ĐẠI HỌC BÁCH KHOA HÀ NỘI

TRƯỜNG CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG

BÁO CÁO THỰC HÀNH – LAB01

IT3103-744528-2024.1

BÀI THỰC HÀNH - LAB01

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Mục Lục

Danh sách hình ảnh

BÁO CÁO THỰC HÀNH LAB01

The Very First Java Programs

2.2.1.Write,compile the first Java application:

```
1  //Example 1: HelloWorld.java
2  //Text-printing program
3  public class HelloWorld {
4
5      public static void main(String args[]){
6          System.out.println("Xin chao \n cac ban!");
7          System.out.println("Hello \t world!");
8
9      } // end of method main
10 }
```

Hình 1 - Code ví dụ 1

Kết quả :

Hình 2 – Kết quả ví dụ 1

2.2.2 Write , compile the first diago Java program

```
1  // Example 2: FirstDialog.java
2  import javax.swing.JOptionPane;
3  public class FirstDialog{
4      public static void main(String[] args){
5          JOptionPane.showMessageDialog(null,"Hello world! How are you?");
6          System.exit(0);
7      }
8  }
```

Hình 3 - Code ví dụ 2

Kết quả :
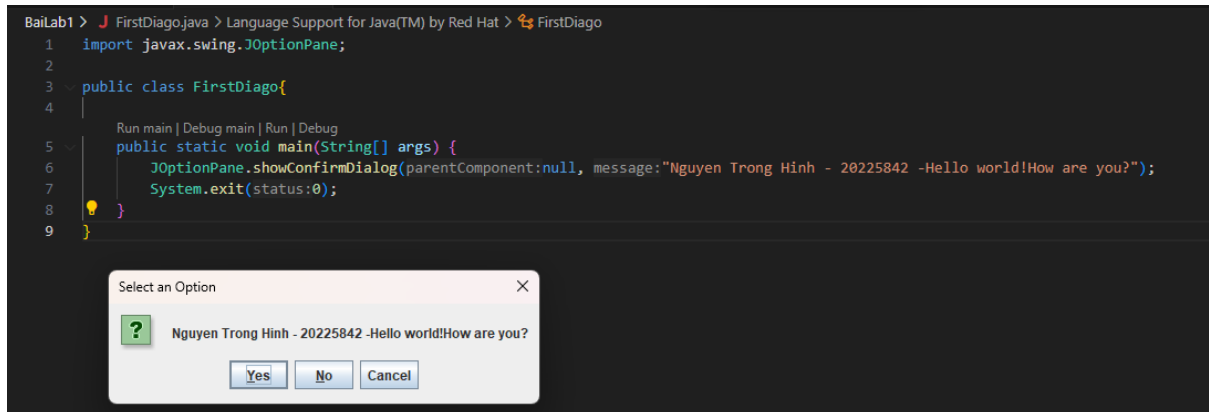
Hình 4 – Kết quả ví dụ 2

2.2.3 Write , compile the first input dialog Java application :

```java
// Example 3: HelloNameDialog.java
import javax.swing.JOptionPane;
public class HelloNameDialog{
  public static void main(String[] args){
    String result;
    result = JOptionPane.showInputDialog("Please enter your name:");
    JOptionPane.showMessageDialog(null, "Hi "+ result + "!");
    System.exit(0);
  }
}
```

