KALNA POLYTECHNIC

**Lab\_ASSINGMENT\_1**

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| * Department: | CST. |
| * Semester: | 4th. |
| * Subject: | OOP’s using java |
| * Year: | 2022-2023 |
| * Date: | 17.3.2023 |

Signature

1. Three sides of a triangle is given. Check and find the area of the triangle.

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| Program:- |

package videoToutorial;

import java.util.Scanner;

public class AreaOfTrangle {

public static void main(String[] args) {

Scanner obj =new Scanner(System.in);

System.out.println("Enter the length of side 1:");

double side1= obj.nextDouble();

System.out.println("Enter the length of side 2:");

double side2= obj.nextDouble();

System.out.println("Enter the length of side 3:");

double side3= obj.nextDouble();

double parameter = (side1+ side2+ side3)/2;

double area= Math.sqrt(parameter \* (parameter-side1) \* (parameter-side2)\* (parameter-side3));

System.out.println("the area of triangle is: "+ area);

}

}

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| Output:- |

Enter the length of side 1:

12

Enter the length of side 2:

23

Enter the length of side 3:

34

the area of triangle is: 66.80896272207794

Process finished with exit code 0

2. Find the second maximum number from a given set of three numbers by using i) If-else ii) ternary operator iii) Math.max() and Math.min() methods.

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| Program:- |

1. package videoToutorial;

import java.util.Scanner;

public class SLNinif\_else {

public static void main(String[] args) {

Scanner obj= new Scanner(System.in);

System.out.println("Enter 1st number:");

int a= obj.nextInt();

System.out.println("Enter 2nd number:");

int b= obj.nextInt();

System.out.println("Enter 3rd number:");

int c= obj.nextInt();

if (a>b && a<c){

if (b>c){

System.out.println(b+"is the 2nd largest number");

}

else {

System.out.println(c+" is the 2nd largest number.");

}

} else if (b>a && b>c) {

if (a>c){

System.out.println(a+" is the 2nd largest number");

}

else {

System.out.println(c+" is the 2nd largest number");

}

}

else {

if (a>b){

System.out.println(a+" is the 2nd largest number");

}

else{

System.out.println(b+ " is the 2nd largest number");

}

}

}

}

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| Output:- |

Enter 1st number:

12

Enter 2nd number:

23

Enter 3rd number:

34

23 is the 2nd largest number

Process finished with exit code 0

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| Program:- |

1. import java.util.Scanner;

public class SLNTernary {

public static void main(String[] args) {

Scanner obj= new Scanner(System.in);

System.out.println("Enter 1st number:");

int a= obj.nextInt();

System.out.println("Enter 2nd number:");

int b= obj.nextInt();

System.out.println("Enter 3rd number:");

int c= obj.nextInt();

int secandLarge= (a>b && a>c)? (b>c? b:c):(b>a && b>c)? (a>c? a:c):(a>b?a:b);

System.out.println("The 2nd largest number is: "+ secandLarge);

}

}

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| Output:- |

Enter 1st number:

45

Enter 2nd number:

56

Enter 3rd number:

32

The 2nd largest number is: 45

Process finished with exit code 0

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| Program:- |

1. public class SLNMethod {

public static void main(String[] args) {

Scanner obj= new Scanner(System.in);

System.out.println("Enter 1st number:");

int a= obj.nextInt();

System.out.println("Enter 2nd number:");

int b= obj.nextInt();

System.out.println("Enter 3rd number:");

int c= obj.nextInt();

int secandLarge = Math.max(Math.min(a,b), Math.min(Math.max(a,b), c));

System.out.println("the secand largest number is: "+secandLarge);

}

}

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| Output:- |

Enter 1st number:

345

Enter 2nd number:

64

Enter 3rd number:

89

the secand largest number is: 89

Process finished with exit code 0

1. Find the roots of a quadratic equation including complex roots.

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| Program:- |

package videoToutorial;

import java.util.Scanner;

public class calculateRoots {

public static void main(String[] args) {

Scanner obj= new Scanner(System.in);

System.out.println("Enter the coefficient a, b and c:");

double a= obj.nextDouble();

double b= obj.nextDouble();

double c= obj.nextDouble();

double discriminant = b \* b - 4 \* a \* c;

if (discriminant>0){

double root1= (-b+ Math.sqrt(discriminant))/ (2 \* a);

double root2= (-b- Math.sqrt(discriminant))/ (2 \* a);

} else if (discriminant == 0) {

double root = -b /(2 \*a);

System.out.println("The root is: " +root);

}

else {

System.out.println("The equation has no real roots.");

}

}

}

|  |
| --- |
| Output:- |

Enter the coefficient a, b and c:

34

67

98

The equation has no real roots.