



Lab Task

Subject: Elementary Programming

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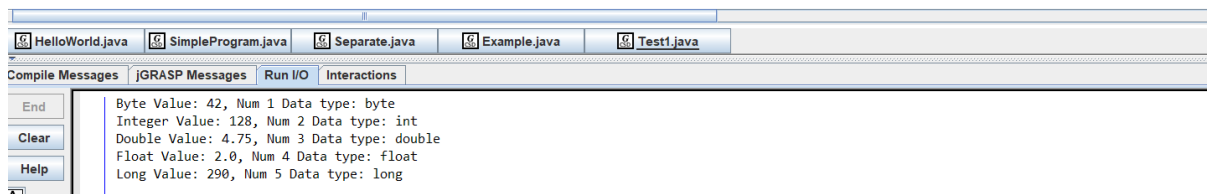
الجهة: الحاسب آلي

رقم الشعبة: 4476

Introductory Task

Part 1

```
public class Test1 {  
    public static void main (String [] args){  
        byte byteValue = 42;  
        int intValue = 128;  
        double doubleValue = 4.75;  
        float floatValue = 2.0f;  
        long longValue = 290;  
  
        System.out.println("Byte Value: " +byteValue +", Num 1 Data type: " +Byte.TYPE);  
        System.out.println("Integer Value: " +intValue +", Num 2 Data type: " +Integer.TYPE);  
        System.out.println("Double Value: " +doubleValue +", Num 3 Data type: " +Double.TYPE);  
        System.out.println("Float Value: " +floatValue +", Num 4 Data type: " +Float.TYPE);  
        System.out.println("Long Value: " +longValue +", Num 5 Data type: " +Long.TYPE);  
    }  
}
```



Part 2

```

public class Test2{
    public static void main (String[] args){
        int initialValue = 10;
        int changingValue = initialValue;
        changingValue *=3;

        final double PI = 3.14159;

        //PI = 3.14; Compiler Error

        System.out.println("Intital Value: " + initialValue);
        System.out.println("Changing Value: " +changingValue);
        System.out.println("PI Value:" +PI);

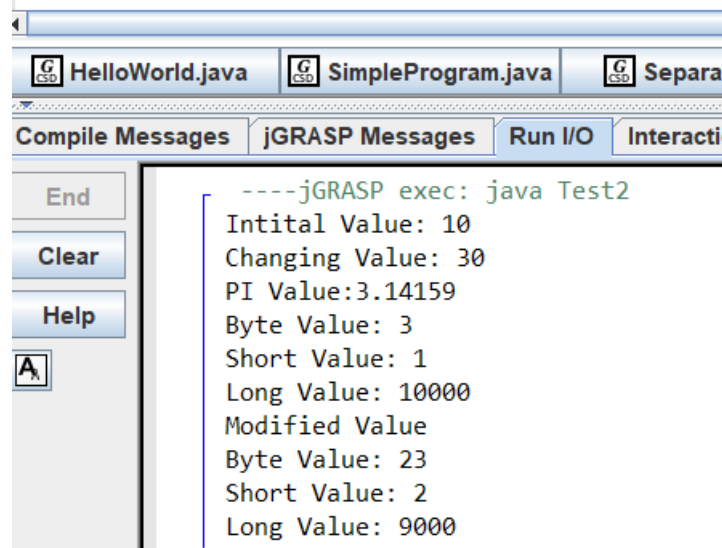
        byte byteValue = 3;
        short shortValue = 1;
        long longValue = 10000;

        System.out.println("Byte Value: " +byteValue);
        System.out.println("Short Value: " +shortValue);
        System.out.println("Long Value: " +longValue);

        byteValue +=20;
        shortValue *=2;
        longValue -=1000;

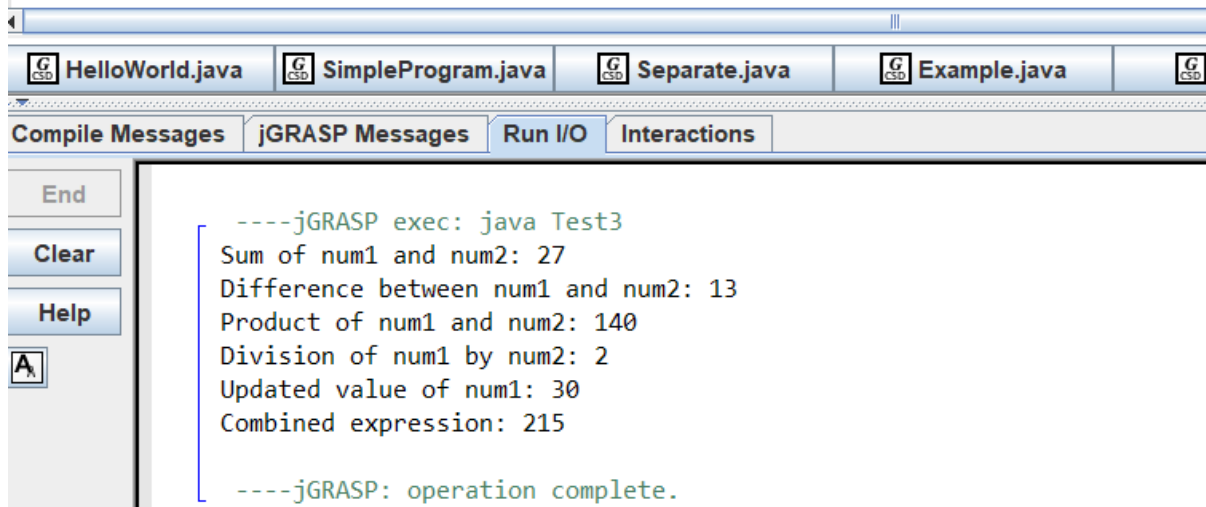
        System.out.println("Modified Value");
        System.out.println("Byte Value: " +byteValue);
        System.out.println("Short Value: " +shortValue);
        System.out.println("Long Value: " +longValue);
    }
}

