IBM CAREER EDUCATION

MAIN PROJECT

DOMAIN NAME: JAVA

Car Rental System

Submitted By,

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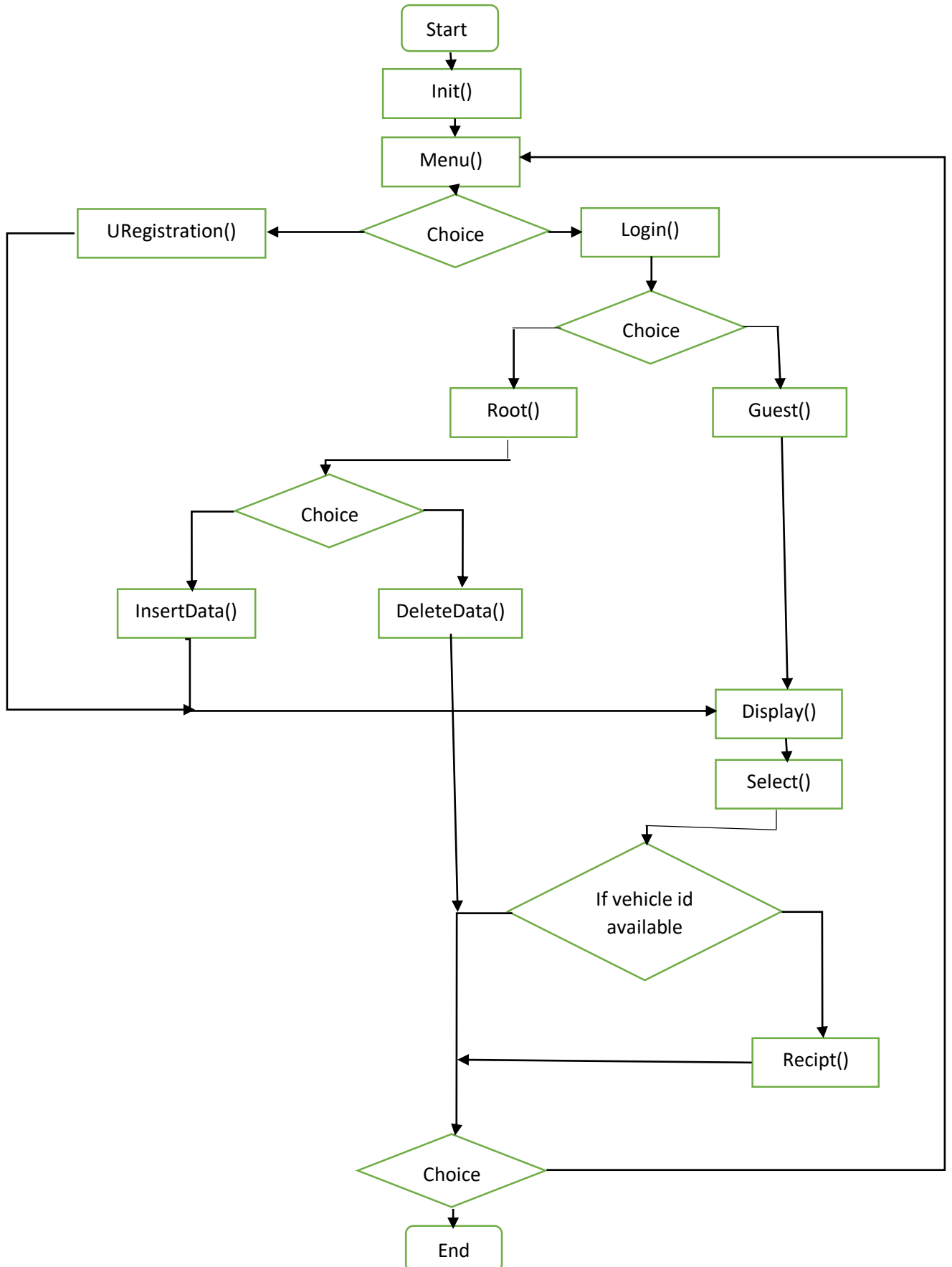
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Submitted To,

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IBM Software Technical Trainer

