Ex. No. 11 **MINI PROJECT**
Date:

Problem:

Develop a mini project for any application using Java concepts.

Aim:

To develop a Bus Reservation System as a mini project using java concepts

Algorithm:

Step 1: Start
Step 2: Create classes that are needed for Bus Reservation System
Step 3: Get the options for ticket booking and perform the operations.
Step 4: Display the results.
Step 5: Stop

Program:

Booking.java

```
package busResv;
import java.util.*;
import java.text.ParseException;
import java.text.SimpleDateFormat;
public class Booking {
	String passengerName;
	int busNo;
	Date date;

	Booking(){
		Scanner scanner = new Scanner(System.in);
		System.out.println("Enter name of passenger: ");
		passengerName = scanner.next();
		System.out.println("Enter bus no: ");
		busNo = scanner.nextInt();
		System.out.println("Enter date dd-mm-yyyy");
		String dateInput = scanner.next();
		SimpleDateFormat dateFormat = new SimpleDateFormat("dd-MM-yyyy");

		try {
			date = dateFormat.parse(dateInput);
		} catch (ParseException e) {

			e.printStackTrace();
		}

	}
```

```
	public boolean isAvailable(ArrayList<Booking> bookings, ArrayList<Bus> buses) {
		int capacity = 0;
		for(Bus bus:buses) {
			if(bus.getBusNo() == busNo)
				capacity = bus.getCapacity();
		}

		int booked = 0;
		for(Booking b:bookings) {
			if(b.busNo == busNo && b.date.equals(date)) {
				booked++;
			}
		}

		return booked<capacity?true:false;

	}
}
```

Bus.java

```
package busResv;

public class Bus {
	private int busNo;
	private boolean ac;
	private int capacity;

	Bus(int no,boolean ac,int cap){
		this.busNo = no;
		this.ac = ac;
		this.capacity = cap;
	}

	public int getBusNo(){
		return busNo;
	}

	public boolean isAc(){
		return ac;
	}
	public int getCapacity()
	{
		return capacity;
	}

	public void setAc(boolean val) {
		ac = val;
	}

	public void setCapacity(int cap) {
```

```
		capacity = cap;
	}

	public void displayBusInfo(){
		System.out.println("Bus No:" + busNo + " Ac:" + ac + " Total Capacity: " + capacity);
	}
}
```

BusDemo.java

```
package busResv;

import java.util.Scanner;
import java.util.ArrayList;

public class BusDemo {

	public static void main(String[] args) {


		ArrayList<Bus> buses = new ArrayList<Bus>();
		ArrayList<Booking> bookings = new ArrayList<Booking>();

		buses.add(new Bus(1,true,2));
		buses.add(new Bus(2,false,50));
		buses.add(new Bus(3,true,48));

		int userOpt = 1;
		Scanner scanner = new Scanner(System.in);

		for(Bus b:buses) {
			b.displayBusInfo();
		}

		while(userOpt==1) {
			System.out.println("Enter 1 to Book and 2 to exit");
			userOpt = scanner.nextInt();
			if(userOpt == 1) {
				Booking booking = new Booking();
				if(booking.isAvailable(bookings,buses)) {
					bookings.add(booking);
					System.out.println("Your booking is confirmed");
				}
				else
					System.out.println("Sorry. Bus is full. Try another bus or date.");
			}
		}
	}

}
```

Result:

Thus the mini project for Bus Reservation System using java concepts was done and executed successfully.