
Please the enter the number '1' '2' '3' '4' :

```

Option 2

```

Please the enter the number '1' '2' '3' '4' :3

1. All Cars information
2. All rental records
3. Specific rental information
0. To go back

Please enter the number from your selection
1

```

Make	Model	Registration Number	Rental Rate	Avaibility
toyota	camry	tas123	200	true
toyota	prius	jas123	300	true

```

1. All Cars information
2. All rental records
3. Specific rental information
0. To go back

```

```

1. All Cars information
2. All rental records
3. Specific rental information
0. To go back

Please enter the number from your selection
2

```

Name	ID	Registration Number	Rental Date	Duration
tas	123	tas123	2/6/17	5

```

Please enter the number from your selection
3
Enter the Registration Number
tas123

```

Name	ID	Registration Number	Rental Date	Duration
tas	123	tas123	2/6/17	5

```

1. All Cars information
2. All rental records
3. Specific rental information
0. To go back

Please enter the number from your selection

```

Option3

//Student's Full name: Tasfique Enam

//Student's ID: 5886429

//Modification Date: 24/06/17

//Purpose of this file: Main class

package assignment4;

```
import java.util.*;
import java.io.File;
import java.io.IOException;
import java.util.ArrayList;
import java.util.HashMap;
import java.util.Scanner;

public class Main {
    private static ArrayList<Rental> rental = new ArrayList<Rental>();
    //creation of arraylist

    private static HashMap <String, Car> car = new HashMap <String, Car> ();
    //creation of hashmap

    //private static Iterator<Rental> itr = rental.iterator();

    private static String filename;

    private static Scanner read2 = new Scanner(System.in);

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

        //loading files.

        filename = "data.txt";

        File creating = new File(filename);

        Scanner read = new Scanner (creating);

        //Car object2 = new Car(null, null, null, 0, false);

        //reading the text file and assigning the text to the variables
```

```

while(read.hasNext()){
String regnum = read.nextLine();
String model = read.nextLine();
String make = read.nextLine();
int rate = Integer.parseInt(read.nextLine());
boolean status = Boolean.parseBoolean(read.nextLine());
Car cars = new Car(regnum, model, make, rate, status);
car.put(regnum, cars);
}

int option;

do{
    System.out.print("*****\n" + //display menu
        "1. Rent a Car\n" +
        "2. Return a Car\n" +
        "3. Display Information\n"+
        "4. Quit\n" +
        "*****\n" +
        "Please the enter the number '1' '2' '3' '4' :");
    option = read2.nextInt();

    switch(option){
    case 1: RentCar();
    break;
    case 2: ReturnCar();
    break;

```

```

        case 3: Display();
        break;
        case 4: option = 0;
        break;
        default: System.out.println("Invalid Number Entered. ");
    }

    }while (option!=0);

}

//rent a car method
public static void RentCar(){
    Scanner read2 = new Scanner (System.in);
    String regnum=null;

    Car ObjRent = null;

    do{
        System.out.println("Enter the Registration Number of the car. ");
        //asking for reg number
        regnum = read2.nextLine();
        ObjRent = car.get(regnum); // creating an object

        if (ObjRent == null){ //if an invalid reg num is entered
            System.out.println("You have entered an invalid Registration
Number ");

```

```
    } else if(ObjRent.getStatus() == false){ //if car is not available as in  
being rented.
```

```
        System.out.println("The car is not available. ");
```

```
    } else {
```

```
        System.out.println("Enter the name of the person "); //if the car is  
available it will ask for customer's details
```

```
        String name = read2.nextLine();
```

```
        System.out.println("Enter the Identity of the person ");
```

```
        String identity = read2.nextLine();
```

```
        System.out.println("Enter the Start Date D/MM/YYYY ");
```

```
        String startdate = read2.nextLine();
```

```
        System.out.println("Enter the number of days ");
```

```
        int days = read2.nextInt();
```

```
        rental.add(new Rental(name, identity, regnum, startdate, days));
```

```
    }
```

```
    } while(ObjRent == null || ObjRent.getStatus() == false );
```

```
    ObjRent.ChangeStatus();
```

```
}
```

```
public static void ReturnCar(){ //return car method
```

```
    Scanner read2 = new Scanner (System.in);
```

```
    Car ObjReturn = null; // creating an object.
```

```
    do{
```

```
        System.out.println("Enter car registration number "); //asking for  
registration number.
```

