BÁO CÁO THỰC HÀNH LAB 1
LẬP TRÌNH HƯỚNG ĐỐI TƯỢNG

Mục lục nội dung

Mục lục hình ảnh

1 First Programs

2.2.1 Write, compile the first Java application:

```java
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Xin chao \n Cac ban");
        System.out.println("Hello \t world! ");
    }
}
```

Figure 1 : First Java application

Kết quả

```
C:\Java\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ ID
Xin chao
 Cac ban
Hello    world!

Process finished with exit code 0
```

Figure 2 : Kết quả 2.2.1

2.2.2 Write, compile the first dialog Java program

```java
import javax.swing.*;

new *
public class FirstDialog {
    new *
    public static void main(String[] args) {
        JOptionPane.showMessageDialog( parentComponent: null,  message: " Hello world! How are you !");
        System.exit( status: 0);
    }
}
```

Figure 3: First dialog java program

Kết quả:

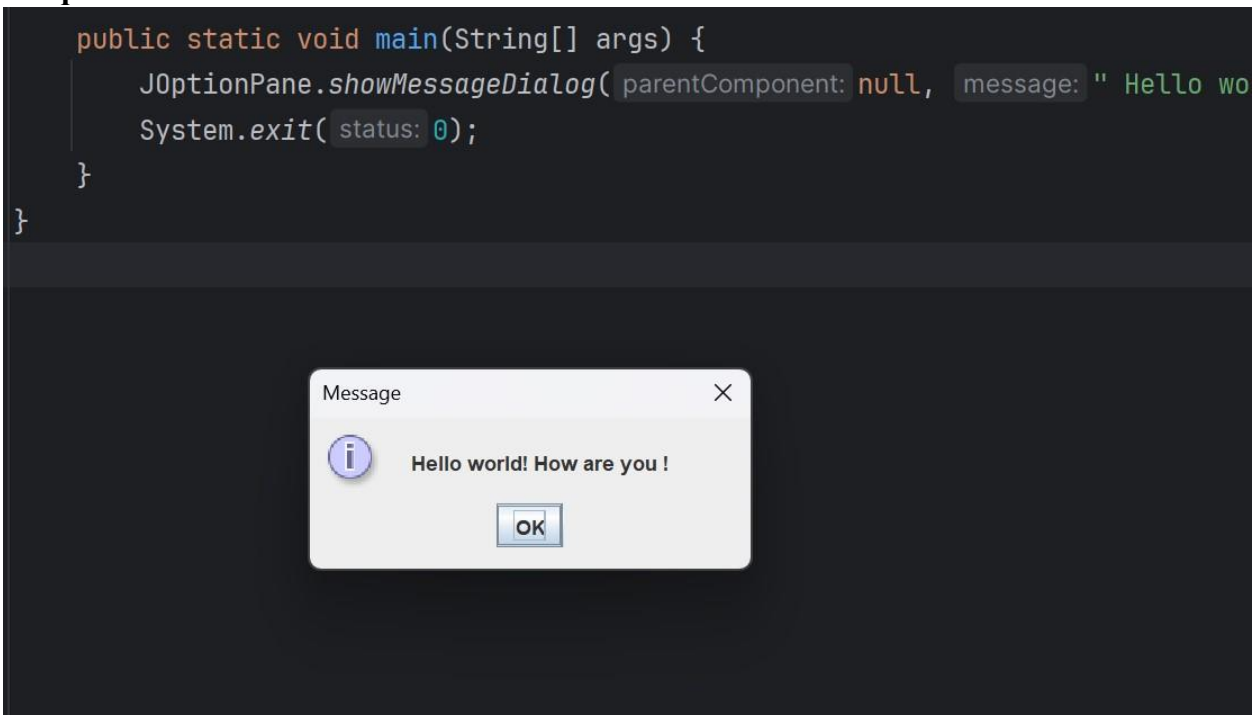


Figure 4: Kết quả 2.2.2

2.2.3 Write, compile the first input dialog Java application

```java
package lab01;

import javax.swing.*;

public class HelloNameDialog {
```

```
    public static void main(String[] args) {
        String result; // tao 1 chuoi
        result = JOptionPane.showInputDialog("Please enter your name:
");
        JOptionPane.showMessageDialog(null,"HI" + result + "!");
        System.exit(0); // thoat khoi ctrinh
}
```

Kết quả:

