



**CELAL BAYAR UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING
CSE 1124-O.O. PROGRAMMING**

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PROJECT1**

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While we making this Project,we decided to create 2 classes.This Project could be made with 3,4 or more classes.We think 2 classes are enough such as Customer and Test.

Customer class has the desired field in the Project.We know that id , name, surname,gender,balance. For each field, we use get and set methods such as ;

```
public String getName(){
    return name;
}

public void setSurname(String newSurname){
    surname = newSurname;
}
```

The basic purpose of using Get and Set methods are accessing a variable from Test Class to Customer class. Furthermore, it has a constructor with the same name as the Customer class. We prefer to use constructor because it provide space for objects in memory and than we use it in the Test Class when we created new object.

```
public Customer(String id, String name, String surname, String gender, double
balance){
    this.id=id;
    this.name=name;
    this.surname=surname;
    this.gender=gender;
    this.balance=balance;
```

When we design the Project in our mind,we think how to keep values and access easily?We had a 2 options.Array or arraylist.We prefer to use arraylist because we want to store datas and it can be processed with the value held using iterator. Test Class is include arraylist.

```
ArrayList<Customer> myArray = new ArrayList<Customer>();
```

We have created the menu functions which is desired in the Project such as adding customer,deleting customer by id,updating information.While menu was created,we use switch case statement.We might used if,else if ,else statement but using a switch case statement, we provide to increase readability and writability.

MENU
0. Quit
1. Add Customer
2. Remove Customer
3. List All Customers
4. List All Customers by Customer ID
5. List All Customers by Customer Name
6. List All Customers by Customer Surname
7. List All Customers by Customer Gender
8. Update Information of Customers
9. Add Money to Bank
10. Draw Money from Bank

In customer addition process, we can add id,name,surname,gender,balance successfully but we faced to problem. Problem is same id,if you can additon 2 same id,program accepts these. We searched on the net and found something but none of them was useful for us.

Deletion customer by id proccess run successfully.While deletion process we use iterator and instance of statement .Iterator provided access to easily our arraylist.

```
System.out.println("Please enter Id :");
String searchID = scan.nextLine();
for( Iterator<Customer> it = myArray.iterator() ; it.hasNext();)
{
    Customer z = (Customer) it.next();
    if((z.getId().equals(searchID)))
    {
        if(z instanceof Customer)
        {
            it.remove();
            System.out.println("Customer removed
successfully.");
            break;
        }
    }
}
```

Instance of controls z object. We check whether the z object is of the Customer type.

Listing all customers by all information, name, surname, gender is working successfully. To list all customers, we used instanceof function in for loop. In the function, if q is instance of Customer, system should print informations of the customer.

(A code of listing customers by all informations)

```
System.out.println("");
        System.out.println("**List of Customers**");
        for(Customer q : myArray)
        {
            if (q instanceof Customer)
            {
                System.out.println(q);
            }
        }
        break;
```

Updating customer's informations (name,surname,gender), depositing money to bank and drawing money from bank processes are working successfully. It can be said that the processes are similar because set methods are used for the processes.

Processes	Necessary Methods
Updating Informations	SetName(), SetSurname(), SetGender()
Adding money (deposit) to bank	GetBalance(), SetBalance()
Drawing money from bank	GetBalance(), SetBalance()

- Adding and drawing money processes are similar but there are some differences between these. GetBalance() method is used for both of them, after that in drawing money function, if balance is lower than 0 or amount of drawing money is higher than balance, system should print "You can't drawing money from bank.". Otherwise, in adding money process, it is not necessary to control that balance is lower than 0.
- There is only one problem about drawing money from bank. Drawing money function can be worked successfully but after the first called, drawing money function skip to control ID so it causes problem.