

```

public class Account {

    //Private instance variable
    private int acctno;
    private double balance;

    //Constructors- Default & Parameterized
    Account() {}
    Account(int acctno, double balance) {
        super();
        this.acctno=acctno;
        this.balance=balance;
    }

    //Getter & Setter
    public int getAcctno() {
        return acctno;
    }
    public void setAcctno(int acctno) {
        this.acctno = acctno;
    }
    public double getBalance() {
        return balance;
    }
    public void setBalance(double balance) {
        this.balance = balance;
    }

    //toString
    @Override
    public String toString() {
        return String.format("AccountNo: %-10s\tBalance:$%-10s",acctno,balance);
    }
}

```

```
New folder - CollectionGeneric/src/Customer.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Cars.java MathClass.java Lab3.java Employeeer.java A.java A2.java A1.java Point.java Account.java Customer.java Bill.java Transaction... Main.java
1 import java.util.ArrayList;
2 import java.util.Date;
3 import java.util.List;
4
5 public class Customer {
6     //Private instance variable
7     private int id;
8     private String name;
9     private String phone;
10    private Account account;
11
12    //Constructors- Default & Parameterized
13
14    Customer() {}
15    Customer(int id,String name,String phone,Account account){
16        super();
17        this.id=id;
18        this.name=name;
19        this.phone=phone;
20        this.account=account;
21    }
22
23    //Getters & Setters
24    public int getId() {
25        return id;
26    }
27    public void setId(int id) {
28        this.id = id;
29    }
30    public String getName() {
31        return name;
32    }
33    public void setName(String name) {
34        this.name = name;
35    }
36    public String getPhone() {
```

```
New folder - CollectionGeneric/src/Customer.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Cars.java MathClass.java Lab3.java Employeeer.java A.java A2.java A1.java Point.java Account.java Customer.java Bill.java Transaction... Main.java
22
23    //Getters & Setters
24    public int getId() {
25        return id;
26    }
27    public void setId(int id) {
28        this.id = id;
29    }
30    public String getName() {
31        return name;
32    }
33    public void setName(String name) {
34        this.name = name;
35    }
36    public String getPhone() {
37        return phone;
38    }
39    public void setPhone(String phone) {
40        this.phone = phone;
41    }
42    public Account getAccount() {
43        return account;
44    }
45    public void setAccount(Account account) {
46        this.account = account;
47    }
48
49    //to String
50    @Override
51    public String toString() {
52        return String.format
53            ("Customer details:\nCustomer Id: %-10s\tName: %-10s\tPhone: %-10s\nAccount details:\n%-10s",
54             id,name,phone,account);
55    }
56
57 }
```

```
New folder - CollectionGeneric/src/Bill.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Cars.java MathClass.java Lab3.java Employeeer.java A.java A2.java A1.java B.java Customer.java *Bill.java Transaction... Main.java Account.java
import java.text.SimpleDateFormat;
3
4 public class Bill {
5     //Private Instance Variable
6     private int id;
7     private int custid;
8     private Date billGenerationDate;
9     private Date billPaymentDate;
10    private double amount;
11    private boolean paid;
12
13    SimpleDateFormat format = new SimpleDateFormat("dd-MM-yyyy");
14
15    //Constructors- Default & Parameterized
16    public Bill() {
17    }
18
19    public Bill(int id, int custid, Date billGenerationDate, Date billPaymentDate, double amount, boolean paid) {
20        this.id = id;
21        this.custid = custid;
22        this.billGenerationDate = billGenerationDate;
23        this.billPaymentDate = billPaymentDate;
24        this.amount = amount;
25        this.paid = paid;
26    }
27    //Getters & Setters
28    public int getId() {
29        return id;
30    }
31
32    public void setId(int id) {
33        this.id = id;
34    }
35
36    public int getCustid() {
37        return custid;
```

```
38    }
39
40    public void setCustid(int custid) {
41        this.custid = custid;
42    }
43
44    public Date getBillGenerationDate() {
45        return billGenerationDate;
46    }
47
48    public void setBillGenerationDate(Date billGenerationDate) {
49        this.billGenerationDate = billGenerationDate;
50    }
51
52    public Date getBillPaymentDate() {
53        return billPaymentDate;
54    }
55
56    public void setBillPaymentDate(Date billPaymentDate) {
57        this.billPaymentDate = billPaymentDate;
58    }
59
60    public double getAmount() {
61        return amount;
62    }
63
64    public void setAmount(double amount) {