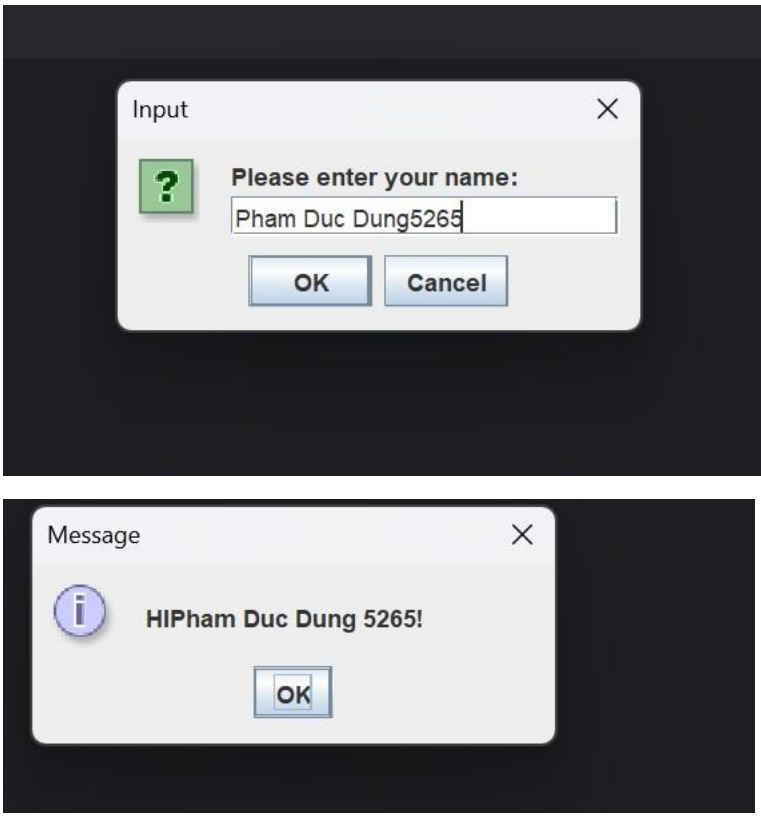


Figure 5: kết quả 2.2.3

2.2.4 Write, compile, and run the following example:

```java
package lab01;
import javax.swing.*;

new *
public class ShowTwoNumbers {
    new *
    public static void main(String[] args) {
        String strNum1, strNum2;
        String strNotification = "You have just entered: ";

        strNum1 = JOptionPane.showInputDialog( parentComponent: null,
                message: "Please input the first number: ", title: "Input the first number",
                JOptionPane.INFORMATION_MESSAGE);
        strNotification += strNum1 + " and ";

        strNum2 = JOptionPane.showInputDialog( parentComponent: null,
                message: "Please input the second number: ", title: "Input the second number",
                JOptionPane.INFORMATION_MESSAGE);
        strNotification += strNum2;

        JOptionPane.showMessageDialog( parentComponent: null, strNotification,
                title: "Show two numbers", JOptionPane.INFORMATION_MESSAGE);
        System.exit( status: 0);
    }
}
```

Figure 6: Code 2.2.4

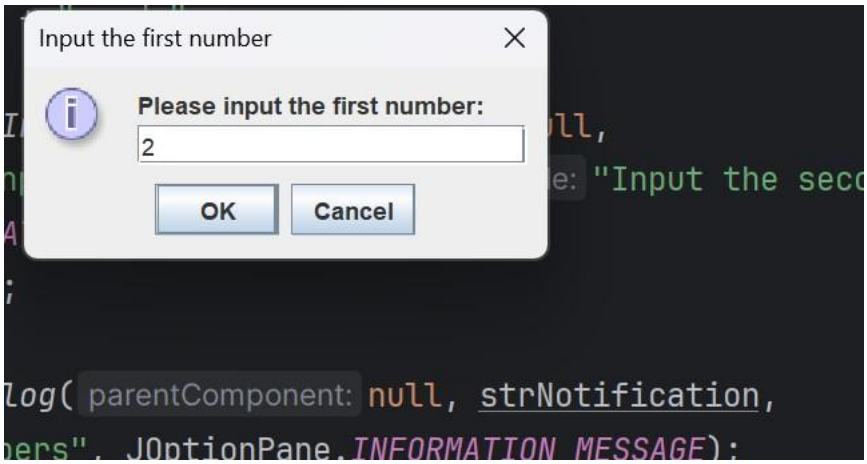


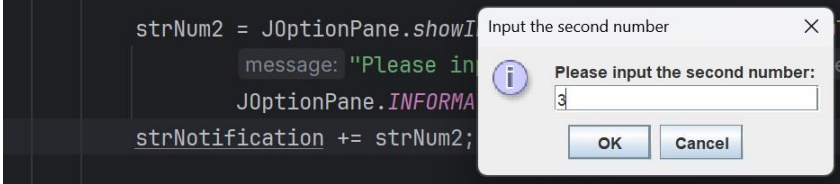
Figure 7: Kết quả 2.2.4

```java
public class ShowTwoNumbers {
    new *
    public static void main(String[] args) {
        String strNum1, strNum2;
        String strNotification = "You have just entered: ";

        strNum1 = JOptionPane.showInputDialog( parentComponent: null,
                message: "Please input the first number: ", title: "Input the first number",
                JOptionPane.INFORMATION_MESSAGE);
        strNotification += strNum1 + " and ";

        strNum2 = JOptionPane.showI
                message: "Please in
                JOptionPane.INFORMA
        strNotification += strNum2;

        JOptionPane.showMessageDialog( parentComponent: null, strNotification,
                title: "Show two numbers", JOptionPane.INFORMATION_MESSAGE);
        System.exit( status: 0);
    }
}
```