Hình 5 – Code ví dụ 3

Kết quả :
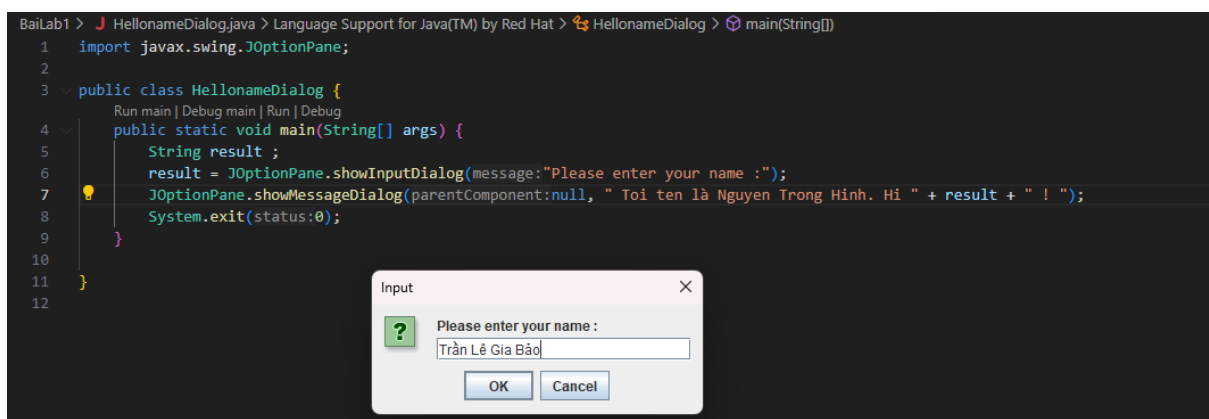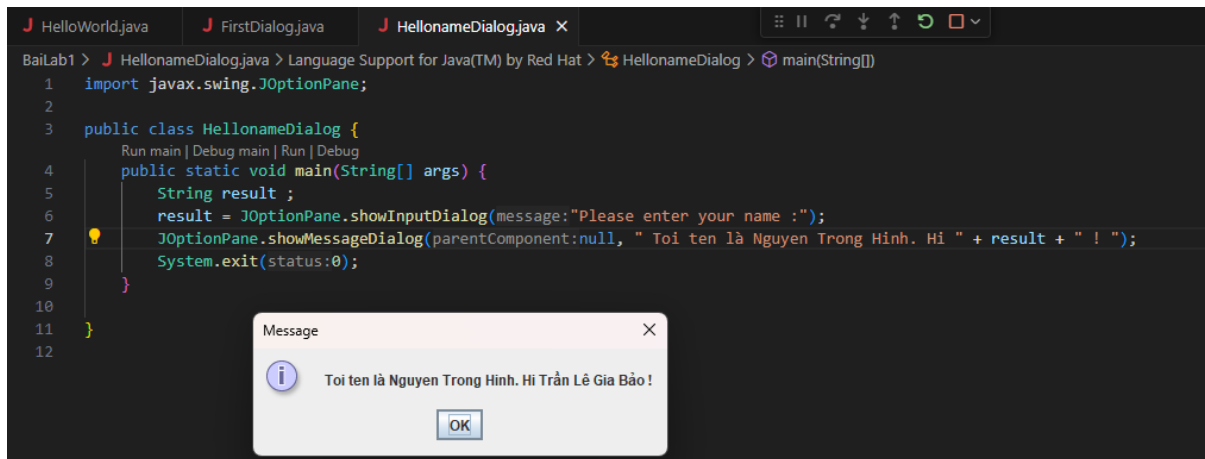
Hình 6 – Kết quả ví dụ 3

