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**LAB-04**

**SUBMITTED TO**

Mahamudul Hasan

Department of Computer Science & Engineering

East-West University

***SUBMITTED BY***

**Name:** B M Shahria Alam

**Student ID:** 2021-3-60-016

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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("\nIn 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("\nIn 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 Calclusion

{

int Numerator;

int Denominator;

Calclusion()

{

Numerator = 0;

Denominator = 1;

}

public Calclusion(int nu, int de)

{

Numerator=nu;

Denominator=de;

}

public String toString()

{

return Numerator+"/" +Denominator;

}

Calclusion addition(Calclusion nu)

{

return new Calclusion((Numerator \* nu.Denominator + Denominator \* nu.Numerator), (Denominator \* nu.Denominator));

}

Calclusion subtraction(Calclusion nu)

{

return new Calclusion((Numerator \* nu.Denominator - Denominator \* nu.Numerator), (Denominator \* nu.Denominator));

}

Calclusion multiplication(Calclusion nu)

{

return new Calclusion((nu.Numerator \* Numerator), (nu.Denominator \* Denominator));

}

Calclusion division(Calclusion nu )

{

return new Calclusion((nu.Numerator + Numerator), (nu.Numerator \* Denominator));

}

}

public class Fraction

{

static Calclusion[] FractionArray = new Calclusion[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 Calclusion(nu, de);

System.out.println("Fraction "+(i+1)+" :");

System.out.println(FractionArray[i].toString());

}

Calclusion f1= FractionArray[0].addition(FractionArray[1]);

System.out.println("Sum= "+f1);

Calclusion f2= FractionArray[0].subtraction(FractionArray[1]);

System.out.println("Subtraction= "+f2);

Calclusion f3= FractionArray[0].multiplication(FractionArray[1]);

System.out.println("Multiplication= "+f3);

Calclusion f4= FractionArray[0].division(FractionArray[1]);

System.out.println("Division= "+f4);

}

}