```

String regnum = read2.next();
ObjReturn = car.get(regnum);
Iterator<Rental> itr = rental.iterator();
while(itr.hasNext()) {
    Rental returncar = itr.next();
    if(returncar.getCarReg().equalsIgnoreCase(regnum)){
        itr.remove();
    }else{
        System.out.println("Invalid Car Registration number."); //if invalid
reg num is entered.
    }
}
} while(ObjReturn == null);
ObjReturn.ChangeStatus();
System.out.println( "Done. ");
}

```

```

public static void Display(){ //display method.
    int choiceentry;
    Scanner read2 = new Scanner(System.in);
    do{
        System.out.println();    //display of menu
        System.out.println("1. All Cars information ");
        System.out.println("2. All rental records ");
        System.out.println("3. Specific rental information ");
        System.out.println("0. To go back ");
        System.out.println();
        System.out.println("Please enter the number from your selection ");
    }
}

```

```

choiceentry = read2.nextInt();
switch(choiceentry){
    case 1: // for option it displays all car info
        System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s %-15.15s\n", "Make","Model","Registration Number","Rental Rate", "Avaibility");
        for (Map.Entry<String,Car> info : car.entrySet()){

            System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s %-15.15s\n",
                ,info.getValue().getMake()
                ,info.getValue().getModel(),info.getValue().getRegnum()
                ,info.getValue().getRate()
                ,info.getValue().getStatus());
        }
        System.out.println();
        System.out.println();
        break;

    case 2: //for case 2 it displays rental records.
        System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s %-15.15s\n", "Name","ID","Registration Number","Rental Date ", "Duration");
        for(Rental customers : rental ){
            System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s %-15.15s\n",
                ,customers.getName()
                ,customers.getIdentity()
                ,customers.getCarReg()
                ,customers.getStartDate()

```



```
        ,customers.getDays());  
    }  
    System.out.println();  
    System.out.println();  
    break;
```

case 3: //it shows specific rental info

```
    System.out.println("Enter the Registration Number ");  
    String regnum = read2.next();  
    System.out.println("");  
    Iterator<Rental> itr = rental.iterator();  
    boolean status = false;  
  
    while(itr.hasNext()){  
        Rental customers = itr.next();  
        if(customers.getCarReg().equalsIgnoreCase(regnum)){  
            status = true;  
  
            System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s  
%-15.15s%n", "Name", "ID", "Registration Number", "Rental Date ", "Duration");  
  
            System.out.printf("%-15.15s %-15.15s %-30.30s %-15.15s  
%-15.15s%n"  
        ,customers.getName()  
        ,customers.getIdentity()  
        ,customers.getCarReg()  
        ,customers.getStartDate()  
        ,customers.getDays());  
        }  
    }
```

```

        if(status == false) {
            System.out.println("No Record Found!");
            System.out.println("");
        }
        break;

    }
}while(choiceentry!=0);
}
}

//Student's Full name: Tasfique Enam
//Student's ID: 5886429
//Modification Date: 24/06/17
//Purpose of this file: Car class
package assignment4;

public class Car { //attributes.
    private String regnum;
    private String model;
    private String make;
    private int rate;
    private boolean status;

    public Car(String regnum, String model, String make, int rate, boolean
status){
        this.regnum= regnum;

```

```
        this.model = model;
        this.make = make;
        this.rate = rate;
        this.status = status;
    }
    String getRegnum(){
        return regnum;
    }

    String getModel(){
        return model;
    }

    String getMake(){
        return make;
    }

    int getRate(){
        return rate;
    }

    boolean getStatus(){
        return status;
    }

    public void ChangeStatus(){
        if (status == false){
```

```
        status = true;
    }
    else if (status == true){
        status = false;
    }
}
}
```

//Student's Full name: Tasfique Enam

//Student's ID: 5886429

//Modification Date: 24/06/17

//Purpose of this file: rental class

package assignment4;

public class Rental {

private String name;

private String identity;

private String CarReg;

private String StartDate;

private int Days;

public Rental(){ //default constructor

name = "";

identity = "";

CarReg = "";

StartDate = "";

Days = 0;

}

```
public Rental(String name, String identity, String CarReg, String StartDate,
int Days){ //non default

    this.name= name;

    this.identity = identity;

    this.StartDate = StartDate;

    this.Days = Days;

    this.CarReg = CarReg;

}

String getName(){ //get method.

    return name;

}


String getIdentity(){

    return identity;

}


String getCarReg(){

    return CarReg;

}


String getStartDate(){

    return StartDate;

}


int getDays(){

    return Days;

}
```

```
public static String method()  
{  
    return "no param";  
}  
public static String method(String n)  
{  
    return "with param";  
}  
  
}
```