```



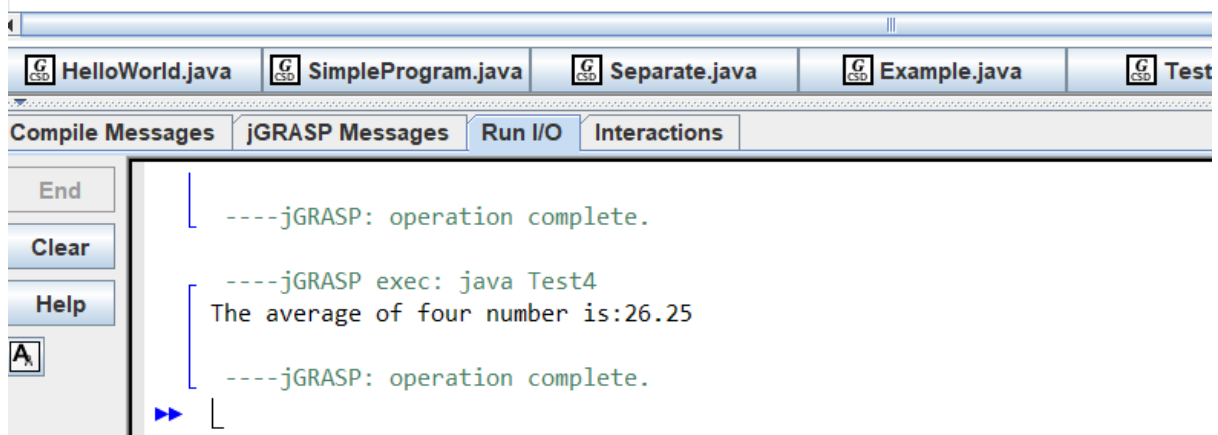
Part 3

```
public class Test3 {  
    public static void main(String[] args) {  
        int num1 = 20;  
        int num2 = 7;  
  
        int sum = num1 + num2;  
        int difference = num1 - num2;  
        int product = num1 * num2;  
        int division = num1 / num2;  
  
        num1 += 10;  
        int combinedExpression = num1 * num2 + 5;  
  
        System.out.println("Sum of num1 and num2: " + sum);  
        System.out.println("Difference between num1 and num2: " + difference);  
        System.out.println("Product of num1 and num2: " + product);  
        System.out.println("Division of num1 by num2: " + division);  
        System.out.println("Updated value of num1: " + num1);  
        System.out.println("Combined expression: " + combinedExpression);  
    }  
}
```



Part 4

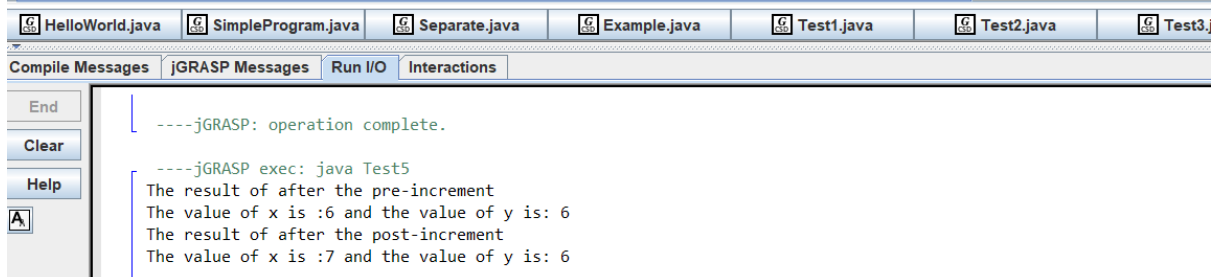
```
public class Test4{  
    public static void main(String [] args){  
        int num1 = 10;  
        int num2 = 20;  
        int num3 = 35;  
        int num4 = 40;  
  
        int sum = num1 + num2 + num3 + num4;  
  
        double average =(double) sum / 4;  
  
        System.out.println("The average of four number is:" +average);  
    }  
}
```