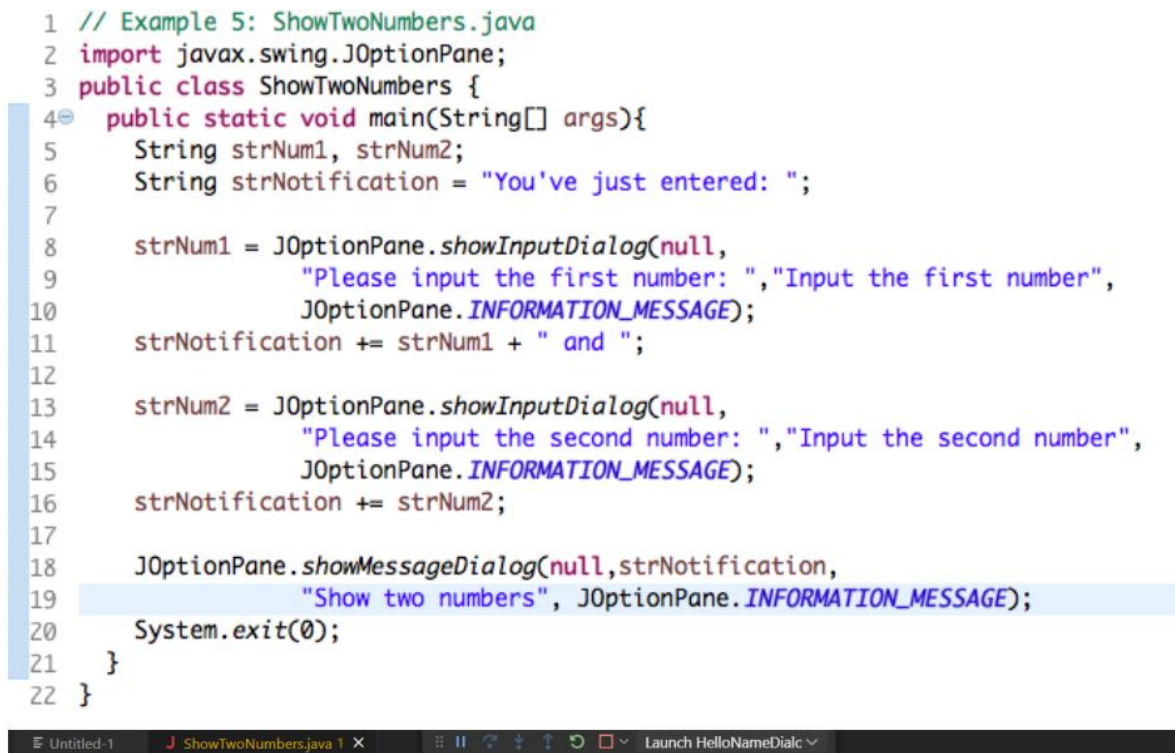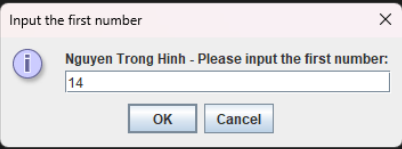2.2.4 Write, complite and run the following example :
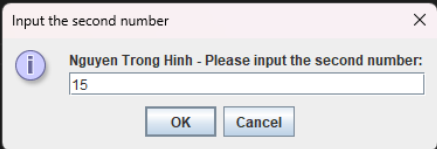

*Hình 7 – Code ví dụ 4*

Kết quả :

```java
BaiLab1 > J ShowtwoNumbers.java > Java > ShowtwoNumbers
  1    // Example 5: ShowTwoNumbers.java
  2    import javax.swing.JOptionPane;
  3
  4    public class ShowtwoNumbers {
       Run main | Debug main | Run | Debug
  5        public static void main(String[] args) {
  6            String strNum1, strNum2;
  7            String strNotification = "Nguyen Trong Hinh - You've just entered: ";
  8
  9            // Get the first number from the user
 10            strNum1 = JOptionPane.showInputDialog(parentComponent:null,
 11                    message:"Nguyen Trong Hinh - Please input the first number: ", title:"Input the first number",
 12                    JOptionPane.INFORMATION_MESSAGE);
 13            strNotification += strNum1 + " and "; // Append the first number to the notification
 14
 15            // Get the second number from the user
 16            strNum2 = JOptionPane.showInputDialog(parentComponent:null,
 17                    message:"Nguyen Trong Hinh - Please input the second number: ", title:"Input the second number",
 18                    JOptionPane.INFORMATION_MESSAGE);
 19            strNotification += strNum2; // Append the second number to the notification
 20
 21            // Display the final message
 22            JOptionPane.showMessageDialog(parentComponent:null, strNotification,
 23                    title:"Show two numbers", JOptionPane.INFORMATION_MESSAGE);
 24
 25            System.exit(status:0); // Exit the program
 26        }
 27    }
 28
```

