```
//-------------------------Bill.java------------------------- package
week4;

import java.security.Timestamp;
import java.util.Date;

public class Bill {
	private int bill;   private int
consumerld;	private Date
billdate;	private String
billDescription;	private double
billamount;	public Bill() {
		super();
	}
	public Bill(int bill, int consumerld, Date billdate, String billDescription, double billamount) {
		super();
		this.bill = bill;
this.consumerld = consumerld;
this.billdate = billdate;		this.billDescription
= billDescription;
		this.billamount = billamount;
	}
	public int getBill() {
		return bill;
	}
	public void setBill(int bill) {
		this.bill = bill;
	}
	public int getConsumerld() {
		return consumerld;
	}
	public void setConsumerld(int consumerld) {
		this.consumerld = consumerld;
	}
	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 [bill=" + bill + ", consumerld=" + consumerld + ", billdate=" + billdate + ", billDescription="
 + billDescription + ", billamount=" + billamount + "]";
	}

}
//-------------------------------------------- IBillOperation --------------------

package week4;

import java.security.Timestamp;
import java.util.Date; import
java.util.List;

public interface IBillOperation {
 int saveBillRecord(Bill b);
	int editBillrecoord(int bil,int consumerld,Date billdate,String billDescription,double billamount);
 int removeBillRecord(int bil);	List<Bill> getAllBillRecord();
	Bill GetBillRecord(int bil);

}
//----------------------------Bill Operation IMPL-----------------------------------------------------

package week4;

import java.security.Timestamp;
import java.util.Date; import
java.util.List;


public class BillOperationImpl implements IBillOperation {
	Bill[]bill=new Bill [100];
	static int index;

	@Override
	public int saveBillRecord(Bill b) {
		// TODO Auto-generated method stub
		bill[index]=b;
		index++;
		return 0;
	}

//---------------------- Edit ---------------------------
	@Override
	  public int editBillrecoord(int bil,int consumerld,Date billdate,String billDescription,double billamount) {
		// TODO Auto-generated method stub
 for(int i=0;i<index;i++) {
 if(bill[i].getBill()==bil) {
 bill[i].setConsumerld(consumerld);
 bill[i].setBilldate(billdate);
 bill[i].setBillDescription(billDescription);	bill[i].setBillamount(billamount);
```

```
break;
		}
					}
				return 0;
			}

			@Override
			public int removeBillRecord(int bil) {
				// TODO Auto-generated method stub
for (int i=0;i<index;i++) {
if(bill[i].getBill()==bil) {
bill[i].setConsumerld(-1);
bill[i].setBilldate(null);
bill[i].setBillDescription(null);
bill[i].setBillamount(-1);
                                        bill[i].setBill(-1);

                                }
                                else
                            System.out.println("Employee  id not found");

                        }
                        return 0;
                }
//------------------show all
                @Override
                public List<Bill> getAllBillRecord() {
 // TODO Auto-generated method stub        for (int
i=0;i<index;i++) {
                                System.out.println(bill[i]);
                        }

                        return null;
                }
//----------------search
                @Override
                public Bill GetBillRecord(int bil) {
 // TODO Auto-generated method stub       for (int
i=0;i<index;i++) {    if(bill[i].getBill()==bil) {

                                        System.out.println(bill[i]);
                                }
                                else
                            System.out.println("Employee  id not found");
                        }
                        return null;
                }

}
//------------------------------------------- BillOpretionMain-------------------------------------
```

```
package week4;

import java.security.Timestamp;
import java.sql.Connection; import
java.sql.DriverManager; import
java.sql.ResultSet;
import java.sql.SQLException; import
java.sql.Statement; import
java.text.ParseException; import
java.text.SimpleDateFormat; import
java.time.LocalDate; import
java.time.LocalDateTime; import
java.time.format.DateTimeFormatter;
import java.util.Date; import
java.util.Scanner;

public class BillOperation {

	public static void main(String[] args) throws ParseException {
		BillOperationImpl bill = new BillOperationImpl();

		Scanner sc = new Scanner(System.in);
		do {
			try {
				Connection con = null;
				try {
					con = DBConnection.getConnection();
				} catch (Exception e) {
					e.printStackTrace();
				}

				// Write and Execute query
				Statement st = con.createStatement();

				SimpleDateFormat sdf = new SimpleDateFormat("dd/MM/yyyy");

				LocalDate dateObj = LocalDate.now();

				int bil;
				int consumerld;
				java.util.Date billdate;
				String
billDescription;				String
strdate;				double billamount;
				java.sql.Date sqldate;

				int ch;
				ResultSet a;
				System.out.println("\t1.save bill \t\t2.edit bill\n\t3.remove bill\t\t4. gel all
bil\n\t5 search\n");
				System.out.println("enter your choice : ");
		ch = sc.nextInt();
```

```
                                        switch (ch) {
                                        case 1: // ------------add
                                                System.out.println("Enter billid number : ");
                                                bil = sc.nextInt();

                                                System.out.println("Enter consumer id  : ");
                                                consumerld = sc.nextInt();

                                                System.out.println("Enter bill date : ");
                        strdate = new Scanner(System.in).nextLine();
                billdate = sdf.parse(strdate);
                                                sqldate = new java.sql.Date(billdate.getTime());

                                                sc.nextLine();
                                                System.out.println("Enter bill Description : ");
                                                billDescription = sc.nextLine();

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

                                                String sql = "insert into bill values(" + bil + "," + consumerld + ",'" +