Part 5

```
public class Test5{
    public static void main (String [] args){
        int x = 5;
        int y = x;
        y = ++x;
        System.out.println("The result of after the pre-increment\nThe value of x is : " +x + " and the value of y is: "+y);

        y = x++;
        System.out.println("The result of after the post-increment\nThe value of x is : " +x + " and the value of y is: "+y);
    }
}
```



End
Clear
Help

Compile Messages | jGRASP Messages | Run I/O | Interactions

----jGRASP: operation complete.

----jGRASP exec: java Test5

The result of after the pre-increment
The value of x is :6 and the value of y is: 6
The result of after the post-increment
The value of x is :7 and the value of y is: 6

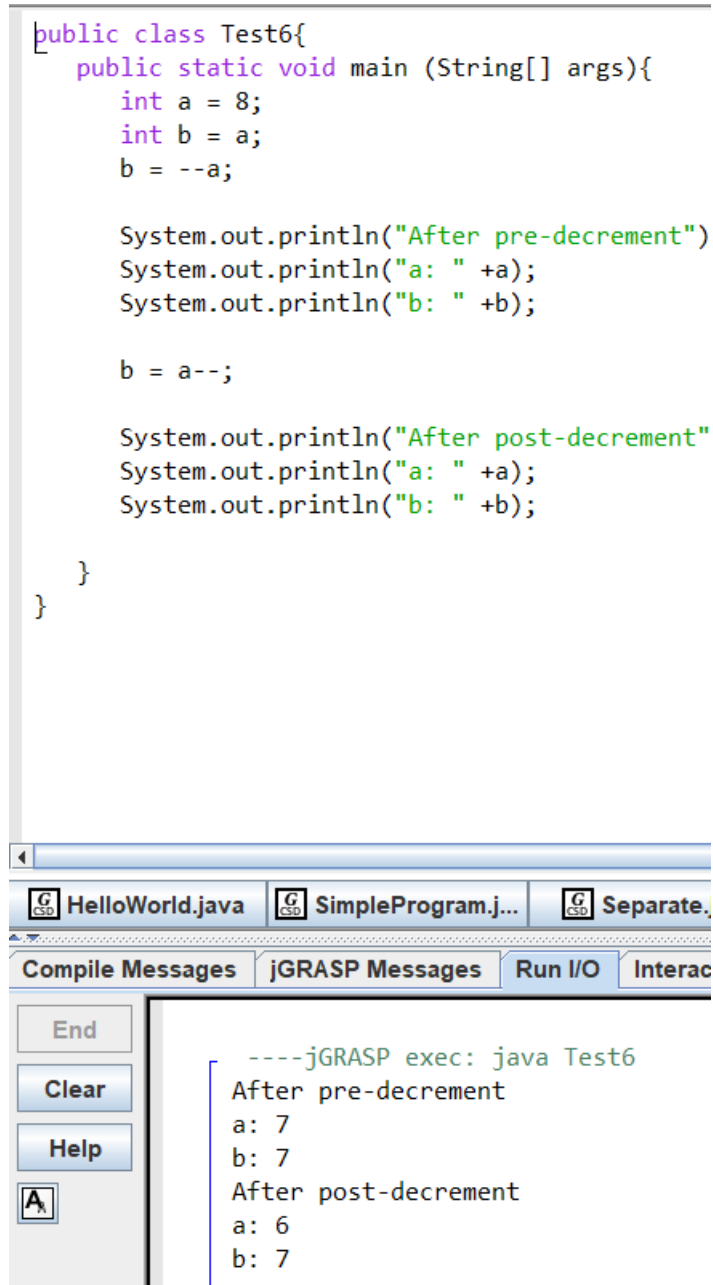
Part 6

```
public class Test6{
    public static void main (String[] args){
        int a = 8;
        int b = a;
        b = --a;

        System.out.println("After pre-decrement")
        System.out.println("a: " +a);
        System.out.println("b: " +b);

        b = a--;

        System.out.println("After post-decrement")
        System.out.println("a: " +a);
        System.out.println("b: " +b);
    }
}
```



