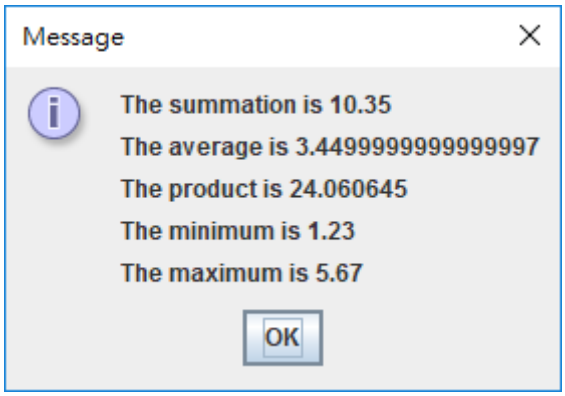
LAB 0306

1. Write an application program that inputs three double numbers from the user by using input dialog and displays the summation, average, product, maximum and minimum of the numbers on the message dialog.

   Please write the program with following requirements.
   1) Define “sum”, “average”, “product”, “max”, “min” functions in the program.
   2) Please do not use instance variable.
   3) The final result should be shown as follows.



2. Write a JavaFX program that determines the change to be dispensed from a vending machine. An item in the machine can cost from 25 cents to one dollar, in 5-cent increments (25, 30, 35, …90,95,100), and the machine accepts only one single dollar bill to pay for the item. For example, a possible sample dialog might be:

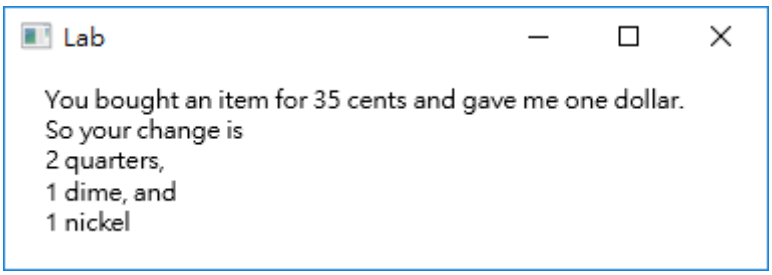
   Enter price of item:
   (from 25 cents to one dollar, in 5-cent increments): 45

   You bought an item for 45 cents and gave me one dollar.
   So your change is
   2 quarters,
   0 dime, and
   1 nickel

   Note:
   Penny=1 cent= 0.01 dollar
   Niclel= 5 cents= 0.05 dollar
   Dime= 10 cents=0.1 dollar
   Quarter=25 cents=0.25 dollar

Please write the program with following requirements.

1) All calculations should be in init() method.
2) The final result should be shown as follows.



3. Write a JavaFX program that inputs 7 data from the user by using input dialog and show the result with the inputting specification and the result of mirroring the object at the center of the stage on the stage. The input data are text, font size, color, window height, window width, text x-coordinate, and text y-coordinate sequentially.

Note:

1) To set the font size, you can refer to following example.

```
// The class: javafx.scene.text.Font
// text is an object of Text
text.setFont(Font.font(20));
```

2) To compare two strings, it is suggested not to use "==" because the "==" operator checks to see if two objects are exactly the same object. It is suggested to use "equals()".
   Example:

```
String s = "test", t = "test";
if (s == t)           // Legal, but usually WRONG.
if (s.equals(t)) // RIGHT
if (s > t)        // ILLEGAL
if (s.compareTo(t) > 0) // CORRECT
```

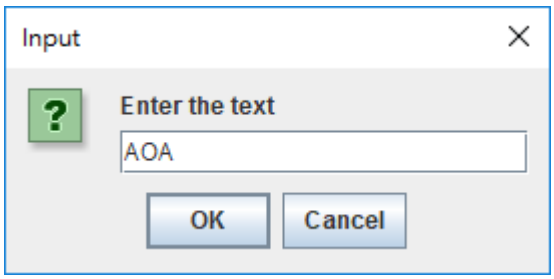
3) To set the color of font, you can refer to following example.

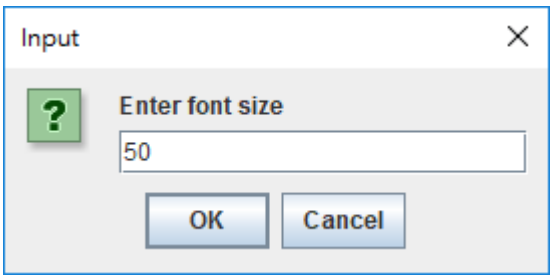
```
// The class: javafx.scene.paint.Color
// text is an object of Text
text.setFill(Color.RED);
```

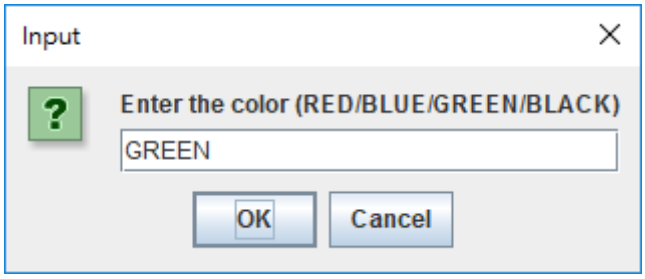
4) To group multiple objects in one group, you can refer to following example.