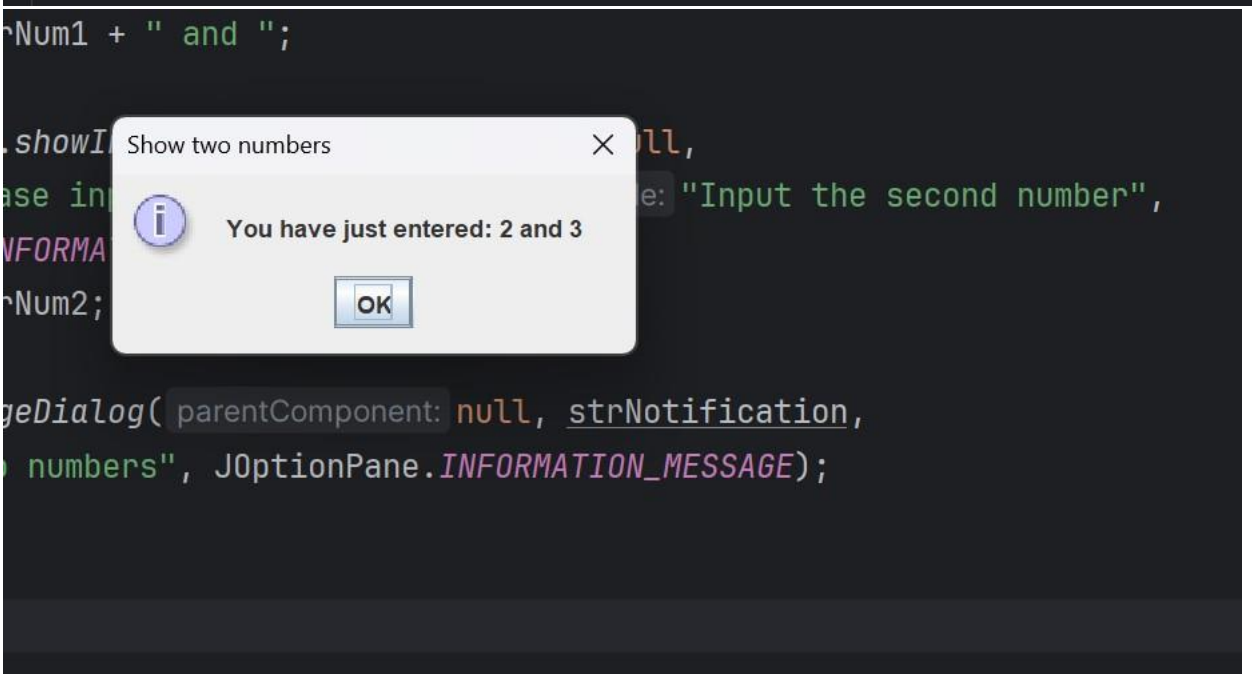


Figure 8 Kết quả 2.2.4

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

- To convert from String to double, you can use

  `double num1 = Double.parseDouble(strNum1)`

- Check the divisor of the division

```java
package lab01;
import java.util.Scanner;
new *
public class bai2_2_5 {
        new *
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);

            System.out.print("Enter first number: ");
            String strNum1 = scanner.nextLine();
            double num1 = Double.parseDouble(strNum1);

            System.out.print("Enter second number: ");
            String strNum2 = scanner.nextLine();
            double num2 = Double.parseDouble(strNum2);


            double sum = num1 + num2;
            double difference = num1 - num2;
            double product = num1 * num2;
            double quotient = 0.0;

            //check
            if (num2 != 0) {
                quotient = num1 / num2;
            } else {
                System.out.println("Khong duoc chia cho 0.");
            }

            System.out.println("Sum: " + sum);
            System.out.println("Difference: " + difference);
            System.out.println("Product: " + product);

            // Check
            if (num2 != 0) {
                System.out.println("Quotient: " + quotient);
            }
        }
}
```

Figure 9: Code 2.2.5

Kết quả :