sqldate + "','"
                                                                + billDescription + "'," + billamount + ")";

                                                Bill b1 = new Bill(bil, consumerld, sqldate, billDescription,
billamount);

                                                bill.saveBillRecord(b1);
                                                ch = st.executeUpdate(sql);
                                                break;

                                        case 2: // ----------------------edit
                                                System.out.println("Enter bill id number : ");
                                                bil = sc.nextInt();

                                                System.out.println("Enter consumer id  : ");
                                                consumerld = sc.nextInt();

                                                System.out.println("Enter bill date : ");
                                        strdate = new Scanner(System.in).nextLine();
                                billdate = sdf.parse(strdate);
                                                sqldate = new java.sql.Date(billdate.getTime());

                                                sc.nextLine();
                                                System.out.println("Enter bill Description : ");
                                                billDescription = sc.nextLine();

                                                System.out.println("Enter bill amount : ");
                                                billamount = sc.nextDouble();
                                                bill.editBillrecoord(bil, consumerld, billdate, billDescription,
billamount);
```

```
                                        ;

                                        String sql2 = "update bill set consumerId=(" + consumerld + "),billDate
= ('" + sqldate
                                                + "'), billDescription = ('" + billDescription +
"'),billAmount = (" + billamount
                                                + ") where billId=(" + bil + ")";
                                ch = st.executeUpdate(sql2);
                                        System.out.println("\n *__Edited__* \n");
                        break;

                                case 3:// remove
                                        System.out.println("Enter bill id number : ");
                                bil = sc.nextInt();
bill.removeBillRecord(bil);
                                        String sql1 = "delete from bill where billId=(" + bil + ")";
                                        ch = st.executeUpdate(sql1);
                                        break;
                                case 4:// ------------------------show all
                                        bill.getAllBillRecord();
                                        String sqlq = "select * from bill";
                        ResultSet rs = st.executeQuery(sqlq);
                while (rs.next()) {
                                                System.out.println(rs.getInt(1) + " " + rs.getInt(2) + " " +
rs.getString(3) + " "
                                                        + rs.getString(4) + " " + rs.getDouble(5));
                                        }
                                        break;
                                case 5: // ---------------- search
                                        System.out.println("Enter id number : ");
                                        bil = sc.nextInt();
                                        bill.GetBillRecord(bil);
                                        String sql3 = "Select * from bill where billId=(" + bil + ")";
                                        a = st.executeQuery(sql3);
                                        while (a.next()) {
                                                System.out.println(a.getInt(1) + " " + a.getInt(2) + " " +
a.getString(3) + " " + a.getString(4)
                                                        + " " + a.getDouble(5));
                                        }
                                        break;

                                }

                        } catch (SQLException e1) {
                                System.out.println(e1.getMessage());
                        }
                } while (true);
        }

}
```

```
//--------------------------------BillOpretionTest------------------------- package
week4;

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

import org.junit.jupiter.api.Test;

class BillOpretionTest {
	BillOperationImpl bill = new BillOperationImpl();

	@Test
 void testSaveBillRecord() {    assertEquals(0,
bill.saveBillRecord(null));
	}

	@Test
	void testEditBillrecoord() {
		assertEquals(0, bill.editBillrecoord(0, 0, null, null, 0));
	}

	@Test
 void testRemoveBillRecord() {    assertEquals(0,
bill.removeBillRecord(0));
	}

	@Test
	void testGetAllBillRecord() {
assertEquals(null,bill.getAllBillRecord());

	}
```

```
	@Test
	void testGetBillRecord() {
assertEquals(null,bill.GetBillRecord(0));

	}

}
//-------------------------------------DBconnection---------------------------------- package
week4;

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



public class DBConnection {



  public static Connection getConnection() throws ClassNotFoundException, SQLException
   {
      String driver="com.mysql.cj.jdbc.Driver";
      String dburl="jdbc:mysql://localhost:3306/billpayment";
      String user="root";
      String password="Bootcamp@47";

      Class.forName(driver);
```

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



       return con;
    }



}
//---------------------------- Bill test----------
package week4;

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

import org.junit.jupiter.api.Test;

class BittTest {
Bill b=new Bill();

@Test
void testGetBill() {
assertEquals(0,b.getBill());
}

@Test
void testGetConsumerld() {
assertEquals(0,b.getConsumerld());
}
```

```
@Test
void testGetBilldate() {
assertEquals(null,b.getBilldate());
}

@Test
void testGetBillDescription() {
assertEquals(null,b.getBillDescription());
}

@Test
void testGetBillamount() {
assertEquals(0,b.getBillamount());
}

}
```