



EAST WEST UNIVERSITY

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LAB-04

SUBMITTED TO

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P1)

```
package icecreamproject;

import java.util.Scanner;

class Icecream {

    String icecreamType;

    String icecreamCompany;

    double icecreamPrice;

    public Icecream(String it, String ic, double ip) {

        icecreamType = it;

        icecreamCompany = ic;

        icecreamPrice = ip;

    }

    public String toString() {

        return icecreamType + " " + icecreamCompany + " " + icecreamPrice;

    }

    String getIcecreamType() {

        return icecreamType;

    }

    void setIcecreamType(String it) {

        icecreamType = it;

    }

    String getIcecreamCompany() {

        return icecreamCompany;

    }

    void setIcecreamCompany(String ic) {

        icecreamCompany = ic;

    }

}
```

```
}
```

```
double getIcecreamPrice() {
```

```
    return icecreamPrice;
```

```
}
```

```
void setIcecreamPrice(double ip) {
```

```
    icecreamPrice = ip;
```

```
}
```

```
boolean equals(Icecream I)
```

```
{
```

```
    boolean result = true;
```

```
    if (this.getIcecreamPrice() == I.getIcecreamPrice())
```

```
    {
```

```
        return true;
```

```
    }
```

```
    else
```

```
    {
```

```
        result = false;
```

```
    }
```

```
    return result;
```

```
}
```

```
int compareTo(Icecream I) {
```

```
    if (this.getIcecreamPrice() > I.getIcecreamPrice())
```

```
    {
```

```
        return 1;
```

```
    }
```

```
    else if (this.getIcecreamPrice() == I.getIcecreamPrice())
```

```
    {
```

```
        return 0;
```

```
    }
```

```

        else
        {
            return -1;
        }
    }
}

```

```

public class IcecreamProject {
    static Icecream[] IcecreamArray = new Icecream[10];
    public static void searchbyCompany(String name, int n)
    {
        for (int i = 0; i < n; i++)
        {
            if (IcecreamArray[i].getIcecreamCompany().equals(name))
            {
                System.out.println(IcecreamArray[i].getIcecreamType());
                System.out.println(IcecreamArray[i].getIcecreamPrice());
            }
        }
    }
}

public static void main(String[] args)
{
    Scanner input = new Scanner(System.in);
    /*
    Icecream ice1 = new Icecream("Cone", "Polar", 45);
    Icecream ice2 = new Icecream("Chocobar", "Igloo", 25);
    System.out.println(ice1);
    System.out.println(ice2);
    System.out.println(ice1.equals(ice2));
    System.out.println(ice1.compareTo(ice2));
    Icecream[] IcecreamArray = new Icecream[10];*/
    System.out.println("How many objects do you want to create: ");
}

```

```

int n = input.nextInt();
input.nextLine();
for (int i = 0; i < n; i++)
{
    System.out.println("Enter icecream type:");
    String it = input.nextLine();
    System.out.println("Enter icecream company:");
    String ic = input.nextLine();
    System.out.println("Enter icecream price:");
    double ip = input.nextDouble();
    input.nextLine();
    IcecreamArray[i] = new Icecream(it, ic, ip);
    System.out.println(IcecreamArray[i].toString());
}
System.out.println("\n\n total: ");
for (int i = 0; i < n; i++)
{
    System.out.println(IcecreamArray[i]);
}
System.out.println("Enter the name to search: ");
String a = input.nextLine();
searchbyCompany(a,n);
}
}

```

P2)

```

import java.sql.SQLOutput;
import java.util.Scanner;
class Book
{
    int ISBN;

