19BCE1862

P.YESHWANTH

11TH APRIL 2021

**JAVA DIGITAL ASSIGNMENT 1**

**LINK FOR EXECUTION RECORDING:**

**YOUTUBE LINK:** [**https://youtu.be/RXhkwHzhdFE**](https://youtu.be/RXhkwHzhdFE)

**GOOGLE DRIVE LINK:**

**https://drive.google.com/drive/folders/1D\_B8Al\_yo1Sm-I5LXTKHhn\_8\_Vo3wiLu?usp=sharing**

**CODE:**

package gassupplier;

import java.util.\*;

import java.time.\*;

public interface Gas\_agency {

final static String Agency\_name="BHARAT GAS AGENCIES",agency\_code="BGAIL",phone\_number="+044-4432 4327";

final LocalDate d=LocalDate.now();

default public void display()

{

System.out.print("Gas Agency code:"+agency\_code+"\tDate of Invoice:"+d+"\nGas Agency name:"+Agency\_name+"\tGas Agency Phone number:"+phone\_number+"\n");

}

}

**package** CUSTOMERS;

**import** java.util.\*;

**import** gassupplier.Gas\_agency;

**import** java.time.LocalDate;

**class** Customer {

**public** String name,mobile\_number;

**public** String street;

**public** String area;

**public** **int** pincode;

}

**public** **class** Gas\_connection **extends** Customer **implements** Gas\_agency{

**public** **static** **int** *connection\_number\_gen*=123;

**public** **int** connection\_number;

**public** **int** number\_of\_cylinders;

**public** LocalDate last\_booking\_d;

**public** Gas\_connection(){

Scanner si=**new** Scanner(System.***in***);

System.***out***.print("ENTER THE CUSTOMER NAME:");

name=si.next();

System.***out***.print("ENTER THE CUSTOMER MOBILE NUMBER:");

mobile\_number=si.next();

System.***out***.print("ENTER THE CUSTOMER RESIDENCE DETAILS:\nSTREET:");

street=si.next();

System.***out***.print("AREA:");

area=si.next();

System.***out***.print("PINCODE:");

pincode=si.nextInt();

last\_booking\_d=LocalDate.*now*();

System.***out***.print("ENTER THE NUMBER OF CYLINDERS:\n\t '1' FOR SINGLE CYLINDER HOLDER AND '2' FOR TWO CYLINDER HOLDER:");

number\_of\_cylinders=si.nextInt();

**this**.connection\_number=*connection\_number\_gen*++;

}

**public** **void** con\_display()

{

System.***out***.print("Gas Connection number:"+**this**.connection\_number+"\tCustomer Name:"+name+"\nLast Booking Date:"+last\_booking\_d+"\tcustomer mobile number:"+mobile\_number+"\n");

}

}

package gasbooking;

import java.time.LocalDate;

import java.time.Period;

import java.util.Random;

import java.util.Scanner;

import CUSTOMERS.Gas\_connection;

public class Booking{

public int connection\_number;

public int number\_of\_cylinders;

public LocalDate last\_booking\_d;

public LocalDate booking\_d;

public int otp;

public double amount;

public char status;

public Booking()

{

Scanner si=new Scanner(System.in);

System.out.print("ENTER YOUR CONNECTION NUMBER FOR BOOKING CYLINDER:");

connection\_number=si.nextInt();

System.out.print("ENTER THE BOOKING DATE(year-month-date):");

String temp=si.next();

booking\_d=LocalDate.parse(temp);

Random r=new Random();

otp=10000+r.nextInt(1000);

System.out.print("THE OTP FOR YOUR BOOKING IS: "+otp);

amount=900;

//CHANGING BOOKING STATUS WILL BE DONE IN MAIN FUNCTION

}

public void booking\_disp()

{

System.out.print("CONNECTION NUMBER: "+connection\_number+"\tNUMBER OF CYLINDERS: "+number\_of\_cylinders+"\nLAST BOOKING DATE: "+last\_booking\_d+"\tCURRENT BOOKING DATE:"+booking\_d+"\nOTP: "+otp+" AMOUNT: "+amount+" STATUS: "+status+" \n\n");

}

public int bookcheck(Gas\_connection[] gc,int c)

{

int i;

int flag=0;

for(i=0;i<c;i++)

{

if(gc[i].connection\_number==this.connection\_number)

{

System.out.print("\nTHIS CONNECTION NUMBER: "+this.connection\_number);

this.number\_of\_cylinders=gc[i].number\_of\_cylinders;

this.last\_booking\_d=gc[i].last\_booking\_d;

flag++;

break;

}

}

if(flag==0)

System.out.print("\nTHE CONNECTION NUMBER YOU HAVE ENTERED IS INVALID\n");

else

{

long days = Period.between(this.last\_booking\_d,this.booking\_d).getDays()+(Period.between(this.last\_booking\_d,this.booking\_d).getMonths()\*30)+(Period.between(this.last\_booking\_d,this.booking\_d).getYears()\*365);

System.out.print("\nTHE NUMBER OF DAYS BETWEEN CURRENT BOOKING DATE AND LAST BOOKING DATE IS "+days+"\n");

if((days>=30&&this.number\_of\_cylinders==1)||(days>=50&&this.number\_of\_cylinders==2))

{

this.status='B';

gc[i].last\_booking\_d=this.booking\_d;

System.out.print("\nCONGRATS CUSTOMER YOUR CYLINDER HAS BEEN BOOKED.PLEASE WAIT FOR DELIVERY\n");

return 1;

}

else

System.out.print("THE BOOKING CANNOT BE DONE AS MINIMUM NUMBER OF DAYS FROM LAST BOOKING IS NOT FOLLOWED");

}

return 0;

}//bookcheck fn closing

}

package gasbooking;

import java.util.\*;

import CUSTOMERS.\*;

import java.time.\*;

import gassupplier.\*;

public class delivery{

public int connection\_number;

public LocalDate booking\_d;

public int otp;

public LocalDate delivery\_d;

public String delivery\_pname;

public char status;

public String del\_pno;

public delivery()

{

Scanner si=new Scanner(System.in);

System.out.print("ENTER THE DATE OF DELIVERY(year-month-day):");

String s=si.next();

delivery\_d=LocalDate.parse(s);

System.out.print("ENTER THE DELIVERY PERSON NAME:");

delivery\_pname=si.next();

System.out.print("ENTER THE DELIVERY PERSON PHONE NUMBER:");

del\_pno=si.next();

System.out.print("ENTER THE CONNECTION NUMBER FOR YOUR BOOKING:");

connection\_number=si.nextInt();

}

public void delperson\_display()

{

System.out.print("Delivery Person Name:"+this.delivery\_pname+"\tDelivery Person Phone Number:"+this.del\_pno+"\nDelivered Date:"+this.delivery\_d);

}

}

import java.time.LocalDate;

import java.time.Period;

import java.util.\*;

import CUSTOMERS.Gas\_connection;

import gassupplier.Gas\_agency;

import gasbooking.\*;

@SuppressWarnings("unused")

public class runningcode {

public static void main(String[] args) {

Gas\_connection gc[]=new Gas\_connection[20];//for customer DB

int c=0;//counter for no of customers registered for gas connection

Booking book[]=new Booking[20];//for booking DB

int bc=0;//counter for booking

delivery d[]=new delivery[20];//for delivery DB

int dc=0;//counter for delivery

int ch;

do {

System.out.print("WELCOME TO GAS BOOKING AGENCY:\n");

System.out.print("THE OPTIONS ARE:\n1)CREATE A CUSTOMER\n2)BOOK A CYLINDER\n3)DELIVER CYLINDER\n4)STATISTICAL DATA\n\nENTER YOUR CHOICE:");