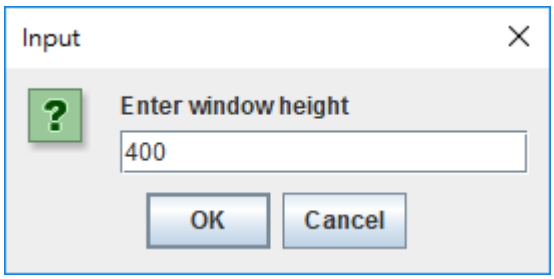
```
Group root = new Group(t1, t2, …);
```

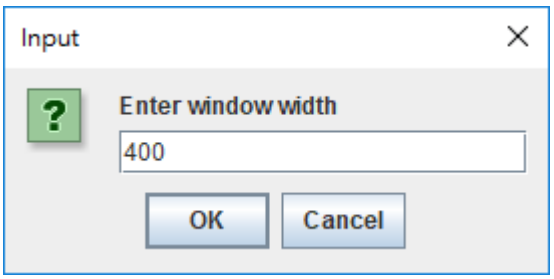
5) The final result should be shown as follows.

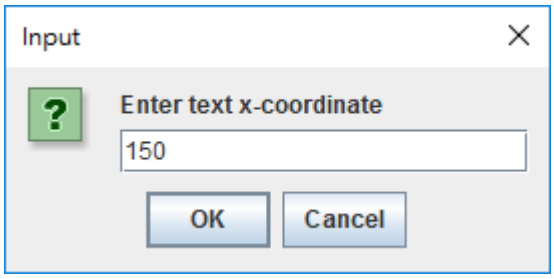

Input
Enter the text
AOA
OK
Cancel

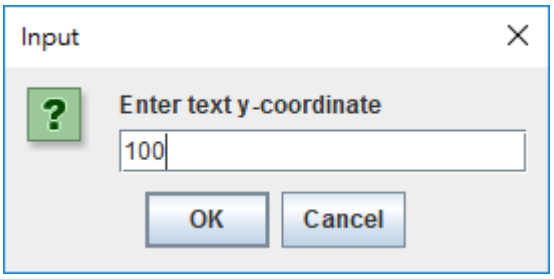

Input
Enter font size
50
OK
Cancel

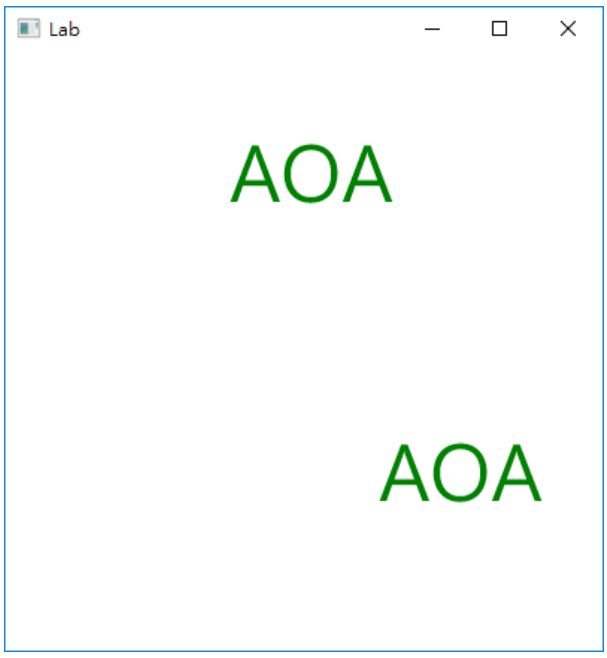

Input
Enter the color (RED/BLUE/GREEN/BLACK)
GREEN
OK
Cancel


Input
Enter window height
400
OK
Cancel


Input
Enter window width
400
OK
Cancel


Input
Enter text x-coordinate
150
OK
Cancel


Input
Enter text y-coordinate
100
OK
Cancel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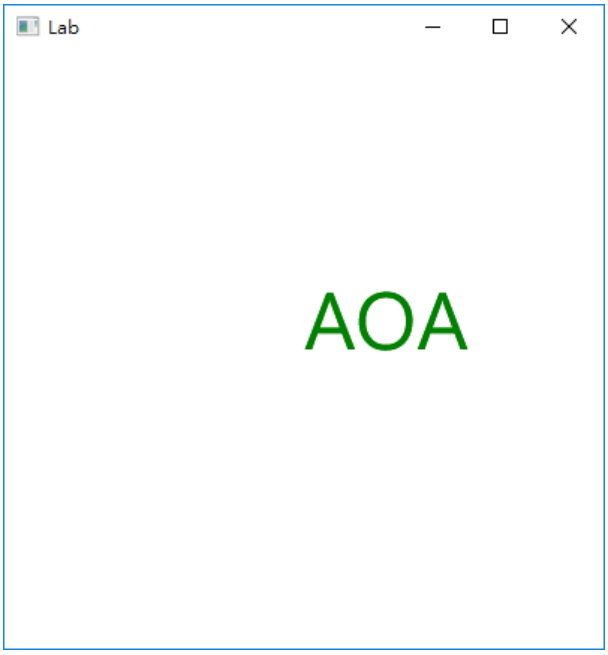
If the x-coordinate and y-coordinate are (200,200), the tow objects will join together.



4. Please modify the code which you implemented in problem 3, let user input the data using only one input dialog and then output the result as follows. The input data in the one-line text area are text, font size, color, window height, window width, text x-coordinate, and text y-coordinate sequentially, which separated by one space.