//_____**Bill file**_____

```
package assignment4;

import java.util.Date;

public class Bill {

        private int billId;
        private int customerId;
        private Date billDate;
        private String billDescription;
        private double billAmount;

        public Bill(){}

      public Bill(int billId, int customerId, Date billDate, String
billDescription, double billAmount) {
         //   super();
            this.billId = billId;
            this.customerId = customerId;
            this.billDate = billDate;
            this.billDescription = billDescription;
            this.billAmount = billAmount;
        }

      public int getBillId() {
            return billId;
        }

      public void setBillId(int billId) {
            this.billId = billId;
        }

      public int getCustomerId() {
            return customerId;
        }

      public void setCustomerId(int customerId) {
            this.customerId = customerId;
        }

      public Date getBillDate() {
            return billDate;
        }

      public void setBillDate(Date billDate) {
            this.billDate = billDate;
        }

      public String getBillDescription() {
            return billDescription;
        }

      public void setBillDescription(String billDescription) {
            this.billDescription = billDescription;
        }

      public double getBillAmount() {
            return billAmount;
```

```
    }

        public void setBillAmount(double billAmount) {
              this.billAmount = billAmount;
          }

        @Override
        public String toString() {
            return "Bill [billId=" + billId + ", customerId=" + customerId +
", billDate=" + billDate + ", billDescription="
                    + billDescription + ", billAmount=" + billAmount + "]";
        }
}
```

//_____**BIllOperationImpl file**_____

```
import java.sql.Connection;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

import java.text.ParseException;

import java.util.ArrayList;

import java.util.Date;

import java.util.Iterator;

import java.util.List;

import java.util.Scanner;


public class BIllOperationImpl implements IBillOperation{


   DBConnection dbc =new DBConnection();


   Scanner sc= new Scanner(System.in);


  List<Bill>billList=new ArrayList<>();

   int i;
```

```
    @Override
    public int saveBillRecord(int customer_id, Date bill_date, String bill_description, double
bill_amount)throws SQLException,ParseException, ClassNotFoundException{

        Connection con=dbc.getConnection();
        Statement st=con.createStatement();
        String sql="insert into bill(customerid,billdate,billdescription,billamount)
values("+customer_id+",'"+bill_date+"','"+bill_description+"',"+bill_amount+")";

        //DML
        int n=st.executeUpdate(sql);
        if(n>=0)
            System.out.println(n+" record(s) affected");
        return n;
    }

    @Override
    public int editBillRecord(int billid, int customer_id, String bill_description,
    double bill_amount) throws ClassNotFoundException, SQLException {
        Connection con=dbc.getConnection();
        Statement st=con.createStatement();

String sql = "update bill set customerId=(" + customer_id + "),billDescription = ('" +
bill_description + "'),billAmount = (" + bill_amount
                + ") where billId=(" + billid + ")";

        //DML
        int n=st.executeUpdate(sql);
        if(n>=0)
            System.out.println(n+" record(s) edited")
        return n;
```

```
}
@Override
 public int removeBillRecord(int billid) throws ClassNotFoundException, SQLException {

    Connection con=dbc.getConnection();
    Statement st=con.createStatement();

    String sql = "delete from bill where billId="+billid+"";

    //DML
    int n=st.executeUpdate(sql);
    if(n>=0)
       System.out.println(n+" record(s) deleted");

    return n;
 }

@Override
public List<Bill> getAllBillRecord() throws ClassNotFoundException, SQLException {

  Connection con=dbc.getConnection();
   Statement st=con.createStatement();

   String sql="select * from bill";
   ResultSet billSet=st.executeQuery(sql);
   while(billSet.next()) {
      System.out.println(billSet.getString(1)+" "+billSet.getString(2)+" "+billSet.getString(3)+"
"+billSet.getString(4)+" "+billSet.getString(5));
   }

   return (List<Bill>) billSet;
```

```
  }


  /*
 @Override
  public Bill getBillRecordById(int bill_id) {
     // TODO Auto-generated method stub
//
//      List<Bill>billSet = new ArrayList<>();
//      for (Bill bill: billSet) {
//         if(bill.getBillId()== bill_id)
//             return bill;
//
//      }
//      return new Bill(bill_id, bill_id, null, null, bill_id);


      String sql="select * from bill where  billId="+bill_id+"";
      ResultSet billSet=st.executeQuery(sql);
      while(billSet.next()) {
         System.out.println(billSet.getString(1)+" "+billSet.getString(2)+" "+billSet.getString(3)+"
"+billSet.getString(4)+" "+billSet.getString(5));
      }
  }
*/
  }
```

//_____**BIllOperationImpl Test file**_____

```
import static org.junit.jupiter.api.Assertions.*;
import java.sql.SQLException;
import java.text.ParseException;
import org.junit.jupiter.api.Test;
```

```
class BillOperationImplTest {

    BIllOperationImpl bl=new BIllOperationImpl();



   @Test
    void testSaveBillRecord() throws ClassNotFoundException, SQLException,
ParseException {
//        fail("Not yet implemented");
        assertEquals(0, bl.saveBillRecord(0, null, null, 0));
    }
    void testEditBillRecord() throws ClassNotFoundException, SQLException {
        assertEquals(0, bl.editBillRecord(0, 0, null, 0));
    }
    void testGetRemoveBillRecord() throws ClassNotFoundException,
SQLException {
        assertEquals(0, bl.removeBillRecord(0));
    }
    void testGetAllBillRecord() throws ClassNotFoundException, SQLException
{
        assertEquals(null, bl.getAllBillRecord());
      }

}
```