65        this.amount = amount;
66    }
67
68    public boolean isPaid() {
69        return paid;
70    }
71
72    public void setPaid(boolean paid) {
73        this.paid = paid;
74    }
```

```
public void setPaid(boolean paid) {
    this.paid = paid;
}

//toString
@Override
public String toString() {
    return String.format(
        "Bill details: \nBill Id: %-10s\tCustomer Id:"
        + " %-10s\tAmount:$%-10s\tGeneration Date: %-10s\tPayment Date"
        + " %-10s\tPaid: %-10s\n", id, custid, amount, format.format(billGenerationDate),
        billPaymentDate == null ? "" : format.format(billPaymentDate), paid ? "Paid": "Not Paid");
}
```

```
New folder - CollectionGeneric/src/Transaction.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Cars.java MathClass.java Lab3.java Employeeer.java A.java A2.java A1.java B.java Customer.java Bill.java Transaction.java Main.java Account.java
import java.util.Date;
3
4 public class Transaction {
5     private List<Customer> custList;
6     private List<Bill> billList;
7
8
9     //Constructors- Default & Parameterized
10    public Transaction() {
11    }
12
13    public Transaction(List<Customer> custList, List<Bill> billList) {
14        this.custList = custList;
15        this.billList = billList;
16    }
17
18
19    //method-Get Method
20    public Customer getCustomer(int id) {
21        for (Customer customer : custList) {
22            if(customer.getId() == id){
23                return customer;
24            }
25        }
26        return null;
27    }
28
29    //Methods-Pay Method
30    public void payBill(){
31        for (Bill bill : billList) {
32            int custid = bill.getCustid();
33            Customer customer = getCustomer(custid);
34            if(customer == null){
35                System.out.println(String.format("Customer with customer id %d does not exists",custid));
36                continue;
37            }
38
39            double balance = customer.getAccount().getBalance();
40            if(balance >= bill.getAmount()){
41                bill.setPaid(true);
42                bill.setBillPaymentDate(new Date());
43                customer.getAccount().setBalance(balance-bill.getAmount());
44                System.out.println(String.format("Bill paid for customer id %d",custid));
45            }else{
46                bill.setPaid(false);
47                System.out.println(String.format("Bill cannot be paid for customer id %d",custid));
48            }
49            System.out.println(customer);
50            System.out.println(bill);
51        }
52    }
53 }
```

```
New folder - CollectionGeneric/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

Cars.java MathClass.java Lab3.java Employeeer.java A.java A2.java A1.java B.java Customer.java *Bill.java *Transacio... *Main.java Account.java

1 import java.text.ParseException;
2 import java.util.ArrayList;
3 import java.util.Date;
4 import java.util.List;
5
6 public class Main {
7
8     public static void main(String[] args) throws ParseException {
9         Bill b=new Bill(); //creating object of bill
10
11
12         //creating object of customer
13         List<Customer> customerList = new ArrayList<>();
14         customerList.add(new Customer(1,"Aniket","9876543210",new Account(1,1000)));
15         customerList.add(new Customer(2,"Daisy","7896543210",new Account(2,1500)));
16
17
18         List<Bill> billList = new ArrayList<>();
19         billList.add(new Bill(1,1,b.format.parse("12-09-2022"),null,1001,false));
20         billList.add(new Bill(2,2,b.format.parse("13-09-2022"),null,500,false));
21         billList.add(new Bill(3,3,b.format.parse("16-09-2022"),null,1000,false));
22
23         //Creating object of Transaction
24         Transaction transaction = new Transaction(customerList,billList);
25         transaction.payBill();
26
27     }
28 }
29
30
```

77°F Cloudy 17:40 16-09-2022

```
New folder - CollectionGeneric/src/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> Main (1) [Java Application] C:\Users\aniket.ambasta\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.17.0.4.v20220805-1047\jre\bin\javaw.exe (16-Sep-2022, 5:45:30 pm - 5:45:31 pm) [pid: 1036]

Bill cannot be paid for customer id 1
Customer details:
Customer Id: 1      Name: Aniket      Phone: 9876543210
Account details:
AccountNo: 1      Balance:$1000.0
Bill details:
Bill Id: 1      Customer Id: 1      Amount:$1001.0      Generation Date: 12-09-2022      Payment Date      Paid: Not Paid

Bill paid for customer id 2
Customer details:
Customer Id: 2      Name: Daisy      Phone: 7896543210
Account details:
AccountNo: 2      Balance:$1000.0
Bill details:
Bill Id: 2      Customer Id: 2      Amount:$500.0      Generation Date: 13-09-2022      Payment Date 16-09-2022      Paid: Paid

Customer with customer id 3 does not exists
```