Scanner si=new Scanner(System.in);

int choice=si.nextInt();

if(choice==1)

{

gc[c]=new Gas\_connection();

gc[c].con\_display();

c++;

System.out.print("\nNEW CUSTOMER HAS BEEN CREATED\n");

System.out.print("\n\nCUSOTMERS ALREADY CREATED:\n\n");

int j;

for(j=0;j<c;j++)

{

gc[j].con\_display();

}

}

else if(choice==2)

{

int i;

book[bc]=new Booking();

int success=book[bc].bookcheck(gc,c);

if(success==1)//booking done successfully

{

bc++;

}

System.out.print("\n\nBOOKINGS DONE:\n\n");

for(i=0;i<bc;i++)

{

book[i].booking\_disp();

}

}

else if(choice==3)

{

//cylinder delivery part

d[dc]=new delivery();

int flag=0;//FLAG FOR ONLY BOOKING STATUS B OR P NOT FOUND IN THE BOOKING DB

int i;

int flag2=0;//FLAG FOR CONNECTION NUMBER MATCH

for(i=0;i<bc;i++)

if(book[i].connection\_number==d[dc].connection\_number)

{

flag2++;

if(book[i].status=='B'||book[i].status=='P')

{

d[dc].booking\_d=book[i].booking\_d;

d[dc].status=book[i].status;

flag++;

break;

}

}

if(flag!=0)

{

System.out.print("PLEASE ENTER YOUR OTP TO CONFRIM YOUR DELIVERY:");

d[dc].otp=si.nextInt();

int flag1=0;//flag for OTP MATCH

if(d[dc].otp==book[i].otp)

{

flag1++;

System.out.print("\n\nYOUR CYLINDER IS DELIVERED.SEE YOU NEXT TIME\n\n");

book[i].status='D';

d[dc].status='D';

long days = Period.between(book[i].booking\_d,d[dc].delivery\_d).getDays()+(Period.between(book[i].booking\_d,d[dc].delivery\_d).getMonths()\*30)+(Period.between(book[i].booking\_d,d[dc].delivery\_d).getYears()\*365);

System.out.print("\nTHE NUMBER OF DAYS BETWEEN BOOKING AND DELIVERY DATE IS:"+days+"\n");

if(days>7)

{

System.out.print("\n\nTHE NUMBER OF DAYS BETWEEN DELIVERY AND BOOKING IS GREATER THAN 7 DAYS.SO 5% is refunded and it is reduced in the amount\n\n");

book[i].amount-=0.05\*book[i].amount;//5 percent is reduced from their booking

}

dc++;

}

if(flag1==0)

{

System.out.print("\n\nTHE OTP ENTERED IS INVALID.SO THE BOOKING IS CANCELLED.SO PLEASE BOOK AGAIN\n\n");

book[i].status='C';

}

}

else

System.out.print("\n\nYOUR BOOKING IS CANCELLED.PLEASE BOOK AGAIN\n\n");

if(flag2==0)

{

System.out.print("THE CONNECTION NUMBER YOU HAVE ENTERED IS INVALID.PLEASE TRY AGAIN");

}

if(dc==0)

System.out.print("\nTHERE ARE NO DELIEVRIES DONE\n");

else

for(int k=0;k<dc;k++)

{

System.out.print("CONNECTION NUMBER:"+d[k].connection\_number+"\tBOOKING DATE:"+d[k].booking\_d+"\nOTP:"+d[k].otp+"\tDELIVERY DATE:"+d[k].delivery\_d+"\nDELIVERY PERSON NAME:"+d[k].delivery\_pname+"\tSTATUS:"+d[k].status+"\n\n");

}

}//closing of choice==3

else if(choice==4)//statistical data

{

System.out.print("\nOPTIONS:\n\n1.\tDisplay how many cylinders are delivered on a particular area in a given month.");

System.out.print("\n2.\tHow many cylinders are delivered late in a month\n3.\tDisplay the name and mobile number, gas connection number who got single cylinder connection.");

System.out.print("\n4.\tDisplay the customer name address for which particular delivery person is delivered the cylinder.");

System.out.print("\n5.\tPrint the report.");

System.out.print("\n6.\tInvoice Generation.\n\nENTER YOUR CHOICE:");

int cho=si.nextInt();

if(cho==1)

{

int cyl\_count=0;

System.out.print("ENTER THE AREA:");

String ar=si.next();

System.out.print("ENTER THE MONTH:");

String mon=si.next();

for(int i=0;i<bc;i++)//this runs for Booking DB

{

for(int j=0;j<c;j++)//this runs for customer DB

if(book[i].connection\_number==gc[j].connection\_number&&(book[i].status=='D'))

{

if(Objects.equals(ar,gc[j].area))

{

for(int k=0;k<dc;k++)

{

if(Objects.equals(d[k].delivery\_d.getMonth().toString().toLowerCase(),mon.toLowerCase()))//month found

cyl\_count++;

}

}

}

}

System.out.print("THE NUMBER OF CYLINDERS DELIVERED IN "+ar+" AND IN THE MONTH "+mon+" IS:"+cyl\_count);

}//if(cho==1)

else if(cho==2)

{

int late\_count=0;

System.out.print("ENTER THE MONTH:");

String mon=si.next();

for(int i=0;i<bc;i++)

if(book[i].amount<900.00&&book[i].status=='D')//delivered and delivered late

{

for(int j=0;j<dc;j++)

if(d[j].connection\_number==book[i].connection\_number)//connection number matched so that delivery month can be taken

if(Objects.equals(d[j].delivery\_d.getMonth().toString().toLowerCase(),mon.toLowerCase()))//months matched

late\_count++;

}

System.out.print("\nTHE NUMBER OF CYLINDERS DELIVERED LATE IN THE MONTH "+mon+" IS:"+late\_count+"\n");

}//if(cho==2)

else if(cho==3)

{

System.out.print("\nTHE CUSTOMER DETAILS THAT HAS A SINGLE CYLINDER CONNECTION:\n\n");

for(int i=0;i<c;i++)

if(gc[i].number\_of\_cylinders==1)

{

System.out.print("\nGas Connection number:"+gc[i].connection\_number+"\tCustomer Name:"+gc[i].name+"\tcustomer mobile number:"+gc[i].mobile\_number+"\n\n");

}

}

else if(cho==4)

{

System.out.print("ENTER THE DELIVERY PERSON NAME:");

String dname=si.next();

for(int i=0;i<dc;i++)

{

if(Objects.equals(d[i].delivery\_pname,dname))

{

int conno=d[i].connection\_number;

for(int j=0;j<c;j++)

if(gc[j].connection\_number==conno)//connection number of customer found

System.out.print("NAME:"+gc[j].name+"\tADDRESS:"+gc[j].street+","+gc[j].area+","+gc[j].pincode+"\n");

}

}

}//cho==4

else if(cho==5)

{

System.out.print("\nENTER THE DATE OF REPORT(year-month-day):");

String S=si.next();

LocalDate pd=LocalDate.parse(S);

for(int i=0;i<bc;i++)

{

long days = Period.between(book[i].booking\_d,pd).getDays()+(Period.between(book[i].booking\_d,pd).getMonths()\*30)+(Period.between(book[i].booking\_d,pd).getYears()\*365);

if(days>7&&book[i].status=='B')

{

book[i].status='P';

}

}

System.out.print("\nTHE REPORTS ARE:\n");

System.out.print("\nDELIVERED BOOKING REPORT:\n");

int flag=0;

for(int i=0;i<bc;i++)

if(book[i].status=='D')