Show two numbers ✕

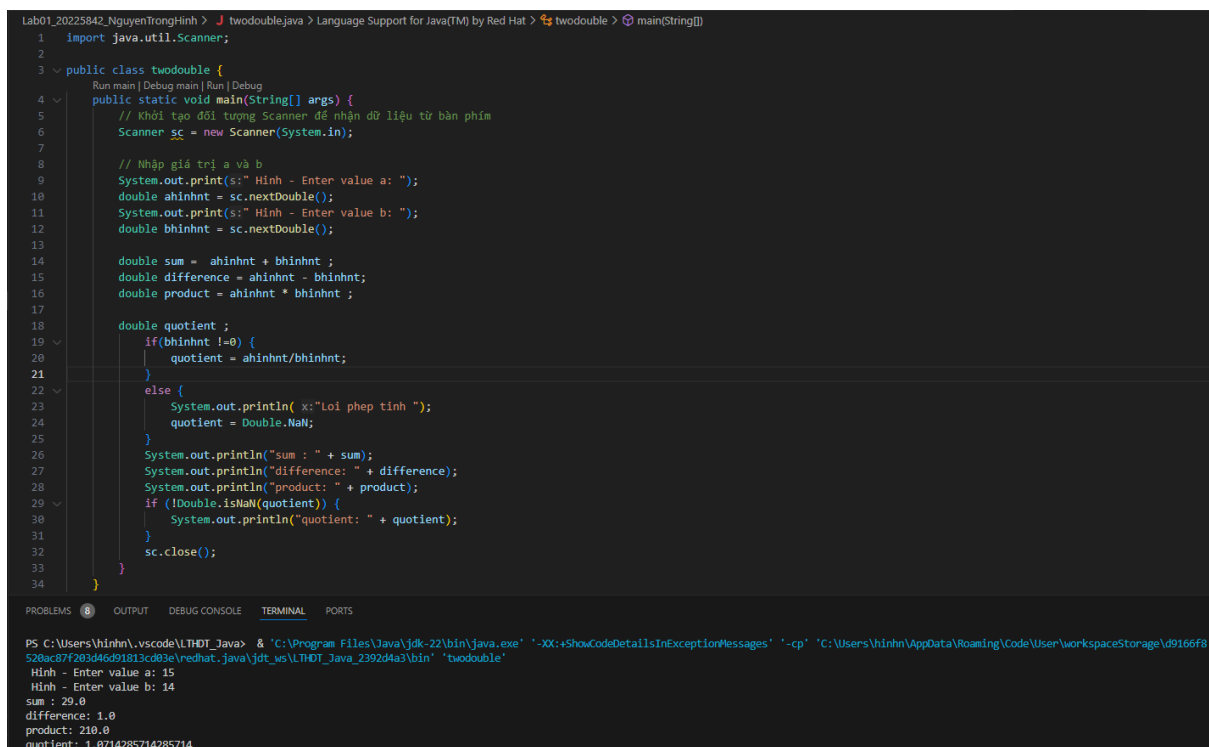ⓘ Nguyen Trong Hinh - You've just entered: 14 and 15