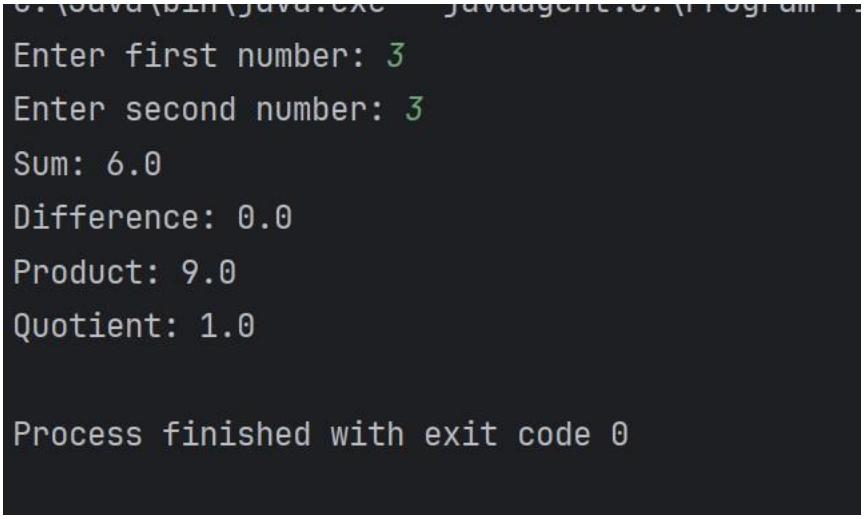


Figure 10: Kếu quả 2.2.5

2.2.6 Write a program to solve :

```
package lab01;

import javax.swing.*;

public class Bai2_2_6 {
    public static void main(String[] args) {
        // Giai phuong trinh bac nhat
        JOptionPane.showMessageDialog(null, "Giai phuong trinh
bac nhat: ax+b=0");
        String str1 = JOptionPane.showInputDialog(null,"Pleas
input the a number: ","Input the a
number",JOptionPane.INFORMATION_MESSAGE);
        String str2 =
JOptionPane.showInputDialog(null,"Pleas input the b number:
","Input the b number",JOptionPane.INFORMATION_MESSAGE);
double a = Double.parseDouble(str1);         double b =
Double.parseDouble(str2);         if (a == 0){
if (b == 0)
JOptionPane.showMessageDialog(null,"Phuong trinh vo so nghiem");
else JOptionPane.showMessageDialog(null,"Phuong trinh vo
nghiem");
        }
        else JOptionPane.showMessageDialog(null,"Nghiem cua
phuong trinh la: "+(-b/a));
        // Giai he phuong trinh bac nhat hai an
        JOptionPane.showMessageDialog(null, "Giai he phuong
trinh bac nhat: \n a*x1 + b*x2 = e \n c*x1 + d*x2 = f");
String str21 = JOptionPane.showInputDialog(null,"Pleas input
the a number: ","Input the a
number",JOptionPane.INFORMATION_MESSAGE);
```

```
        String str22 = JOptionPane.showInputDialog(null,"Pleas
input the b number: ","Input the b
number",JOptionPane.INFORMATION_MESSAGE);
        String str23 = JOptionPane.showInputDialog(null,"Pleas
input the e number: ","Input the e
number",JOptionPane.INFORMATION_MESSAGE);         double a2 =
Double.parseDouble(str21);          double b2 =
Double.parseDouble(str22);          double e2 =
Double.parseDouble(str23);
        String str24 = JOptionPane.showInputDialog(null,"Pleas
input the c number: ","Input the c
number",JOptionPane.INFORMATION_MESSAGE);
        String str25 = JOptionPane.showInputDialog(null,"Pleas
input the d number: ","Input the d
number",JOptionPane.INFORMATION_MESSAGE);
        String str26 = JOptionPane.showInputDialog(null,"Pleas
input the f number: ","Input the f
number",JOptionPane.INFORMATION_MESSAGE);         double c2 =
Double.parseDouble(str24);          double d2 =
Double.parseDouble(str25);          double f2 =
Double.parseDouble(str26);          double x21 = (e2*d2-
b2*f2)/(a2*d2-b2*c2);          double x22 = (a2*f2-
e2*c2)/(a2*d2-b2*c2);
        JOptionPane.showMessageDialog(null, "He co nghiem
(x1;x2) la ("+x21+";"+x22+")");
        // Giai phuong trinh bac hai
        JOptionPane.showMessageDialog(null, "Giai phuong trinh
bac hai: ax^2+bx+c=0");
        String str31 = JOptionPane.showInputDialog(null,"Pleas
input the a number: ","Input the a
number",JOptionPane.INFORMATION_MESSAGE);
        String str32 = JOptionPane.showInputDialog(null,"Pleas
input the b number: ","Input the b
number",JOptionPane.INFORMATION_MESSAGE);
        String str33 = JOptionPane.showInputDialog(null,"Pleas
input the c number: ","Input the c
number",JOptionPane.INFORMATION_MESSAGE);         double a3 =
Double.parseDouble(str31);          double b3 =
Double.parseDouble(str32);          double c3 =
Double.parseDouble(str33);          if (a3 == 0){
            JOptionPane.showMessageDialog(null, "Day khong phai
phuong trinh bac hai");
        }
else {
            double delta = b3*b3 - 4*a3*c3;
if (delta > 0){
```

```
                JOptionPane.showMessageDialog(null, "Phuong trinh
co 2 nghiem phan biet la: "+((b3+Math.sqrt(delta))/(2*a3))+" va
"+((-b3-
Math.sqrt(delta))/(2*a3)));
            }
            else if (delta == 0){
                JOptionPane.showMessageDialog(null, "Phuong trinh
co nghiem kep la: "+((-b3)/(2*a3)));
            }
            else JOptionPane.showMessageDialog(null, "Phuong
trinh vo nghiem");
        }
    }
}
```

Kết quả:

1. PT bậc nhất :

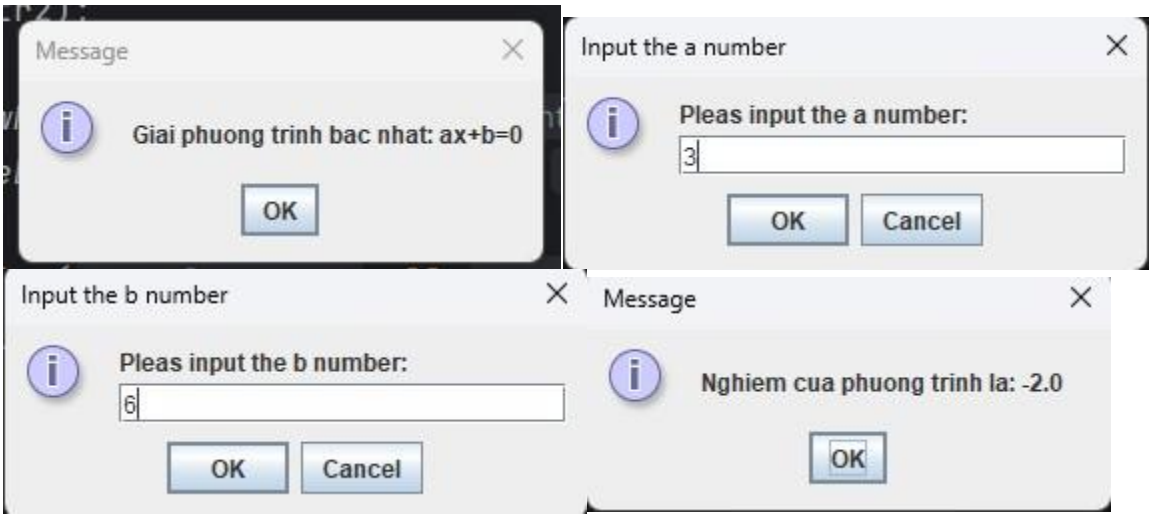


Figure 11: Kết quả 2.2.6 pt bậc 1

2. Hệ pt bậc nhất:

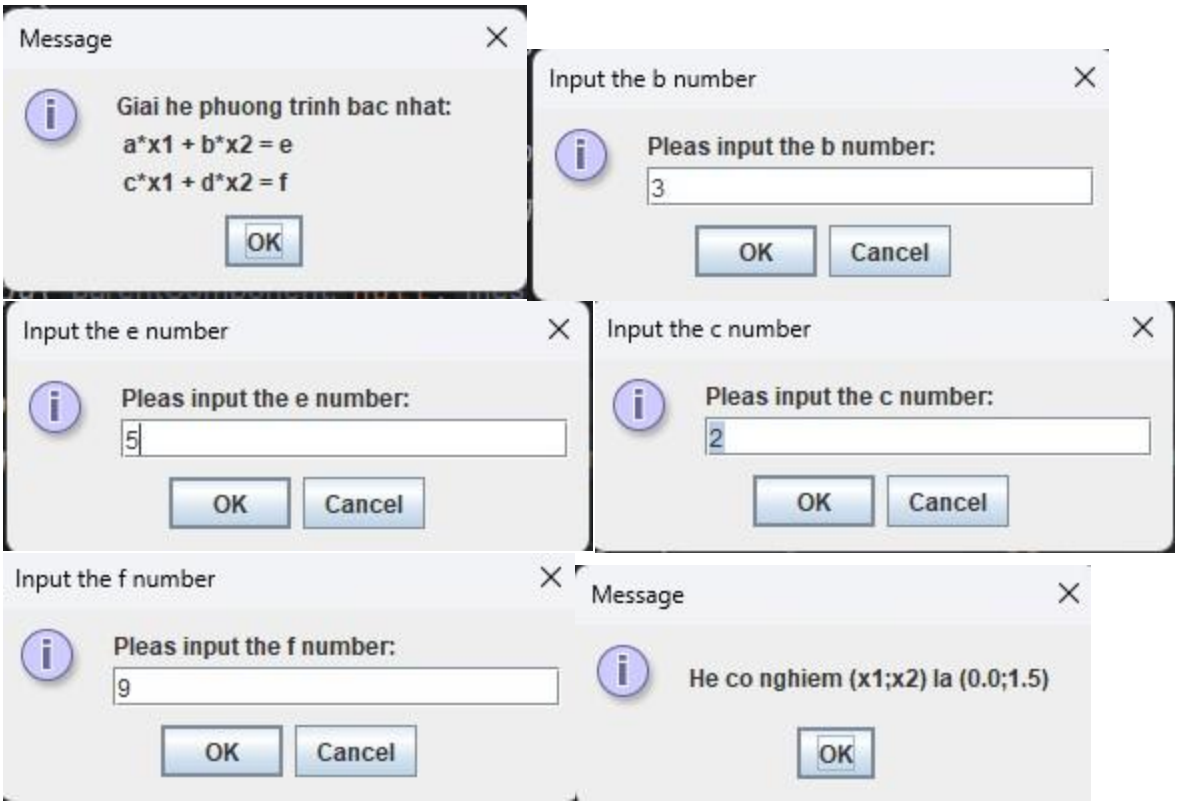


Figure 12: Kết quả 2.2.6 HPT

3. PT bậc 2:

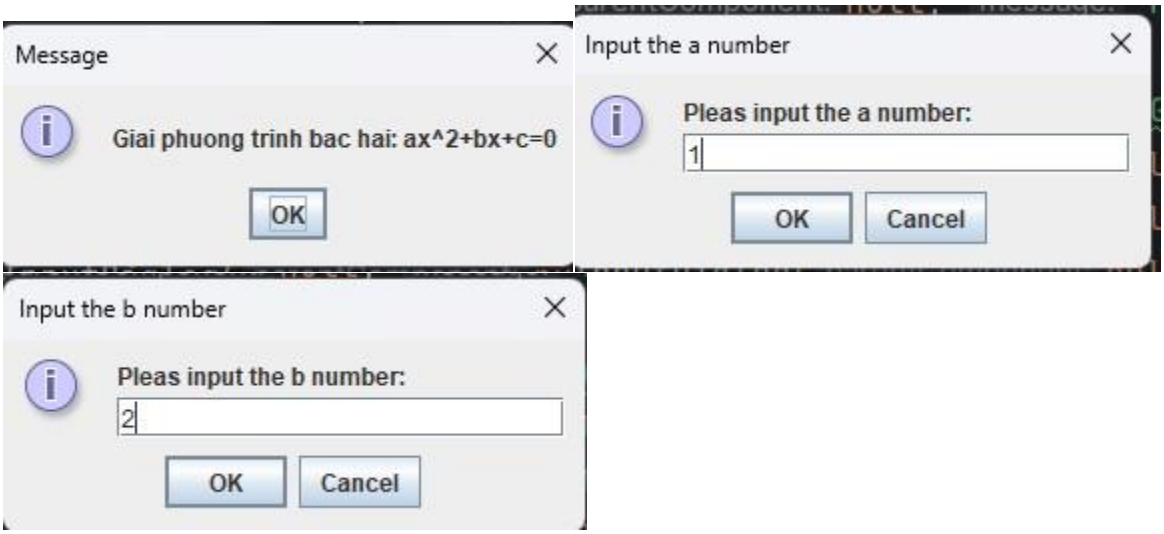


Figure 13: Kếu quả 2.2.6 PT bậc 2

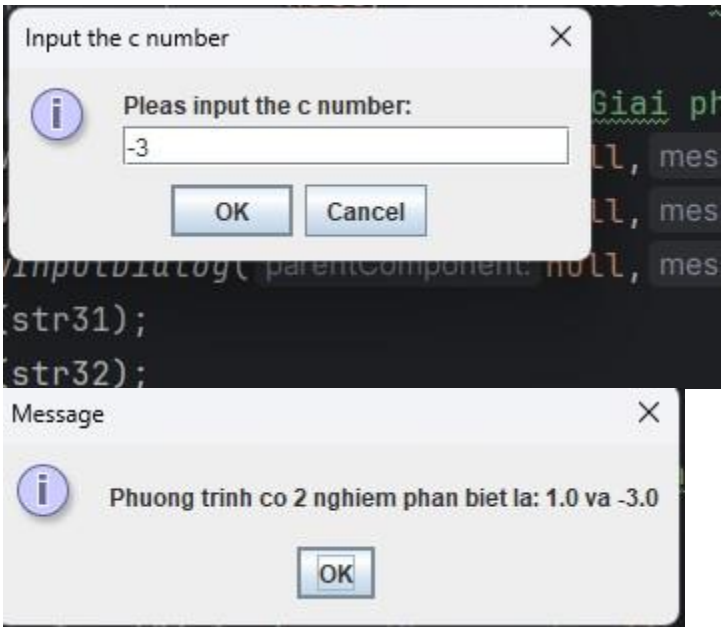


Figure 14: Kếu quả 2.2.6 PT bậc 2

6. Exercises

6.1 Write, compile and run the ChoosingOption program

```
package week1;

import javax.swing.*;


public class ChoosingOption {

    public static void main(String[] args) {
        int option = JOptionPane.showConfirmDialog(null,"Do you want to change to the first class tickets?");
        JOptionPane.showMessageDialog(null, "You've chosen: "+(option == JOptionPane.YES_OPTION?"Yes":"No"));
        System.exit(0);
    }
}
```