{

book[i].booking\_disp();

flag++;

}

if(flag==0)

System.out.print("\nTHERE ARE NO BOOKING WITH STATUS AS 'D'\n");

System.out.print("\nPENDING BOOKING REPORT:\n");

flag=0;

for(int i=0;i<bc;i++)

if(book[i].status=='P')

{

book[i].booking\_disp();

flag++;

}

if(flag==0)

System.out.print("\nTHERE ARE NO BOOKING WITH STATUS AS 'P'\n");

flag=0;

System.out.print("\nCANCELLED BOOKING REPORT:\n");

for(int i=0;i<bc;i++)

if(book[i].status=='C')

{

book[i].booking\_disp();

flag++;

}

if(flag==0)

System.out.print("\nTHERE ARE NO BOOKING WITH STATUS AS 'C'\n");

System.out.print("\nDELIVERY PERSON DATABASE:\n");

flag=0;

for(int i=0;i<dc;i++)

{

d[i].delperson\_display();

System.out.print("\n\n");

flag++;

}

if(flag==0)

System.out.print("\nTHERE ARE NO DELIVERIES DONE TILL NOW\n");

}//cho==5

else if(cho==6)

{

System.out.print("\nENTER THE CONNECTION NUMBER FOR GENERATING THE DELIVERY INVOICE:");

int del\_con=si.nextInt();

int flag=0;

System.out.print("\t\t\t\t\tINVOICE\n");

for(int j=0;j<bc;j++)

if(book[j].connection\_number==del\_con&&book[j].status=='D')

{

flag++;

System.out.print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

for(int i=0;i<c;i++)

{

if(gc[i].connection\_number==del\_con)

{

gc[i].display();

gc[i].con\_display();

}

}

System.out.print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

for(int i=0;i<bc;i++)

{

if(book[i].connection\_number==del\_con&&book[i].status=='D')

{

System.out.print("\nAmount:900.00"+"\nRefund:"+(book[i].amount-900.00)+"\nTotal Amount:"+book[i].amount+"\n");

}

}

System.out.print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

for(int i=0;i<dc;i++)

if(d[i].connection\_number==del\_con)

d[i].delperson\_display();

System.out.print("\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");

}

if(flag==0)

System.out.print("\n\nTHE CONNECTION NUMBER ENTERED DOESNT HAVE DELIVERY DONE.PLEASE ENTER CORRECTLY\n\n");

}//cho==6

}

System.out.print("\nDO YOU WANT TO CONTINUE: PRESS 1 TO CONTINUE\n ");

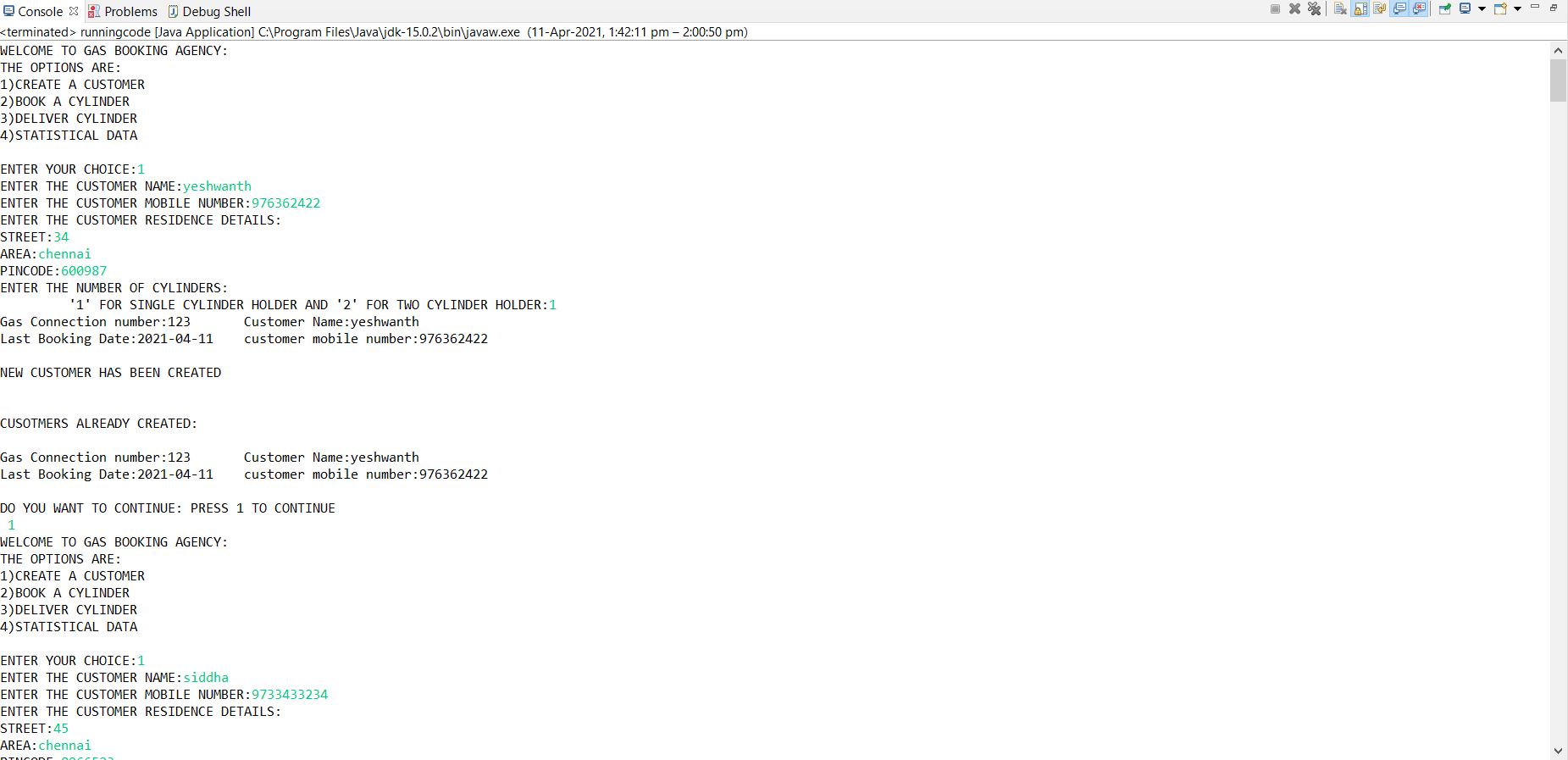
ch=si.nextInt();

}while(ch==1);