OK
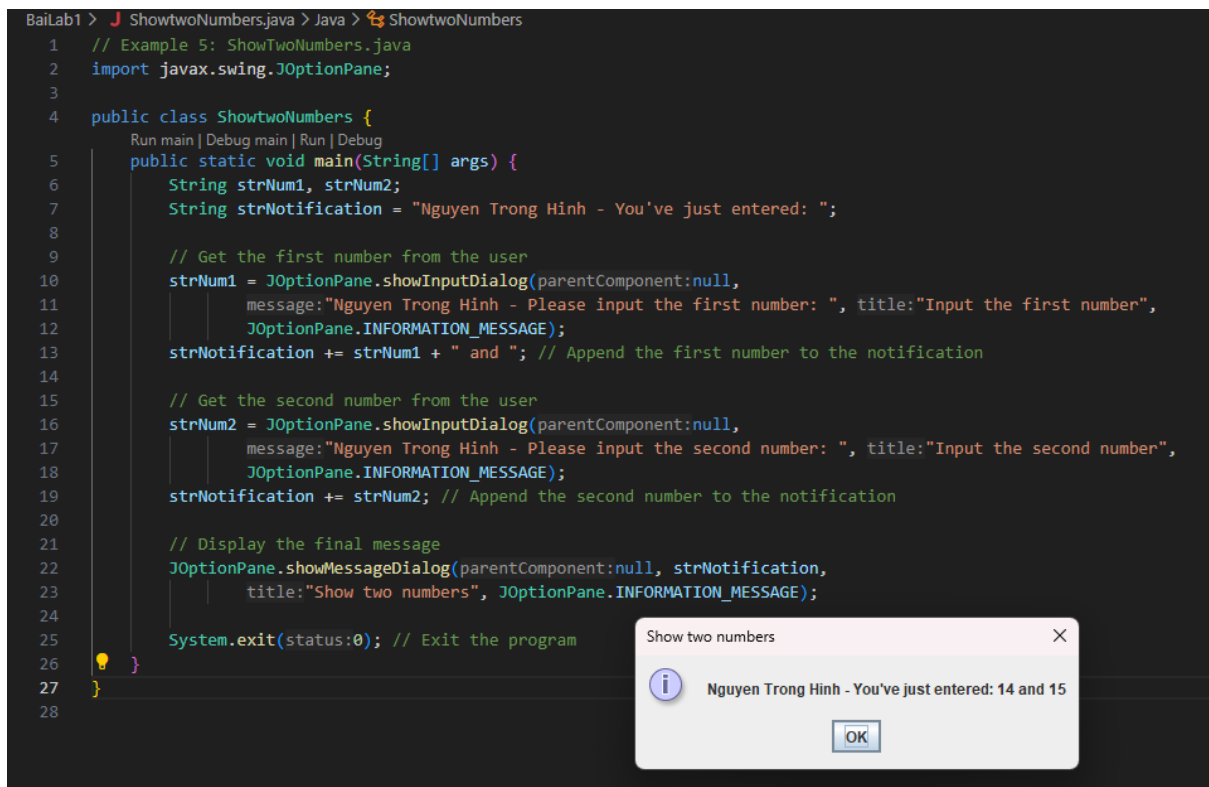
Hình 8 – Kết quả ví dụ 4

BÀI TẬP :

2.2.5 Write a program to calculate sum , difference , product ,and quotient of 2 double numbers which are entered by users.

```java
Lab01_20225842_NguyenTrongHinh > J twodouble.java > Language Support for Java(TM) by Red Hat > twodouble > main(String[])
  1    import java.util.Scanner;
  2
  3    public class twodouble {
       Run main | Debug main | Run | Debug
  4        public static void main(String[] args) {
  5            // Khởi tạo đối tượng Scanner để nhận dữ liệu từ bàn phím
  6            Scanner sc = new Scanner(System.in);
  7
  8            // Nhập giá trị a và b
  9            System.out.print(s:" Hinh - Enter value a: ");
 10            double ahinhnt = sc.nextDouble();
 11            System.out.print(s:" Hinh - Enter value b: ");
 12            double bhinhnt = sc.nextDouble();
 13
 14            double sum = ahinhnt + bhinhnt ;
 15            double difference = ahinhnt - bhinhnt;
 16            double product = ahinhnt * bhinhnt ;
 17
 18            double quotient ;
 19            if(bhinhnt !=0) {
 20                quotient = ahinhnt/bhinhnt;
 21            }
 22            else {
 23                System.out.println( x:"Loi phep tinh ");
 24                quotient = Double.NaN;
 25            }
 26            System.out.println("sum : " + sum);
 27            System.out.println("difference: " + difference);
 28            System.out.println("product: " + product);
 29            if (!Double.isNaN(quotient)) {
 30                System.out.println("quotient: " + quotient);
 31            }
 32            sc.close();
 33        }
 34    }

PROBLEMS 8    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

PS C:\Users\hinhn\.vscode\LTHDT_Java>  & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\hinhn\AppData\Roaming\Code\User\workspaceStorage\d9166f8
520ac87f203d46d91813cd03e\redhat.java\jdt_ws\LTHDT_Java_2392d4a3\bin' 'twodouble'
 Hinh - Enter value a: 15
 Hinh - Enter value b: 14
sum : 29.0
difference: 1.0
product: 210.0
quotient: 1.0714285714285714
```