Figure 15: Code 6.1

Kết quả :

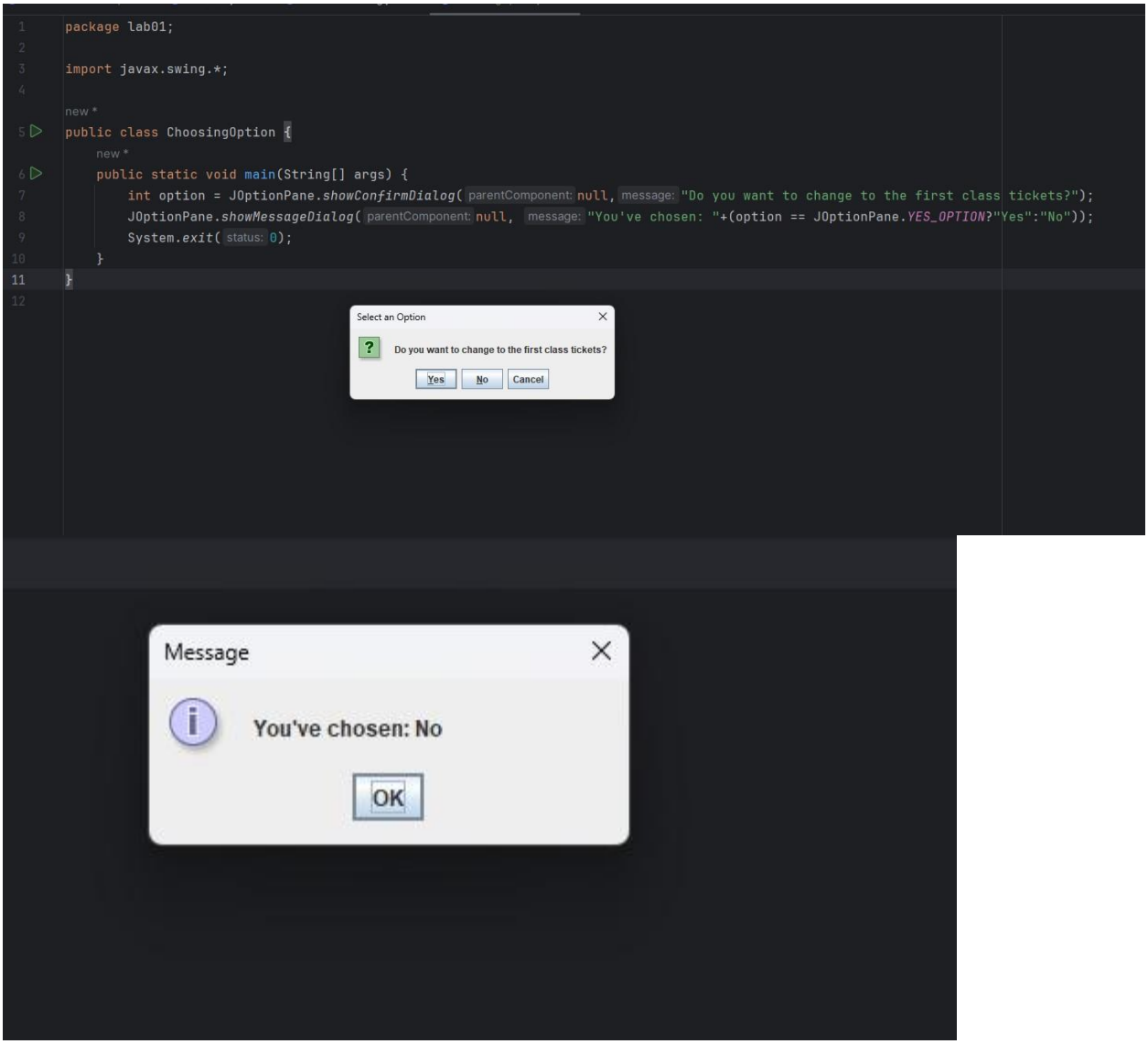


Figure 16: Kết quả 6.1

- Khi ấn cancel, cũng đẩy ra 1 Dialog chosen No

Câu hỏi:

Để tùy chỉnh đoạn code customize chỉ có 2 lựa chọn, ta có thể làm như sau:

```java
import javax.swing.*;

new *
public class ChoosingOption {
    new *
    public static void main(String[] args) {
        Object[] options = {"Yes", "No"};
        int option = JOptionPane.showOptionDialog( parentComponent: null,
                message: "Do you want to change to the first class tickets?",
                title: "Confirmation",
                JOptionPane.YES_NO_OPTION,
                JOptionPane.QUESTION_MESSAGE,
                icon: null,
                options,
                options[0]);

        if (option == JOptionPane.YES_OPTION) {
            JOptionPane.showMessageDialog( parentComponent: null, message: "You've chosen: Yes");
        } else if (option == JOptionPane.NO_OPTION) {
            JOptionPane.showMessageDialog( parentComponent: null, message: "You've chosen: No");
        } else {
            JOptionPane.showMessageDialog( parentComponent: null, message: "Dialog closed without selection");
        }

        System.exit( status: 0);
    }
}
```

Sẽ có kết quả là :