```

```
String BookTitle;
```

```
int NumberOfPages;
```

```
public Book(int is, String bt, int np)
```

```
{
```

```
    ISBN=is;
```

```
    BookTitle=bt;
```

```
    NumberOfPages=np;
```

```
}
```

```
public String toString()
```

```
{
```

```
    return ISBN+" " +BookTitle+ " "+NumberOfPages;
```

```
}
```

```
int compareTo(Book I)
```

```
{
```

```
    if (this.NumberOfPages > I.NumberOfPages)
```

```
    {
```

```
        return 1;
```

```
    }
```

```
    else if (this.NumberOfPages == I.NumberOfPages)
```

```
    {
```

```
        return 0;
```

```
    }
```

```
    else
```

```
    {
```

```
        return -1;
```

```
    }
```

```
}
```

```
}
```

```

public class BookObjects
{
    static Book[] ItemArray = new Book[5];
    public static void Heavier(int x, int n)
    {
        for (int i=0; i<n; i++)
        {
            System.out.println("Book number: "+(i+1));
            if (ItemArray[i].NumberOfPages>x)
            {
                System.out.print(ItemArray[i].BookTitle+" ");
                System.out.println("True");
            }
            else
            {
                System.out.print(ItemArray[i].BookTitle+" ");
                System.out.println("False");
            }
        }
    }

    public static void main(String[] args)
    {
        Scanner in= new Scanner(System.in);
        /*
        Book book1 = new Book(10, "ASDF", 25);
        Book book2 = new Book(20, "qwert", 20);
        System.out.println(book1);
        System.out.println(book2);
        System.out.println(book1.compareTo(book2));*/

        System.out.println("How many info do you want to input: ");
        int n = in.nextInt();
    }
}

```

```

for (int i = 0; i < n; i++)
{
    System.out.println("Book number: "+(i+1));
    System.out.println("Enter ISBN:");
    int is = in.nextInt();
    System.out.println("Enter book title:");
    in.nextLine();
    String ic = in.nextLine();
    System.out.println("Enter number of pages:");
    int np = in.nextInt();
    ItemArray[i] = new Book(is, ic, np);
    System.out.println(ItemArray[i].toString());
}

```

```

System.out.println("\n\n total: ");
for (int i=0; i<n; i++)
{
    System.out.println(ItemArray[i]);
}

```

```

System.out.println("");
System.out.println("Limitation of page number: 500");
int a = 500;
Heavier(a,n);

```

```

String[] x = new String[2];
System.out.println("");
System.out.println("Enter the book names to compare:");
for (int i=0; i<2; i++)
{
    System.out.println("Book number: "+(i+1));
    in.nextLine();
}

```



```

        x[i] = in.next();
    }
    for (int i=0; i<2; i++)
    {
        System.out.println(ItemArray[0].compareTo(ItemArray[1]));
        break;
    }
}
}

```

P3)

```

import java.util.Scanner;

class Calclution
{
    int Numerator;
    int Denominator;

    Calclution()
    {
        Numerator = 0;
        Denominator = 1;
    }

    public Calclution(int nu, int de)
    {
        Numerator=nu;
        Denominator=de;
    }

    public String toString()
    {
        return Numerator+"/"+Denominator;
    }
}

```

```

    }

    Calclution addition(Calclution nu)
    {
        return new Calclution((Numerator * nu.Denominator + Denominator * nu.Numerator),
(Denominator * nu.Denominator));
    }

    Calclution subtraction(Calclution nu)
    {
        return new Calclution((Numerator * nu.Denominator - Denominator * nu.Numerator),
(Denominator * nu.Denominator));
    }

    Calclution multiplication(Calclution nu)
    {
        return new Calclution((nu.Numerator * Numerator), (nu.Denominator * Denominator));
    }

    Calclution division(Calclution nu )
    {
        return new Calclution((nu.Numerator + Numerator), (nu.Numerator * Denominator));
    }
}

```

```

public class Fraction
{
    static Calclution[] FractionArray = new Calclution[100];

    public static void main(String[] args)
    {
        Scanner in= new Scanner(System.in);

        for(int i=0; i<2;i++)
        {
            System.out.println("Enter fraction no "+(i+1)+" :");

```

```
        System.out.print("Numerator= ");
        int nu=in.nextInt();
        System.out.print("Denominator= ");
        int de=in.nextInt();
        FractionArray[i] = new Calclution(nu, de);
        System.out.println("Fraction "+(i+1)+" :");
        System.out.println(FractionArray[i].toString());
    }
}
```

```
Calclution f1= FractionArray[0].addition(FractionArray[1]);
System.out.println("Sum= "+f1);
```

```
Calclution f2= FractionArray[0].subtraction(FractionArray[1]);
System.out.println("Subtraction= "+f2);
```

```
Calclution f3= FractionArray[0].multiplication(FractionArray[1]);
System.out.println("Multiplication= "+f3);
```

```
Calclution f4= FractionArray[0].division(FractionArray[1]);
System.out.println("Division= "+f4);
```

```
    }
}
```