Hình 9 – Kết quả bài tập 5

2.2.6. 1) Write a program to find real solutions of a first-order linear equation

```java
Lab01_20225842_NguyenTrongHinh > J LinearEquation.java > Language Support for Java(TM) by Red Hat > ↙ LinearEquation
1    import java.util.Scanner;
2
3    public class LinearEquation {
        Run main | Debug main | Run | Debug
4        public static void main(String[] args) {
5            Scanner sc = new Scanner(System.in);
6            System.out.println(x:"Enter value a : ");
7            double a = sc.nextDouble();
8            System.out.println(x:"Enter value b : ");
9            double b = sc.nextDouble();
10
11
12           if(a ==0 ){
13               if(b==0){
14                   System.out.println(x:" Phuong trinh vo so nghiem : ");
15               }
16               else {
17                   System.out.println(x:" Phuong trinh vo nghiem : ");
18               }
19           }
20           else {
21               double x = (-b) / (a) ;
22               System.out.println(" Phuong trinh co nghiem la : x = " +x);
23           }
24       }
25    }
26
```

```
PROBLEMS  3    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS
PS C:\Users\hinhn\.vscode\LTHDT_Java> ^C
PS C:\Users\hinhn\.vscode\LTHDT_Java>
PS C:\Users\hinhn\.vscode\LTHDT_Java>  c:; cd 'c:\Users\hinhn\.vscode\LTHDT_Java'; & 'C:\Program Files\Java\jdk
workspaceStorage\d9166f8520ac87f203d46d91813cd03e\redhat.java\jdt_ws\LTHDT_Java_2392d4a3\bin' 'LinearEquation'
Enter value a :
13
Enter value b :
14
 Phuong trinh co nghiem la : x = -1.0769230769230769
PS C:\Users\hinhn\.vscode\LTHDT_Java>
```

Hình 10 – Kết quả 2.2.6.1

2.2.6.2) Write a program to find real solutions of a first-order Linear System

Hình 11 – Code 2.2.6.2

Kết quả :

Hình 12 – Kết quả 2.2.6.2

2.2.6.3) Write a program to find real solutions of Quadratic Equation

```java
import java.util.Scanner;

public class QuadraticEquation {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print(s:" Enter value a : ");
        double a = scanner.nextDouble();
        System.out.print(s:" Enter value b : ");
        double b = scanner.nextDouble();
        System.out.print(s:" Enter value c : ");
        double c = scanner.nextDouble();
        // Tinh delta
        double delta = b * b - 4 * a * c ;

        if(delta > 0){
            double x1 = (-b + Math.sqrt(delta)) / (2 * a) ;
            double x2 = (-b - Math.sqrt(delta)) / (2 * a);
            System.out.println(x:" The solutions of the equation are: ");
            System.out.println(" x1 :" + x1);
            System.out.println(" x2: " + x2);
        }
        else if (delta==0){
            double x = (-b) / (2 * a);
            System.out.println(x:" The equation has one double root:");
            System.out.println(" x: " + x);
        }
        else {
            double re = (-b) / (2 * a);
            double im = Math.sqrt(-delta) /(2 * a);
            System.out.println(x:" The equation has complex solutions:");
            System.out.println(" x1 = " + re + "+" +im+ "i");
            System.out.println(" x2 = " + re + "-" +im+ "i");
        }
        scanner.close();
    }
}
```