}

}

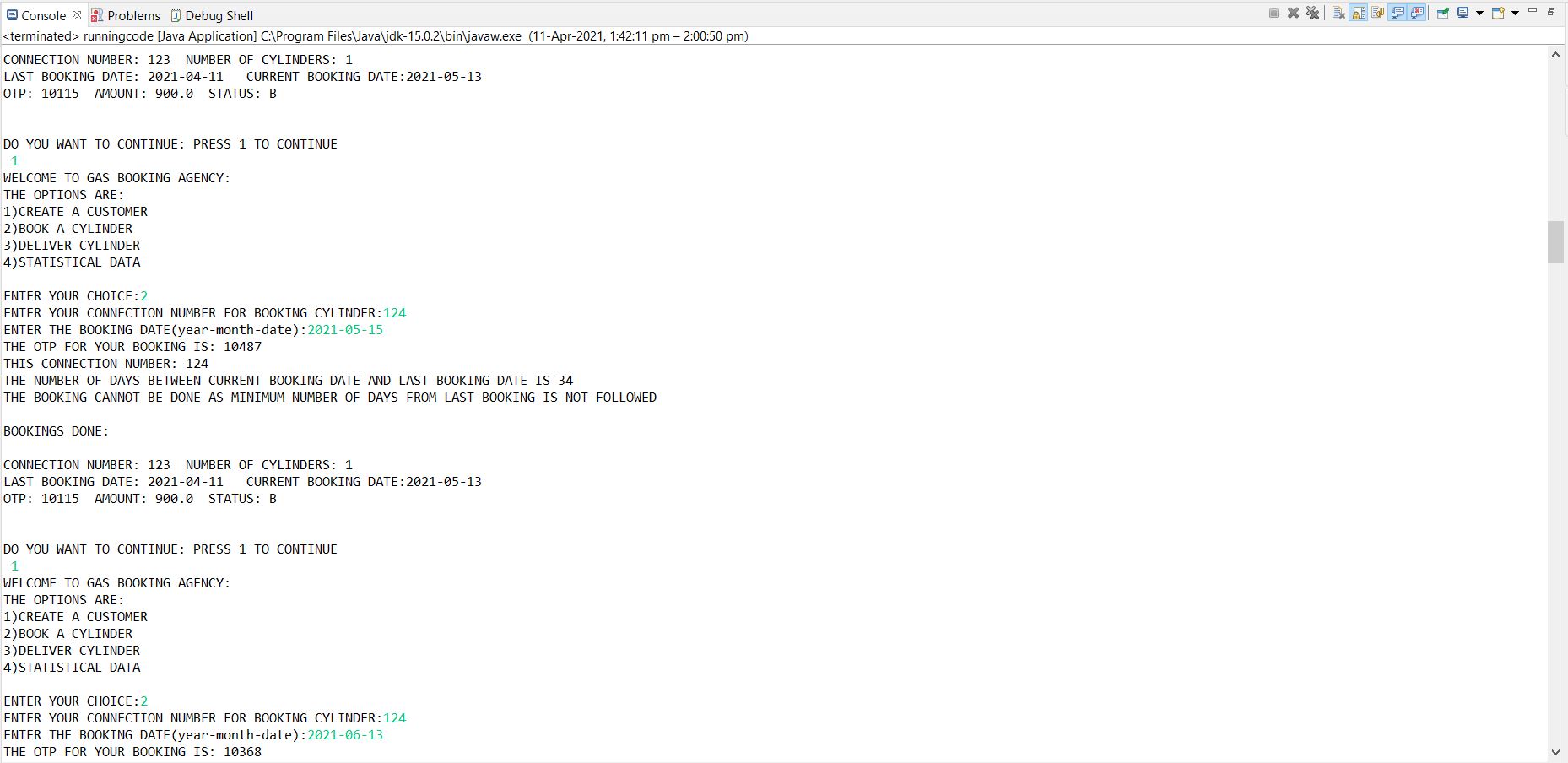
OUTPUT:



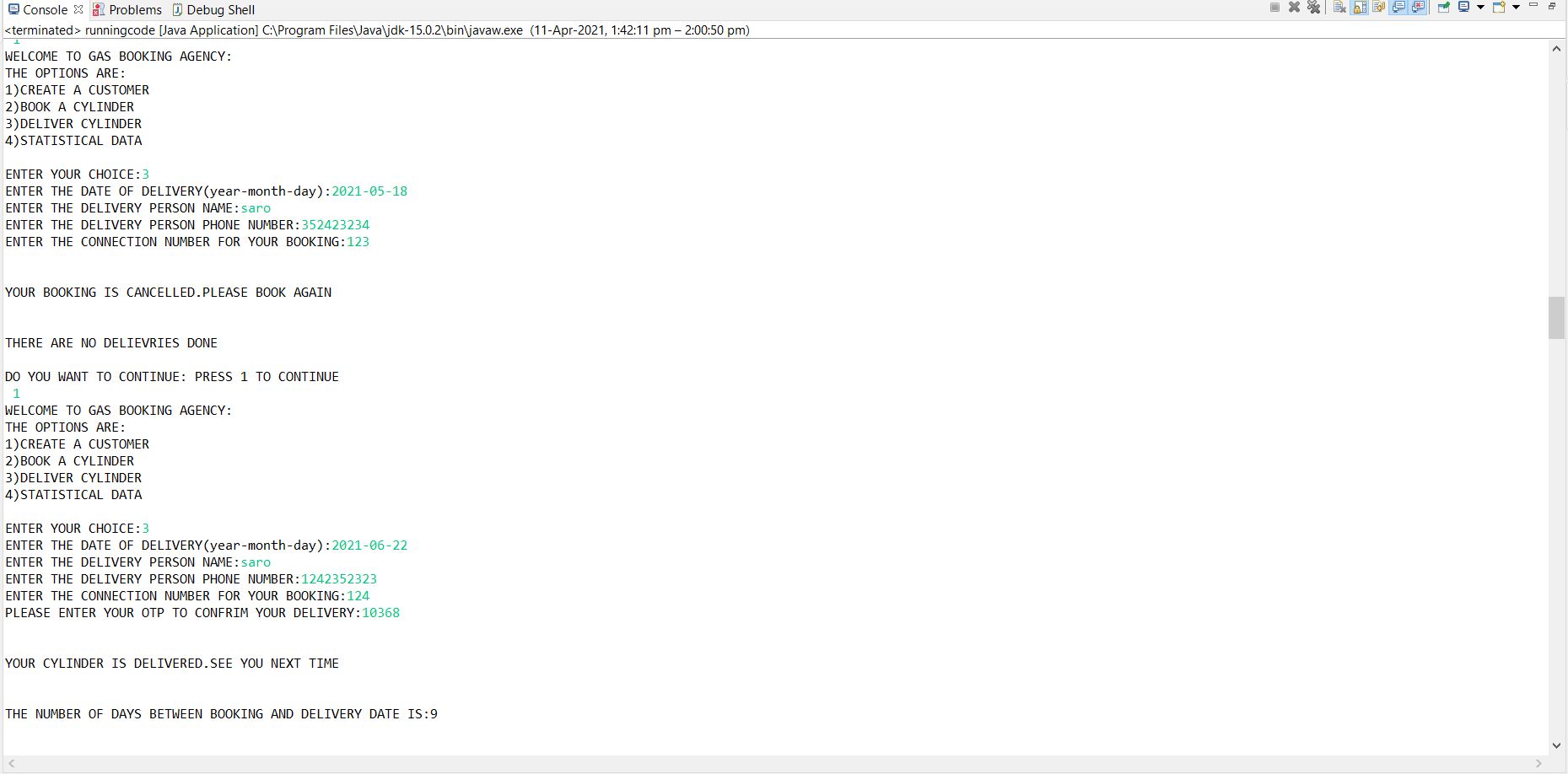


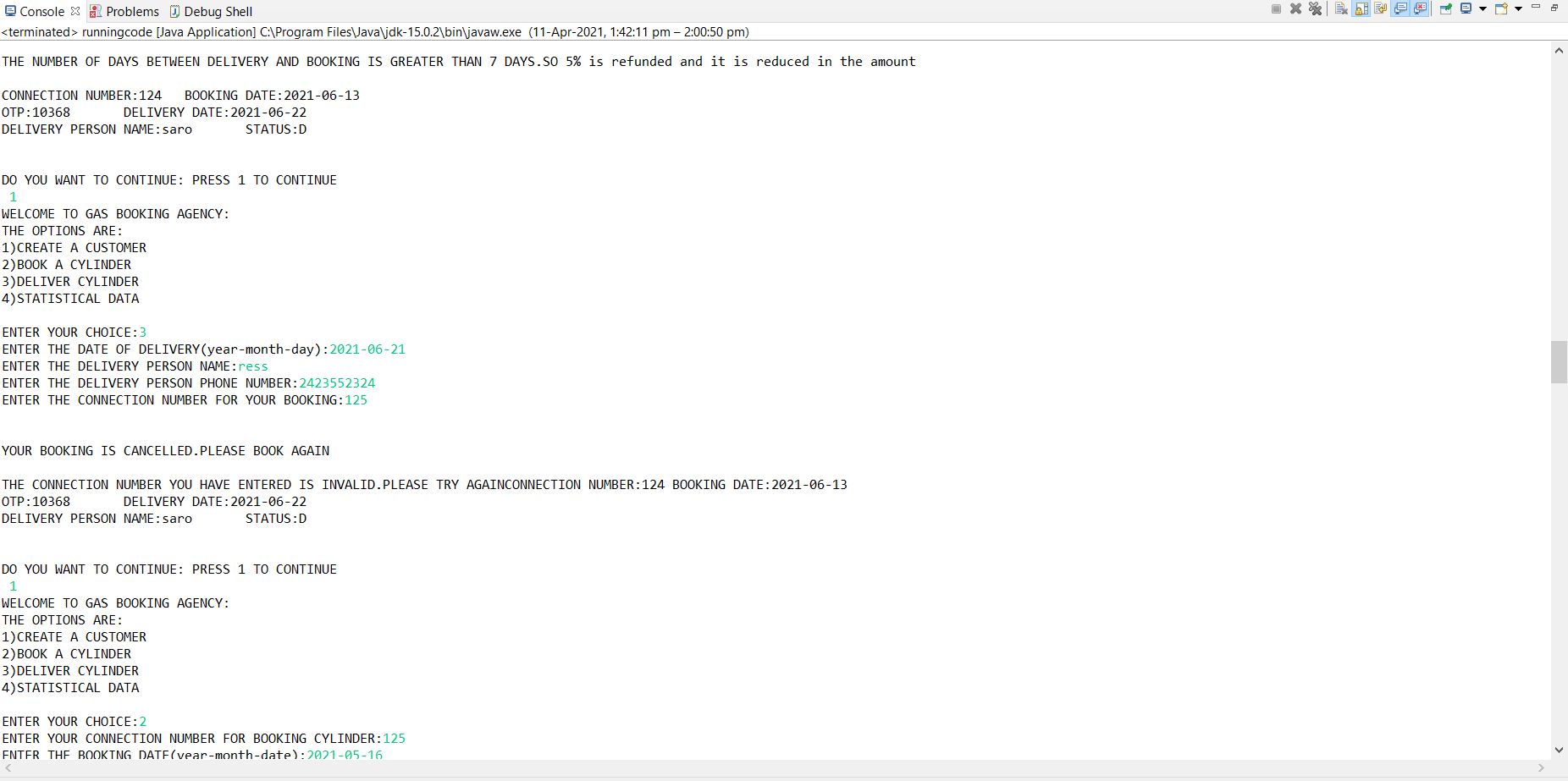


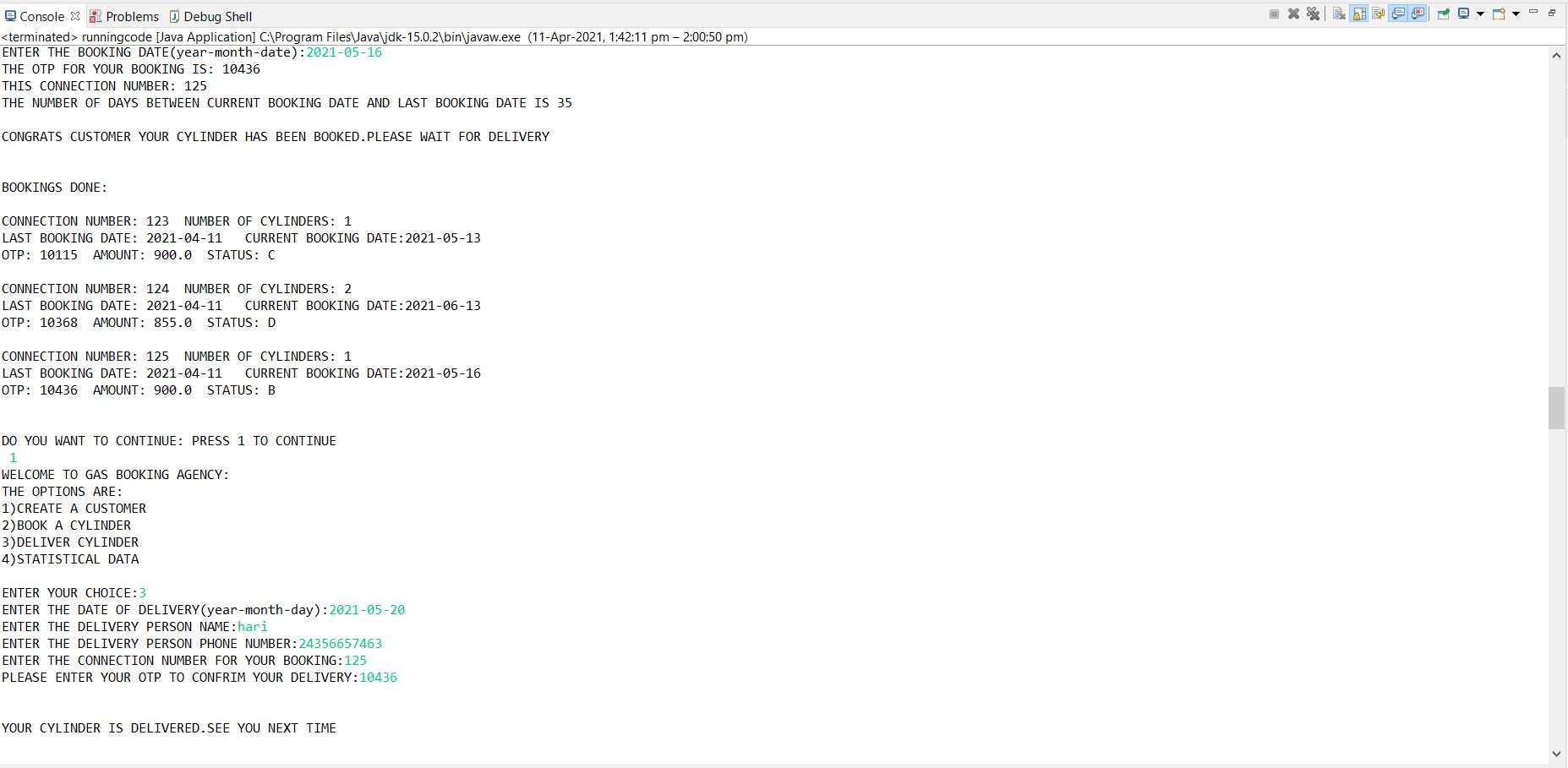