Car Rental System

FLOWCHART

```
                          ┌─────────┐
                          │  Start  │
                          └────┬────┘
                               ▼
                          ┌─────────┐
                          │  Init() │
                          └────┬────┘
                               ▼
                          ┌─────────┐◄───────────────────────┐
                          │ Menu()  │                        │
                          └────┬────┘                        │
                               ▼                             │
        ┌────────────────┐   ╱◇╲      ┌─────────┐           │
        │ URegistration()│◄─ Choice ─►│ Login() │           │
        └────────────────┘   ╲◇╱      └────┬────┘           │
                │                           ▼                │
                │                         ╱◇╲                │
                │                        Choice               │
                │                      ╱      ╲              │
                │               ┌─────────┐  ┌─────────┐     │
                │               │ Root()  │  │ Guest() │     │
                │               └────┬────┘  └────┬────┘     │
                │                    ▼            │          │
                │                  ╱◇╲            │          │
                │                 Choice          │          │
                │               ╱      ╲          │          │
                │        ┌──────────┐ ┌──────────┐│          │
                │        │InsertData()│ │DeleteData()│        │
                │        └─────┬────┘ └─────┬────┘ │          │
                │              │            │      │          │
                └──────────────┤            │      ▼          │
                               ▼            │  ┌─────────┐     │
                          ┌─────────┐       │  │Display()│     │
                          │Display()│       │  └────┬────┘     │
                          └─────────┘       │       ▼          │
                                            │  ┌─────────┐     │
                                            │  │Select() │     │
                                            │  └────┬────┘     │
                                            │       ▼          │
                                            │   ╱◇╲            │
                                            │  If vehicle id   │
                                            │   available      │
                                            │   ╲◇╱            │
                                            │       ▼          │
                                            │  ┌─────────┐     │
                                            │  │ Recipt()│     │
                                            │  └─────────┘     │
                                            ▼                  │
                                          ╱◇╲                 │
                                         Choice ──────────────┘
                                          ╲◇╱
                                           ▼
                                      ┌─────────┐
                                      │   End   │
                                      └─────────┘
```

Car Rental System

SOFTWARE SPECIFICATIONS

- OPERATING SYSTEM   :   Linux / Windows / IOS
- ENVIRONMENT   :   Eclipse Oxygen

HARDWARE SPECIFICATIONS

- PROCESSOR   :   INTEL i3 @ 2.30GHz
- RAM   :   8 GB RAM
- MONITOR   :   15" COLOR
- HARD DISK   :   40 GB

DESCRIPTION

Car Rental System

INTRODUCTION:

This system is based on a concept to rent cars and generate rental invoice of a rental company. Before stepping into the main system a user has to pass through a login system to get access, then only the user can select cars with a different model and rent for certain days. This project contains limited features, but the essential ones.

DESCRIPTION:

This project once logged in displays the various models along with their respective details which are available to rent. The user can select any model and rent it for a number of days if it is available. Then the receipt is printed and program ends. It also contains thee feature for root login which allows root to enter new data or delete old data. Along with login a new user registration page is also available.

PROS:

. Helps users rent car anytime any day from wherever they are.

CONS:

. This system only works in runtime i.e. any new data entered or old data deleted will only stay for the duration of the program once it is finished everything will be reset.

PICTURES

Car Rental System

AIM:

To create a car rental system that allows users to login and rent a vehicle and print a receipt at the end.

PROGRAM:

```java
import java.util.Scanner;

public class Car_rental_system2 {

    static String[][] User = new String[15][7];
    static String[][] Data = new String[15][6];
    static Scanner sc=new Scanner(System.in);
    static int st_u=0;
    static int u;
    static int st_d=0;

    public static void Init()
    {
        Data[0][0]="001";
        Data[1][0]="002";
        Data[2][0]="003";
        User[0][0]="Manush";
        User[1][0]="Arman";

        Data[0][1]="Toyota Altis";
        Data[1][1]="Honda Jazz";
        Data[2][1]="Tata Nano";
        User[0][1]="Pandya";
        User[1][1]="Mardhani";

        Data[0][2]="GJ01RH1234";
        Data[1][2]="GJ01RH4231";
        Data[2][2]="GJ01RH5678";
        User[0][2]="manushpandya14@gmail.com";
        User[1][2]="Armanmardhani@gmail.com";

        Data[0][3]="500";
```