Hình 13 – Code 2.2.6.3
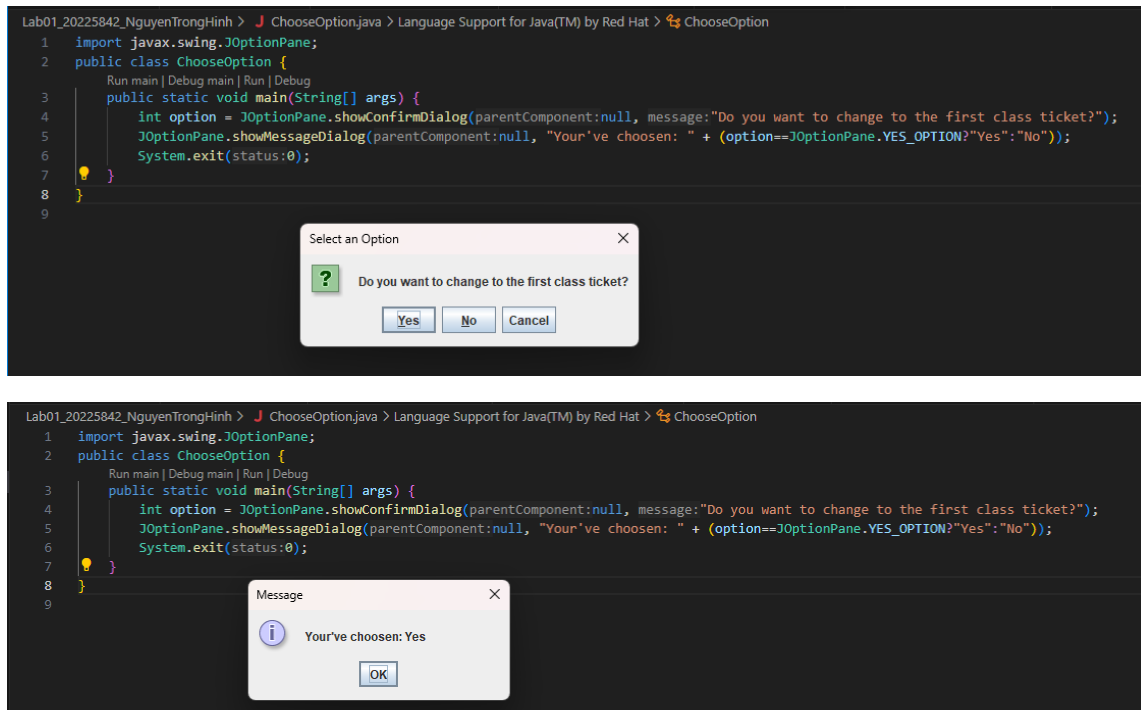
Kết quả :

```
PROBLEMS  3   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS C:\Users\hinhn\.vscode\LTHDT_Java>  & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-XX:+9
520ac87f203d46d91813cd03e\redhat.java\jdt_ws\LTHDT_Java_2392d4a3\bin' 'QuadraticEquation'
 Enter value a : 1
 Enter value b : 4
 Enter value c : 4
 The equation has one double root:
 x: -2.0
PS C:\Users\hinhn\.vscode\LTHDT_Java>
```
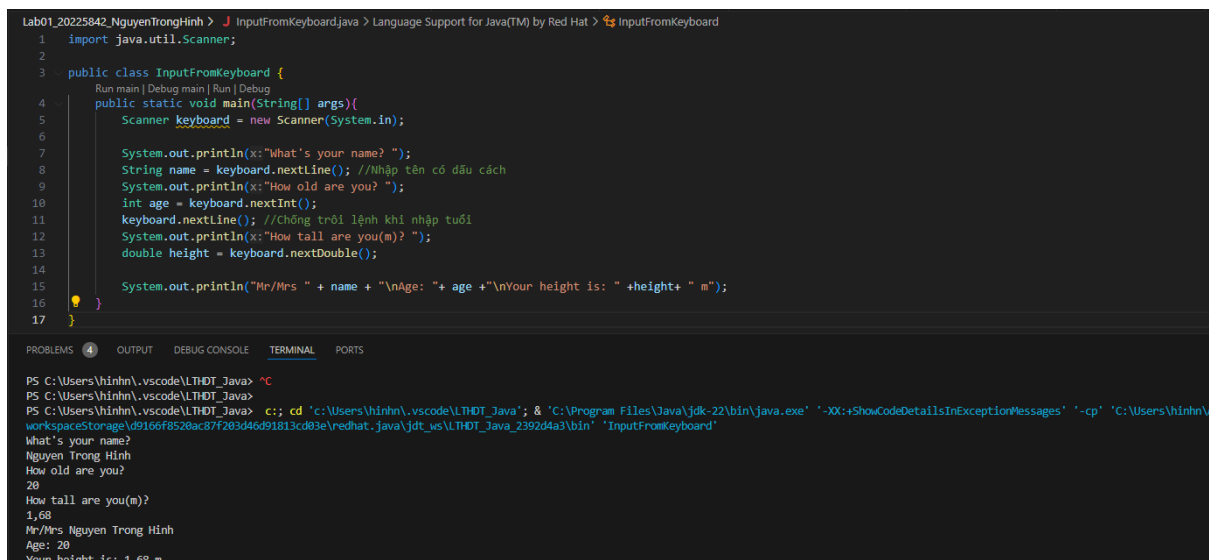
Hình 14 – Kết quả 2.2.6.3