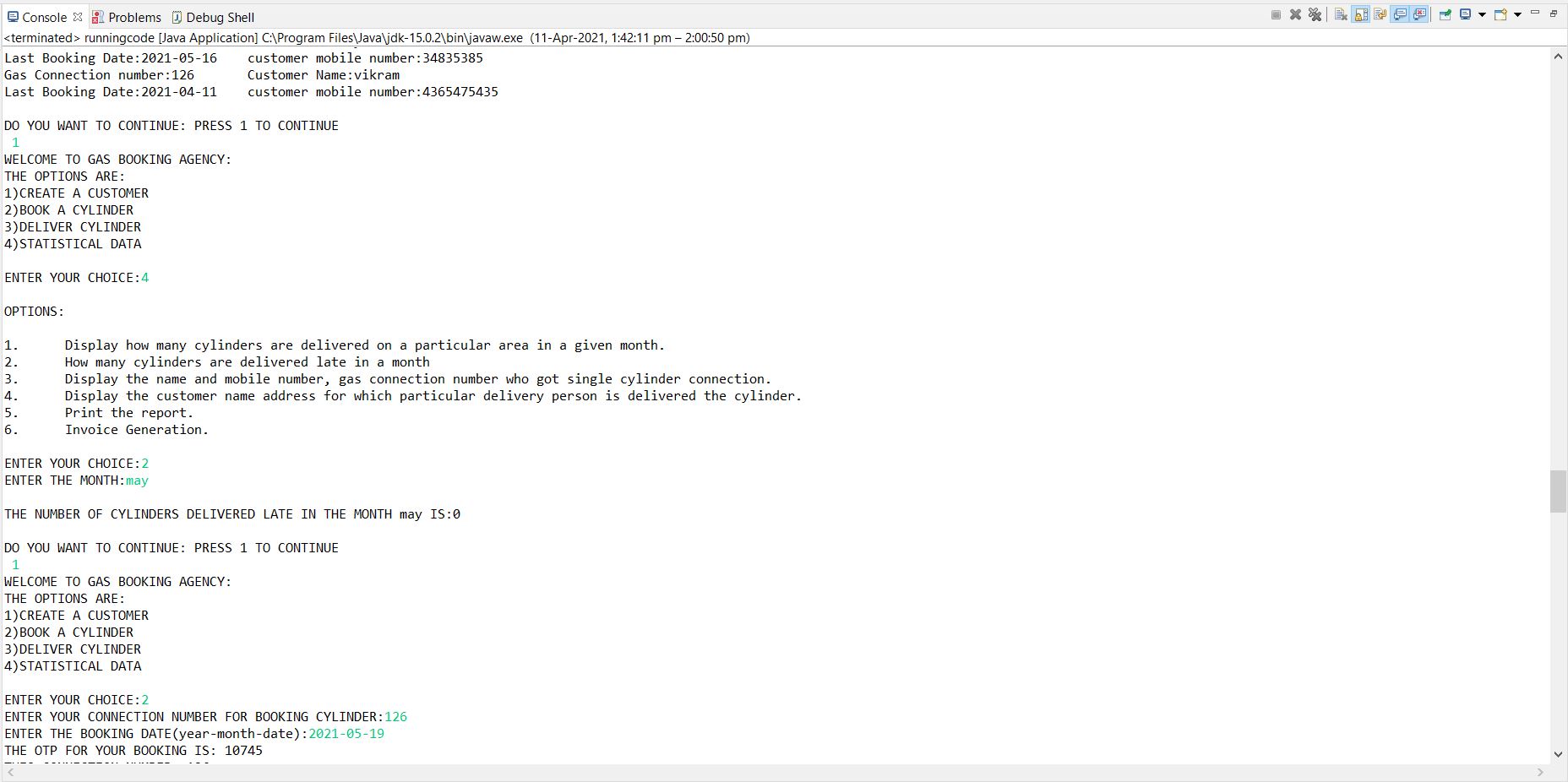


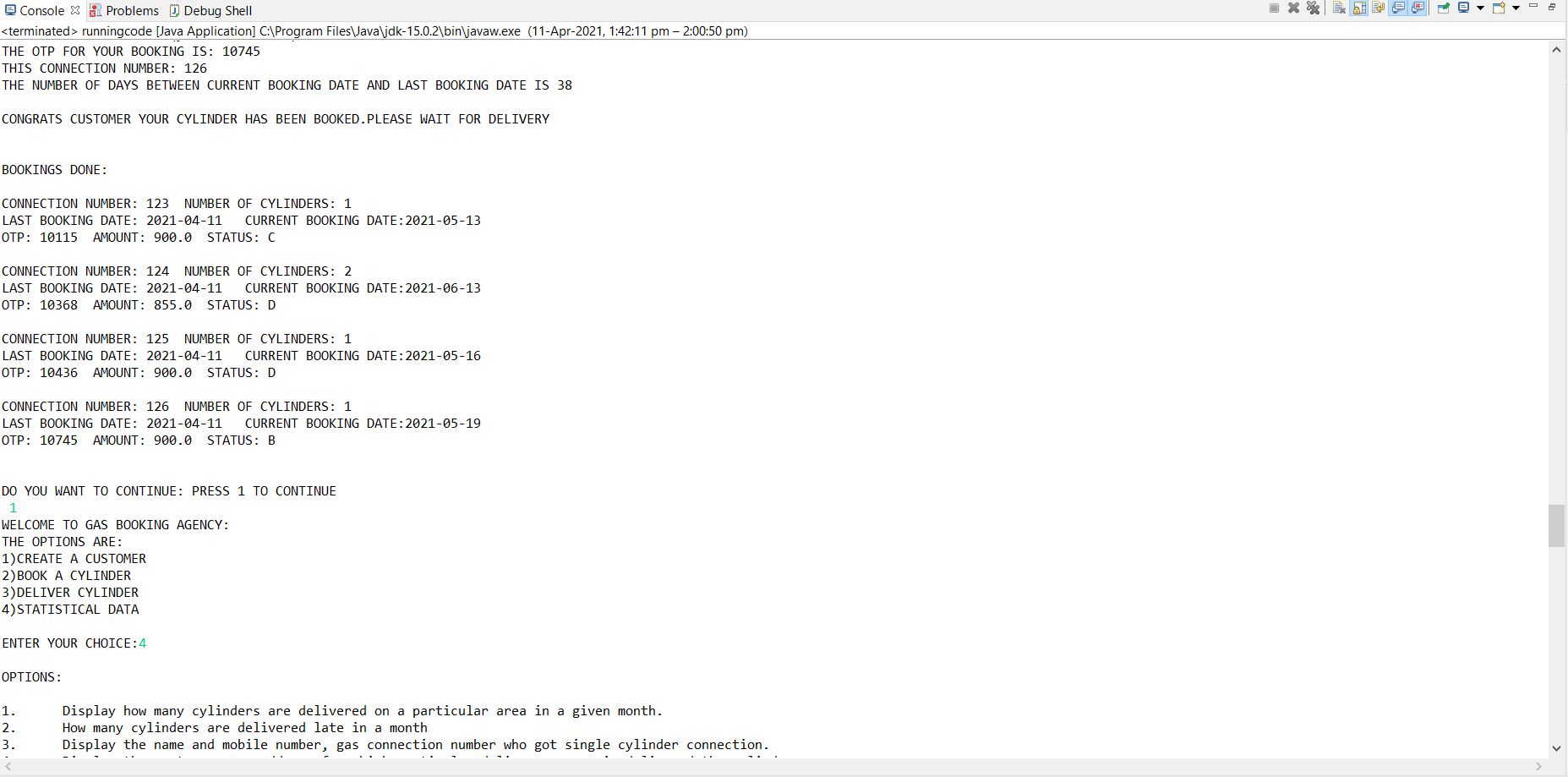