..

```java
            Data[1][3]="600";
            Data[2][3]="300";
            User[0][3]="abc";
            User[1][3]="xyz";

            Data[0][4]="30";
            Data[1][4]="50";
            Data[2][4]="20";
            User[0][4]="xyz";
            User[1][4]="abc";

            Data[0][5]="Available";
            Data[1][5]="Available";
            Data[2][5]="Available";
            User[0][5]="Ahmedabad";
            User[1][5]="Ahmedabad";

            User[0][5]="1234";
            User[1][5]="1234";

            st_u=2;
            st_d=3;
        }

    public static void Display()
    {
        System.out.println("Vehicles available for
rent....");
        for(int i=0; i<st_d; i++)
            {
                for(int j=0; j<7; i++)
                {
                        System.out.println("ID\t MODEL\t
REG_NO\t DEPOSIT\t RATE\t AVAILABLE");
                        System.out.println(Data[i][j]+"\t
");
                }
            }
        Select();
    }

    public static void Select()
    {
        System.out.println("Enter id of vehicle you wish to
rent: ");
        String id=sc.next();
        int r=1;
        String av="Available";
        for(int i=0; i<7; i++)
        {
            if(Data[i][0].equals(id))
            {
                if(Data[i][5].equals(av))
                Recipt(i);
            }
            else
                r=0;
        }
```

```java
            if(r==0)
                    System.out.println("Vehicle id not found
please check id:");
        }

    public static void Recipt(int n)
    {
            System.out.println("Enter date of renting: ");
            String sdate=sc.next();
            System.out.println("Enter date of return: ");
            String rdate=sc.next();
            System.out.println("Enter licence number: ");
            String lno=sc.next();
            System.out.println("Confirm booking?(y/n)");
            String confirm=sc.next();
            if(confirm=="y"||confirm=="Y")
            {

    System.out.println("==============================Recipt===
====================");
                    System.out.println("Name: "+User[u][0]+"
"+User[u][1]);
                    System.out.println("Vehicle id: "+Data[n][0]);
                    System.out.println("model: "+Data[n][1]);
                    System.out.println("Reg_no: "+Data[n][2]);
                    System.out.println("Deposit: "+Data[n][3]);
                    System.out.println("Rate: "+Data[n][4]);
                    System.out.println("Pickup date: "+sdate);
                    System.out.println("Return date: "+rdate);
                    System.out.println("Licence number: "+lno);
                    System.out.println("Please pay the deposit
while picking up the vehicle from our center. It is mandatory to
keep your driving license in hand while picking up and driving
the vehicle."
                                    + "\n Thank you for renting car
using our software, we look forward to see you again. - group
4");
                    Data[n][5]="not Available";
            }


    }

    public static void Uregistration()
    {
            System.out.println("----------------NEW USER
REGISTRATION--------------");
                    System.out.println("Enter First name: ");
                    User[st_u][0]=sc.nextLine();
                    System.out.println("Enter Last name: ");
                    User[st_u][1]=sc.nextLine();
                    System.out.println("Enter email id: ");
                    User[st_u][2]=sc.nextLine();
                    System.out.println("Address line 1: ");
                    User[st_u][3]=sc.nextLine();
                    System.out.println("Area: ");
                    User[st_u][4]=sc.nextLine();
                    System.out.println("City: ");
```

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```java
                        User[st_u][5]=sc.nextLine();
                        System.out.println("Password: ");
                        User[st_u][6]=sc.nextLine();
                        st_u++;
                        Display();
        }

        public static void Menu()
        {
                System.out.println("----------------MENU-------------
--");
                System.out.println("1: Login\n2: Register");
                int a=sc.nextInt();
                switch(a)
                {
                case 1: Login();
                            break;
                case 2: Uregistration();
                            break;
                default: System.out.println("Error!! Check choice
again..");
                }
        }

        public static void InsertData()
        {
                System.out.println("----------------Enter new vehicle
data-------------");
                System.out.println("Vehicle id: ");
                Data[st_d][0]=sc.next();
                System.out.println("Vehicle model: ");
                Data[st_d][1]=sc.next();
                System.out.println("Vehicle Reg_no: ");
                Data[st_d][2]=sc.next();
                System.out.println("Deposit amount: ");
                Data[st_d][3]=sc.next();
                System.out.println("Rate: ");
                Data[st_d][4]=sc.next();
                Data[st_d][5]="Available";
                st_d++;
                Display();
        }

        public static void DeleteData()
        {
                System.out.println("-------------------Delete
Vehicle data------------");
                System.out.println("Enter id of vehicle whos data is
to be deleted: ");
                String id=sc.next();
                int r=1;
                for(int i=0; i<st_d; i++)
                {
                        if(id.equals(User[i][0]))
                        {
                                for(int j=0; j<7; j++)
                                {
                                        User[i][j]=null;
```