6.1 Write , compile and run the ChoosingOption program:

Kết quả :

Hình 15 – Kết quả 6.1

6.2 Write a program for input/output from keyboard

Hình 16 – Kết quả 6.2

6.3 Write a program to display a triangle with a height of n stars (*), n
is entered by users.

Hình 17 – Code 6.3

Kết quả :

Hình 18 – Kết quả 6.3

6.4 Write a program to display the number of days of a month, which is entered by users (both month and year). If it is an invalid month/year, ask the user to enter again.

Hình 19 – Code 6.4

Kết quả :

Hình 20 – Kết quả 6.4

6.5 Write a Java program to sort a numeric array, and calculate the sum and average value of array elements


```java
import java.util.Arrays;
import java.util.Scanner;

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

        System.out.print(s:" Nhap so phan tu cua mang : ");
        int n = sc.nextInt();

        if (n <= 0){
            System.out.print(s:" So phan tu cua mang khong hop le");
            return;
        }
        double[] arr = new double[n];

        for (int i=0;i<n;i++){
            System.out.print("Input arr["+i+"]: ");
            arr[i] = sc.nextDouble();
        }
        Arrays.sort(arr);
        // Tinh tong
        double sum = 0;
        for (int i=0;i<n;i++){
            sum += arr[i];
        }
        //Tìm số trung bình cộng của các giá trị phần tử trong mảng
        double avg = sum/n;

        //In các kết quả yêu cầu
        System.out.println(x:"\n\nMang sau khi da sap xep tu be den lon: ");
        for (double i:arr){
            System.out.print(i+" ");
        }
        System.out.println("\nTong cac phan tu trong mang: "+sum);
        System.out.print("Trung binh cong cac gia tri trong mang: "+avg);
    }
}
```

Hình 21 – Code 6.5

Kết quả :


```
PS C:\Users\hinhn\.vscode\LTHDT_Java> ^C
PS C:\Users\hinhn\.vscode\LTHDT_Java>
PS C:\Users\hinhn\.vscode\LTHDT_Java>  c:; cd 'c:\Users\hinhn\.vscode\LTHDT_Java'; & 'C:\Program Files\Java\
workspaceStorage\d9166f8520ac87f203d46d91813cd03e\redhat.java\jdt_ws\LTHDT_Java_2392d4a3\bin' 'CountingArray
 Nhap so phan tu cua mang : 4
Input arr[0]: 1,2 1,4 1,6 1,8
Input arr[1]: Input arr[2]: Input arr[3]:

Mang sau khi da sap xep tu be den lon:
1.2 1.4 1.6 1.8
Tong cac phan tu trong mang: 5.999999999999999
Trung binh cong cac gia tri trong mang: 1.4999999999999998
PS C:\Users\hinhn\.vscode\LTHDT_Java>
```

Hình 22 – Kết quả 6.5