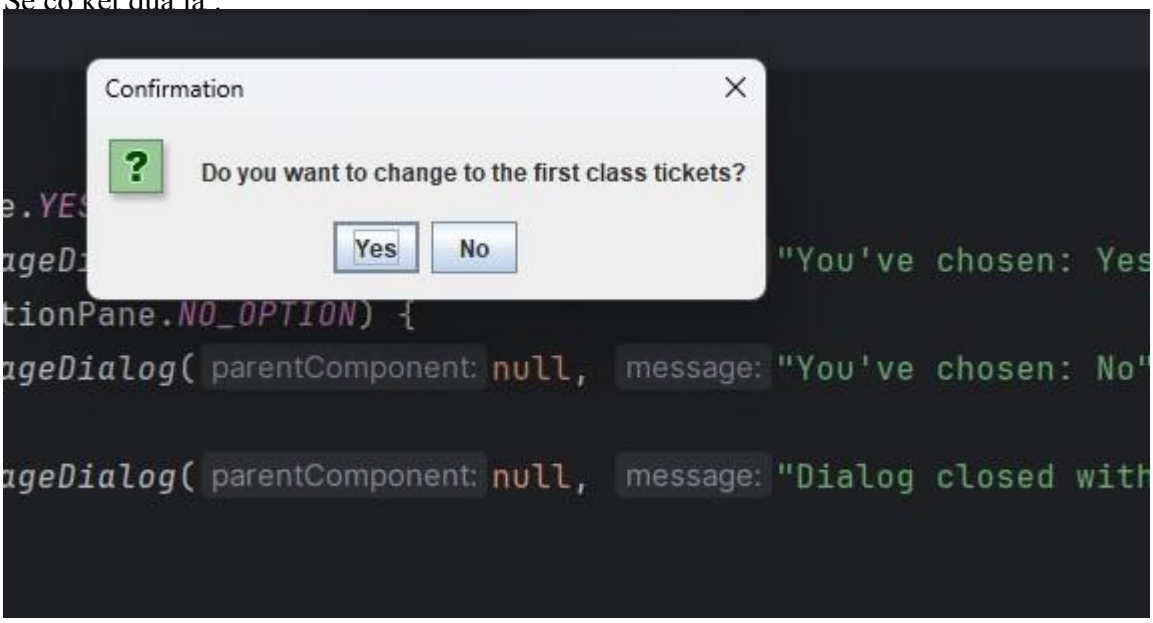


Figure 17: Câu hỏi 6.1

6.2: Write a program for input/output from keyboard

```java
package lab01;

import java.util.Scanner;

new *
public class InputFromKeyboard {
    new *
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("What's your name?");
        String strName = sc.nextLine();
        System.out.println("How old are you?");
        int iAge = sc.nextInt();
        System.out.println("How tall are you (m)?");
        double dHeight = sc.nextDouble();

        System.out.println("Mrs/Ms. "+strName+", "+iAge+" years old. "+"Your height is "+dHeight+".");
    }
}
```

Figure 18: Code phần 6.2

Kết quả:

```
What's your name?
Pham Duc Dung
How old are you?
21
How tall are you (m)?
1.81
Mrs/Ms. Pham Duc Dung, 21 years old. Your height is 1.81.

Process finished with exit code 0
```

Figure 19: Kết quả 6.2

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

```java
new *
public class Triangle {
    new *
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Nhap vao chieu cao n: ");
        int n = sc.nextInt();
        for(int i = 1;i<=n;i++) {
            for (int j = 1;j<=n-i;j++){
                System.out.print(" ");
            }
            for (int j = 1;j<=2*i-1;j++){
                System.out.print("*");
            }
            System.out.println("");
        }
    }
}
```

Figure 20: Code 6.3

Kết quả:

```
C:\Java\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2023.2.2\lib\
Nhap vao chieu cao n: 5
    *
   ***
  *****
 *******
*********

Process finished with exit code 0
```

Figure 21: Kết quả 6.3

6.4 Write a program to display the number of days of a month

```
package lab01;

import javax.swing.*;

public class TheNumberOfDayOfAMonth {
public static void main(String[] args) {
        JOptionPane.showMessageDialog(null, "Chuong trinh tim
so ngay cua mot thang");          loop: do {
            String str1 = JOptionPane.showInputDialog(null,"Nhap
```

```
vao thang/nam muon tim: ", "Nhap");
            String arr[] = str1.split("/");
int nam = Integer.parseInt(arr[1]);
switch (arr[0]){                case "1":
case "Jan.":                case "Jan":
                case "January":
                case "3":
case "March":
case "Mar.":
case "Mar":
case "5":
case "May":
case "7":
case "July":
case "Jul":
case "8":
case "August":
case "Aug.":
case "Aug":
case "10":
                case "October":
case "Oct.":
case "Oct":
case "12":
                case "December":
case "Dec.":
case "Dec":{
                    JOptionPane.showMessageDialog(null,"Thang
nay co 31 ngay");
                    break loop;
                }
case "4":                   case
"April":                   case
"Apr.":                   case
"Apr":                   case "6":
case "June":
case "Jun":                   case
"9":                   case
"September":
case "Sept.":
case "Sep":                   case
"11":
                case "November":
case "Nov.":
```

```
                case "Nov":{
                    JOptionPane.showMessageDialog(null,"Thang
nay co 30 ngay");
                    break loop;
                }
case "2":                   case
"February":
case "Feb.":
case "Feb":{
                    if (nam%400==0||(nam%4==0&&nam%100!=0)){
JOptionPane.showMessageDialog(null,
"Thang nay co 29 ngay");
}
                    else JOptionPane.showMessageDialog(null,
"Thang nay co 28 ngay");
break loop;
                }
                default:{
                    JOptionPane.showMessageDialog(null,"Nhap
loi");
                    int option =
JOptionPane.showConfirmDialog(null,"Ban co muon nhap lai
khong?");
                    if (option == JOptionPane.YES_OPTION)
continue;
                    else break loop;
                }
            }
}
        while (true);
    }
}
```

Kết quả:

Figure 22: Kết quả 6.4

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

```java
public class Sort_Sum_Average {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Nhap vao so phan tu cua mang: ");
        int n = sc.nextInt();
        long sum=0;
        int arr[]= new int[1000];
        for (int i =0; i<n; i++){
            System.out.print("arr["+i+"]=");
            arr[i]= sc.nextInt();
            sum+=arr[i];
        }
        double average=(double) sum/n;
        System.out.println("Tong mang la: "+sum);
        System.out.println("Trung binh mang la: "+average);
        for(int i=0;i<n-1;i++)
        {
            for (int j=i;j<n;j++){
                if(arr[i]>arr[j]){
                    int tam = arr[i];
                    arr[i]=arr[j];
                    arr[j]=tam;
                }
            }
        }
        for (int i=0;i<n;i++){
            System.out.print(arr[i]+" ");
        }
    }
}
```

Figure 23: Code 6.5

Kết quả:

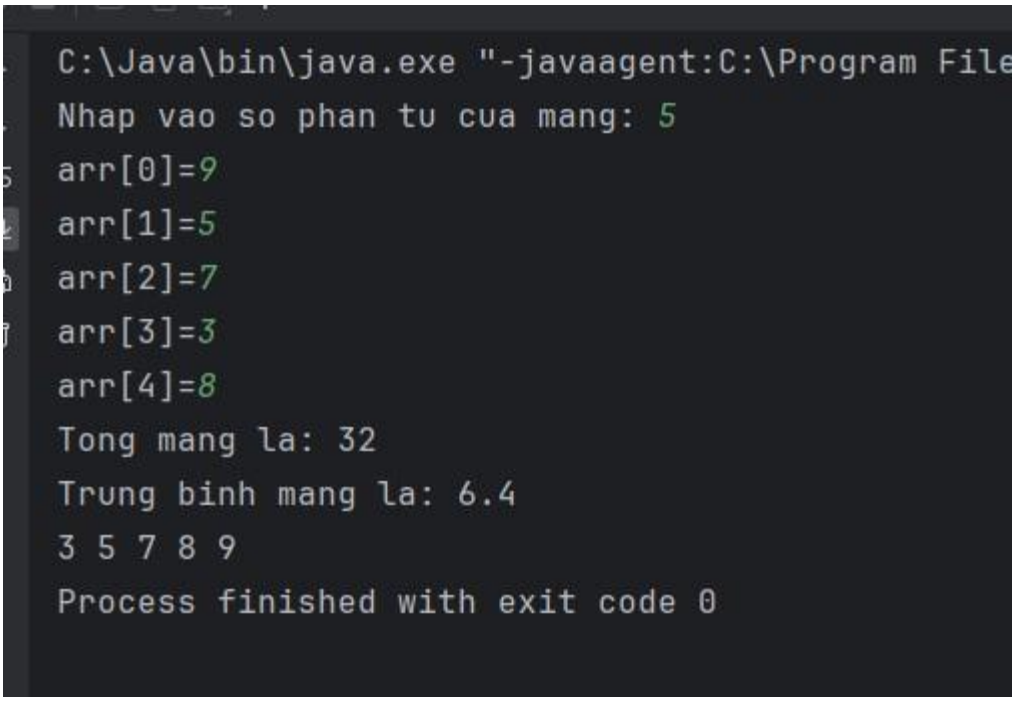


Figure 24: Kết quả 6.5

6.6 Write a java program to add two matrices of the same size

```
package lab01;

import java.util.Scanner;

public class AddTwoMatrices {
    public static void main(String[] args)
{          Scanner sc = new
Scanner(System.in);          int a[][] = new
int[20][20];          int b[][] = new
int[20][20];
        System.out.println("Cong hai ma tran :");
System.out.print("Nhap vao so hang: ");
int m = sc.nextInt();
        System.out.print("Nhap vao so cot: ");
int n = sc.nextInt();
        System.out.println("Nhap ma tran
1:");          for (int i = 0; i<m; i++){
for (int j = 0; j<n; j++){
                System.out.print("a["+i+"]["+j+"]=");
a[i][j] = sc.nextInt();
            }
        }
        System.out.println("Nhap ma tran
2:");          for (int i = 0; i<m; i++){
for (int j = 0; j<n; j++){
```

```
                System.out.print("b["+i+"]["+j+"]=");
b[i][j] = sc.nextInt();
            }
        }
        System.out.println("Ma tran 1 la:
");          for (int i = 0; i<m; i++){
for (int j = 0; j<n; j++){
                System.out.print(a[i][j]+"\t");
            }
            System.out.println(" ");
        }
        System.out.println("Ma tran 2 la:
");          for (int i = 0; i<m; i++){
for (int j = 0; j<n; j++){
                System.out.print(b[i][j]+"\t");
            }
            System.out.println(" ");
        }
        System.out.println("Tong hai ma tran la:
");          for (int i = 0; i<m; i++){
for (int j = 0; j<n; j++){
                System.out.print(a[i][j]+b[i][j]+"\t");
            }
            System.out.println(" ");
        }
    }
}
```

Kết quả:

```
Cong hai ma tran :
Nhap vao so hang: 3
Nhap vao so cot: 3
Nhap ma tran 1:
a[0][0]=1
a[0][1]=2
a[0][2]=3
a[1][0]=4
a[1][1]=5
a[1][2]=6
a[2][0]=7
a[2][1]=8
a[2][2]=9
Nhap ma tran 2:
b[0][0]=9
b[0][1]=8
b[0][2]=7
b[1][0]=6
b[1][1]=5
b[1][2]=4
b[2][0]=3
b[2][1]=2
b[2][2]=1
Ma tran 1 la:
1   2   3
4   5   6
7   8   9
Ma tran 2 la:
9   8   7
6   5   4
3   2   1
Tong hai ma tran la:
10  10  10
10  10  10
10  10  10
```

Figure 25: Kết quả 6.6