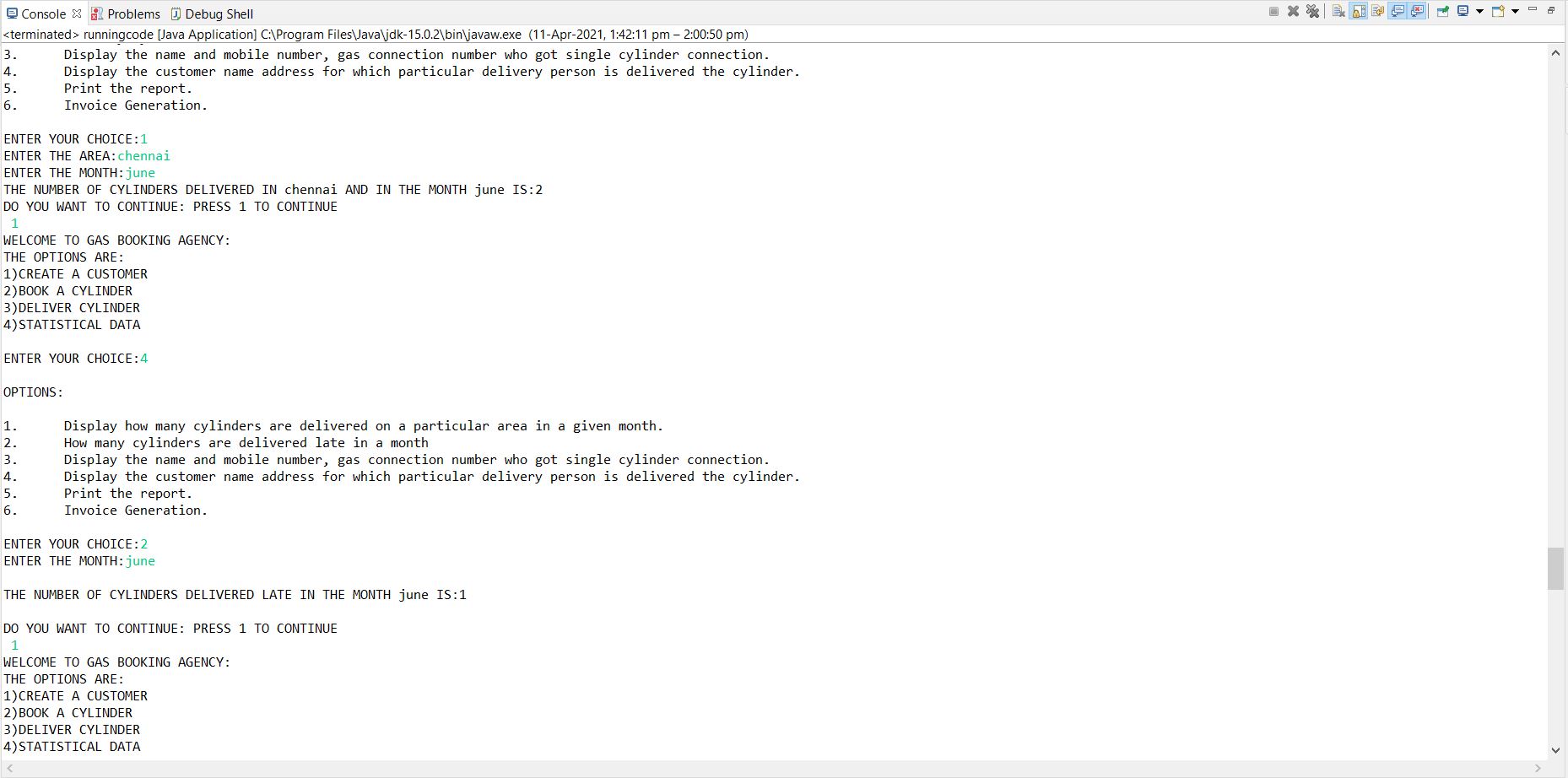


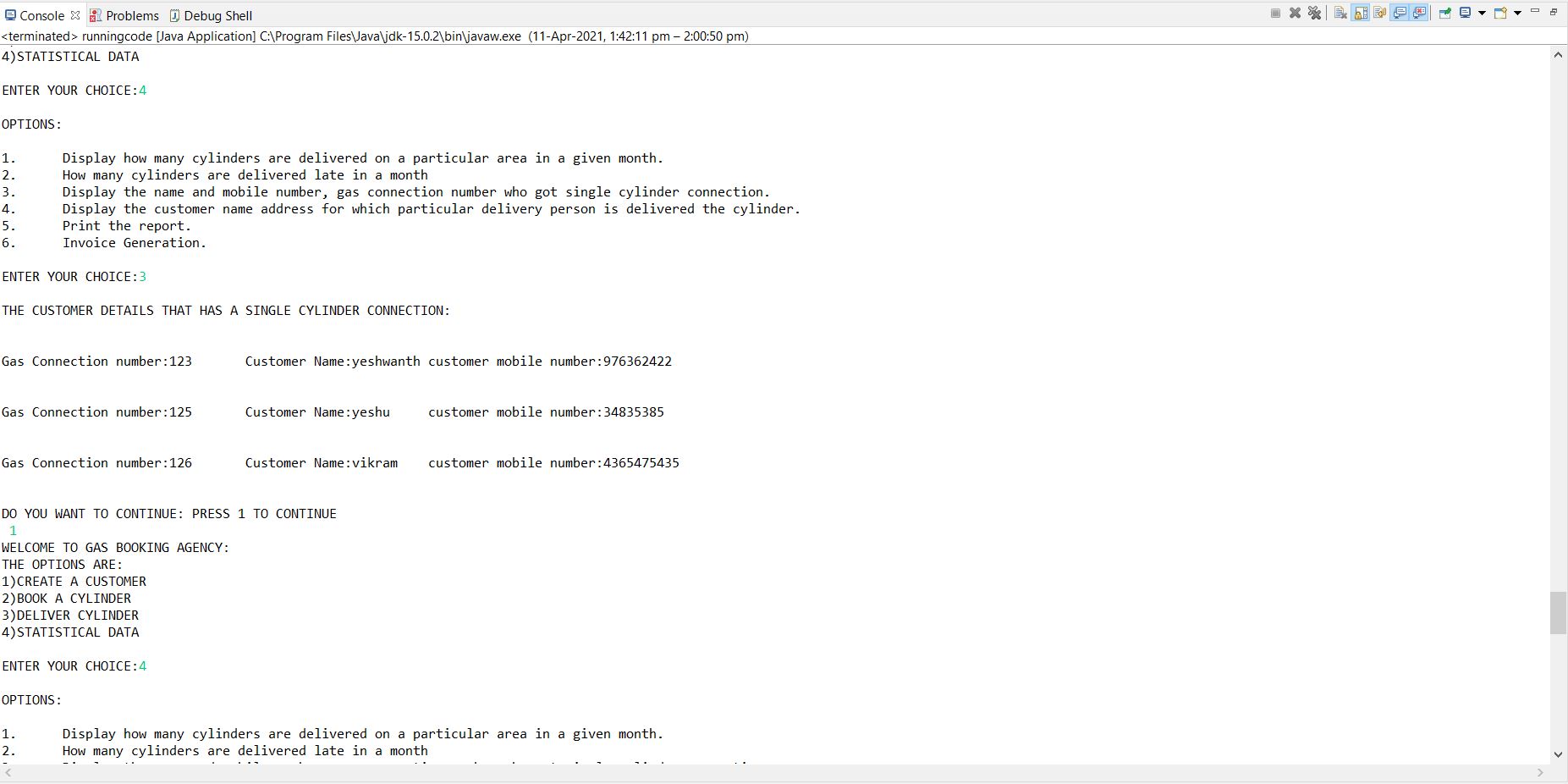


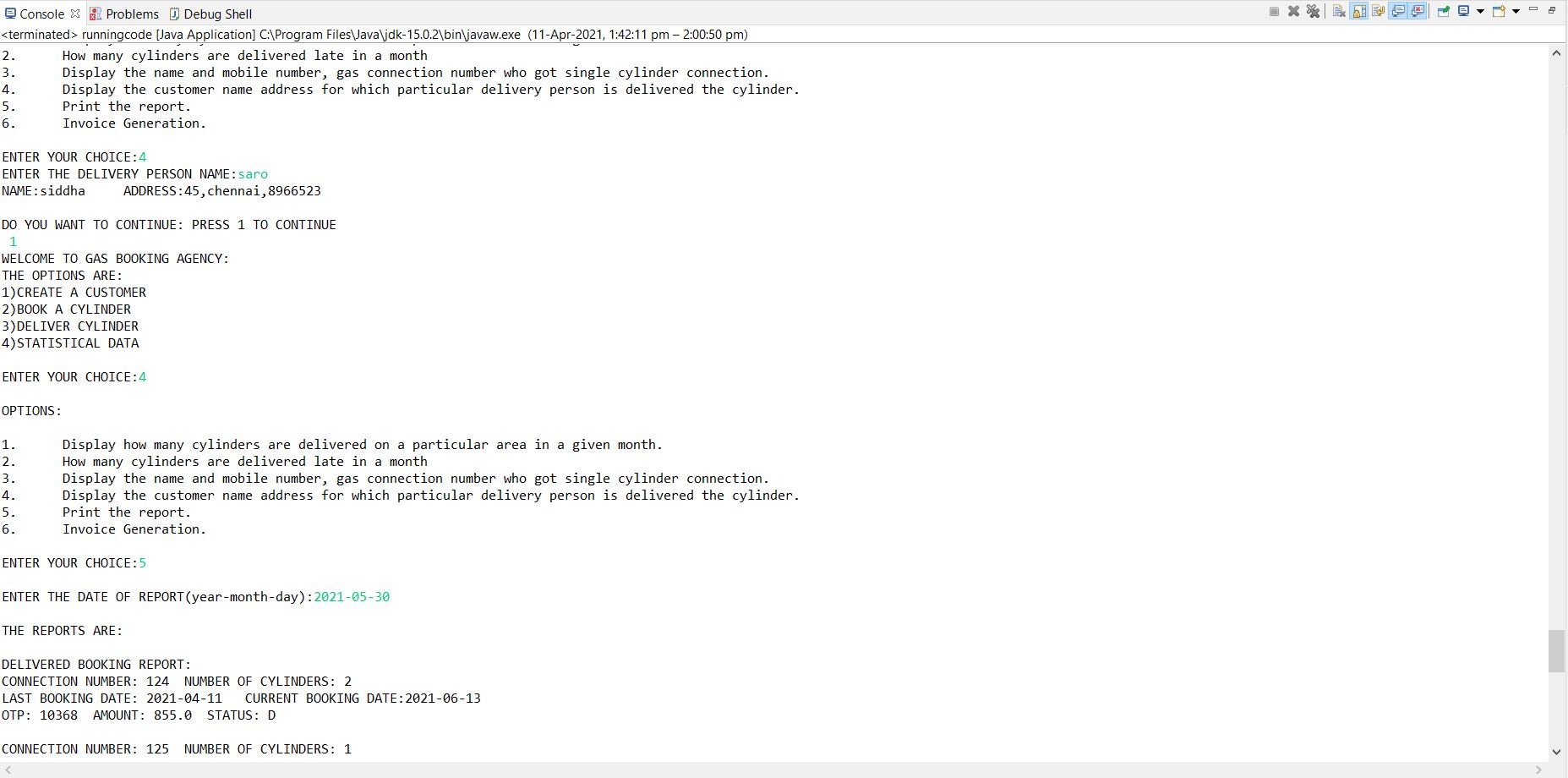