```java
                        }
                }
                else
                        r=0;
        }
        if(r==0)
        {
                System.out.println("Vehicle data not found please check if you have entered correct id... ");
                System.out.println("Do you wish to retry?(y/n)");
                String confirm=sc.next();
                if(confirm=="y"||confirm=="Y")
                        DeleteData();
        }
}

public static void Root()
{
        Display();
        System.out.println("1: Insert vehicle data \n2: Delete vehicle data \n3: Exit");
        int choice=sc.nextInt();
        switch(choice)
        {
        case 1: InsertData();
                        break;
        case 2: DeleteData();
                        break;
        case 3: break;
        default: System.out.println("Incorrect choice please try again!!");
                        Root();
        }
}

public static void Guest(String user,String pass)
{
        int r=1;
        for(int i=0; i<st_u; i++)
        {

    if(User[i][2].equals(user)&&User[i][5].equals(pass))
                {
                        System.out.println("Login succesful!!");
                        Display();
                        r=0;
                }
        }
        if(r==1)
        {
                System.out.println("ERROR: Incorrect username or password!!");
                System.out.println("Do you wish to retry?(y/n)");
                String confirm=sc.next();
                if(confirm=="y"||confirm=="Y")
```

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```java
                        Login();
            }
      }

      public static void Login()
      {
            System.out.println("--------------LOGIN------------
----");

            System.out.println("Email id: ");
            String user=sc.next();
            System.out.println("Password: ");
            String pass=sc.next();
            if(user.equals("root")&&pass.equals("root"))
                  Root();
            else
                  Guest(user,pass);

      }

      public static void main(String[] args) {
            Init();
            String choice;
            do {
                  Menu();
                  System.out.println("Do you wish to rent more
vehicles?");

                  choice=sc.next();
            }while(choice=="y"||choice=="Y");

      }

}
```

EXPLANATION ABOUT PROJECT:

This project starts with INit() called to initialize values that later goes on to menu(). Then you get a choice to select login or register and the program functions as per your choice. Register takes values from user and stores in array. Once logged in user gets shown all models available for renting and they

have to select one. Once selected
additional details are asked from user
and invoice is printed and program ends.

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OUTPUT SCREENSHOTS:

```
---------------MENU---------------
1: Login
2: Register
1
---------------LOGIN------------------
Email id:
manushpandya14@gmail.com
Password:
1234
Login succesful!!
Vehicles available for rent....
ID      MODEL   REG_NO   DEPOSIT        RATE    AVAILABLE
001     Toyota Altis    GJ01RH1234      500     30      Available
002     Honda Jazz      GJ01RH4231      600     50      Available
002     Tata Nano       GJ01RH5678      300     20      Available
Enter id of vehicle you wish to rent: |
```

```
Enter id of vehicle you wish to rent:
002
Enter date of renting:
18/10/2019
Enter date of return:
22/10/2019
Enter licence number:
20178636
Confirm booking?(y/n)
y
=============================Recipt=========================
Name: Manush Pandya
Vehicle id:2
model: Honda Jazz
Reg_no: GJ01RH4231
Deposit: 600
Rate: 50
Pickup date: 18/10/2019
Return date: 22/10/2019
Licence number: 20178636
Please pay the deposit while picking up the vehicle from our center. It is mandatory to keep your driving license in hand while picking up and driving the vehicle.
 Thank you for renting car using our software, we look forward to see you again. - group 4
Do you wish to rent more vehicles?
n
```

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<u>REFERENCES</u>:

1. https://www.w3schools.com/java/

2. https://www.tutorialspoint.com/java/index.htm

3. https://www.geeksforgeeks.org/java-tutorials/

<u>CONCLUSION</u>:

Thus we conclude that we have created a car rental system using concepts of OOP using java.

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