The screenshot shows a Java IDE with a code editor and a console. The code editor contains the following Java code:

```
public class Test6{
    public static void main (String[] args){
        int a = 8;
        int b = a;
        b = --a;

        System.out.println("After pre-decrement")
        System.out.println("a: " +a);
        System.out.println("b: " +b);

        b = a--;

        System.out.println("After post-decrement")
        System.out.println("a: " +a);
        System.out.println("b: " +b);
    }
}
```

The IDE's interface includes tabs for 'HelloWorld.java', 'SimpleProgram.j...', and 'Separate...'. Below the tabs are buttons for 'Compile Messages', 'jGRASP Messages', 'Run I/O', and 'Interac'. On the left side of the console, there are buttons for 'End', 'Clear', 'Help', and a text area icon. The console output shows the execution of the program:

```
----jGRASP exec: java Test6
After pre-decrement
a: 7
b: 7
After post-decrement
a: 6
b: 7
```

Answer to the Question No: 1

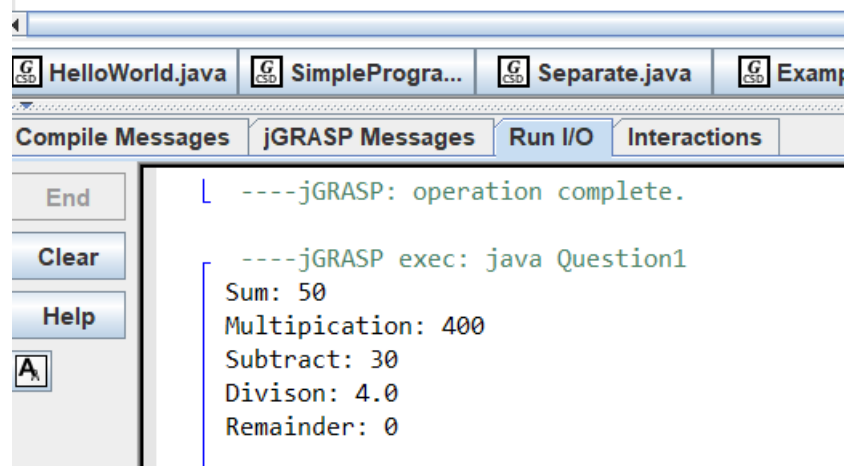
```

public class Question1{
    public static void main(String[] args){
        int num1 = 40;
        int num2 = 10;

        int sum = num1 + num2;
        int multiplication = num1*num2;
        int subtract = num1 - num2;
        double divison = (double) num1/num2;
        int remainder = num1 % num2;

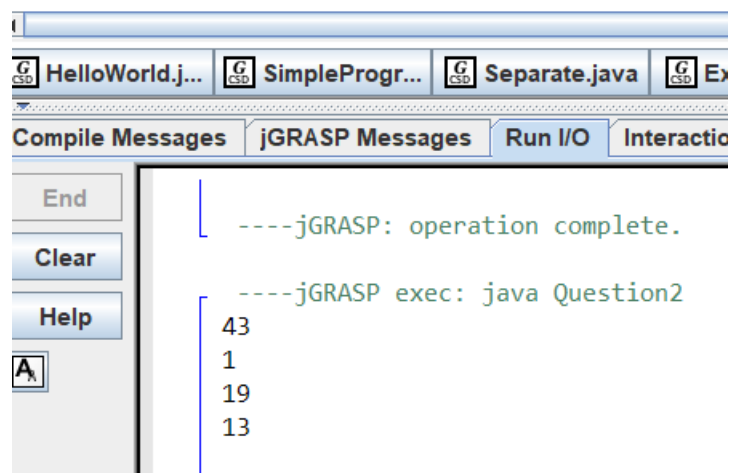
        System.out.println("Sum: "+sum);
        System.out.println("Multiplication: "+multiplication);
        System.out.println("Subtract: "+subtract);
        System.out.println("Divison: "+divison);
        System.out.println("Remainder: "+remainder);
    }
}

```



Answer to the Question No: 2


```
public class Question2 {  
    public static void main (String [] args){  
        System.out.println(-5+8*6);  
        System.out.println((55+9)%9);  
        System.out.println(20+ -3*5/8);  
        System.out.println(5+15/3*2-8%3);  
    }  
}
```



Answer to the Question No: 3

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HelloWorld...	SimplePro...	Separate.ja...	Example.ja...	Test1.java	Test2.java	
---	--	--	---	---	--	---

A

```
----jGRASP: operation complete.
```