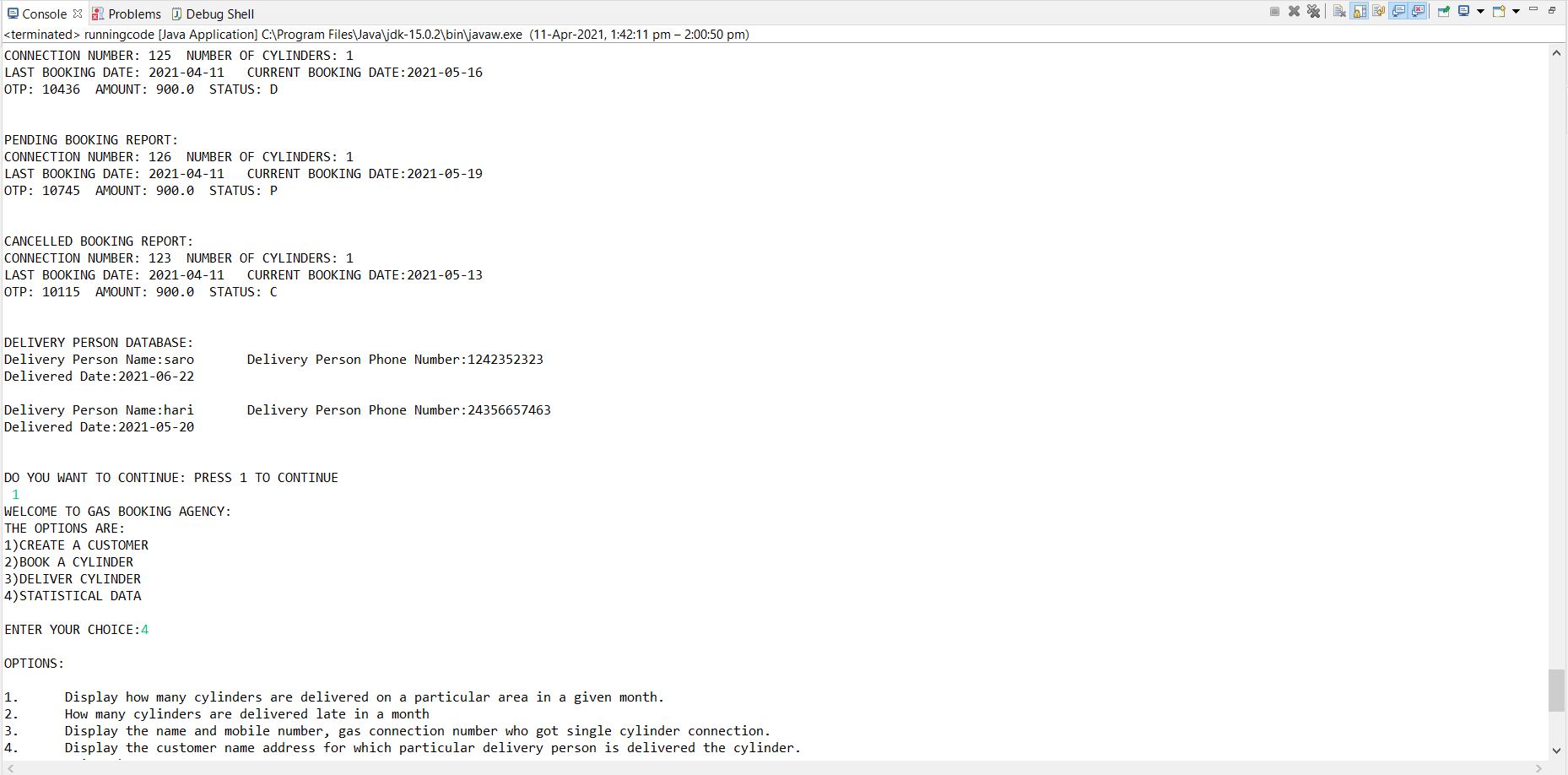














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