//_____BillOperationMain file_____

```
import java.sql.SQLException;

import java.text.ParseException;

import java.text.SimpleDateFormat;

import java.util.Date;

import java.util.Scanner;



public class BillOperationMain {


  public static void main(String[] args) throws ClassNotFoundException, SQLException,
ParseException {

    // TODO Auto-generated method stub

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

```
        java.util.Date sqlDate;
        java.util.Date utilDate=null;

//      Bill b= new Bil();
        BIllOperationImpl impl = new BIllOperationImpl();

        DBConnection dbc= new DBConnection();

        dbc.getConnection();
        int choice=0;
        System.out.println("Enter you choice:\n1-Add\n2-Edit\n3-Delete\n4-Show");
        choice = sc.nextInt();
        switch(choice) {

        case 1:

           System.out.println("Enter customer id: ");
           int customer_id= sc.nextInt();

           System.out.println("Enter date: ");
           SimpleDateFormat sdf = new SimpleDateFormat("dd-MM-yyyy");
           String bill_date=sc.next();
           utilDate =sdf.parse(bill_date);
           sqlDate= new java.sql.Date(utilDate.getTime());

           System.out.println("Enter bill description: ");
           String bill_description= sc.next();

           System.out.println("Enter bill amount: ");
           Double bill_amount= sc.nextDouble();
```

```
    impl.saveBillRecord(customer_id, sqlDate, bill_description, bill_amount);
    break;

case 2:
    System.out.println("Enter bill id: ");
    int billid= sc.nextInt();

    System.out.println("Enter customer id: ");
    int customerid= sc.nextInt();

    System.out.println("Enter bill description: ");
    String billdescription= sc.next();

    System.out.println("Enter bill amount: ");
    Double billamount= sc.nextDouble();

    impl.editBillRecord(billid, customerid, billdescription,billamount);
    break;

case 3:
    System.out.println("Enter bill_id: ");
    int b_id= sc.nextInt();
    impl.removeBillRecord(b_id);
    break;

case 4:
    impl.getAllBillRecord();
    break;
/*case 5:
    System.out.println("Enter Bill Id: ");
```

```
        int billId=sc.nextInt();


        impl.getBillRecordById(billId);*/


    default:
        System.out.println("Invalid choice!");
    }
}
}
```

//_____BillTest file_____

```
import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;


class BillTest {

   Bill b= new Bill();

    @Test
    void testGetBillId() {
    assertEquals(0,b.getBillId());
    }
    @Test
    void testGetCustomerId() {
    assertEquals(0,b.getCustomerId());
    }
    @Test
    void testGetBillDate() {
        assertEquals(null,b.getBillDate());
   }
    void testGetBillDescription() {
        assertEquals(null,b.getBillDescription());
    }
    void testGetBillAmount() {
        assertEquals(0, b.getBillAmount());
      }

}
```

//_____DBConnection file_____

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;

public class DBConnection {

    public static java.sql.Connection getConnection() throws ClassNotFoundException, SQLException{

        String driver="com.mysql.cj.jdbc.Driver";
        String dburl="jdbc:mysql://localhost:3306/billpayment";
        String user="root";
        String password="root";
        Connection con=null;
        Statement st= null;


            //1.load the driver
            Class.forName(driver);

            //2.create the connection
            con=DriverManager.getConnection(dburl,user,password);

            if(con!=null)
                System.out.println("Connection successful");
            else
                System.out.println("Connection failed..");

            //3.write and execute query
            st= con.createStatement();
```

```
        return con;
    }
}
```

```
//_________________IBillOperation file_________________
```

```
import java.sql.SQLException;
import java.text.ParseException;
import java.util.Date;
import java.util.List;

public interface IBillOperation {

    //method 1
    public int saveBillRecord(int customer_id,
      Date bill_date,
      String
      bill_description,
    double bill_amount) throws SQLException, ParseException, ClassNotFoundException;

    //method 2
    public int editBillRecord(int billid, int customer_id,String bill_description,
    double bill_amount) throws ClassNotFoundException, SQLException;

    //method 3
    public int removeBillRecord(int bill_id) throws ClassNotFoundException, SQLException;

    //method 4
    public List<Bill> getAllBillRecord() throws ClassNotFoundException, SQLException;
```

```
      //method 5
     //public Bill getBillRecordById(int bill_id);

}
```

//_____DataBase file_____

```
create database billpayment;
use billpayment;
create table customer(
customerid int primary key not null auto_increment,
customername varchar(100),
contactno varchar(100)
);
insert into customer (customerid,customername,contactno) values
(110,'Somi',986387867),(112,'Romi',987654352),
(113,'Riya',975643893),(114,'Jack',987654321),
(115,'Swati',786954326);
desc customer;
select*from customer;

create table bill(
billid int primary key not null auto_increment,
customerid int,
billdate timestamp,
billdescription varchar(100),
billamount double,
FOREIGN KEY(customerid) References customer(customerid)
);
```

```
desc bill;

select*from bill;
```