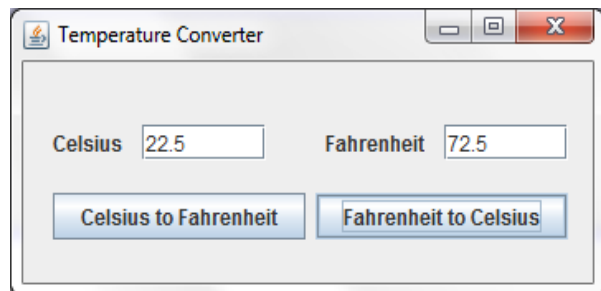
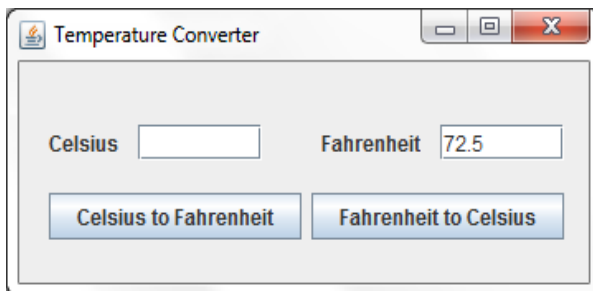
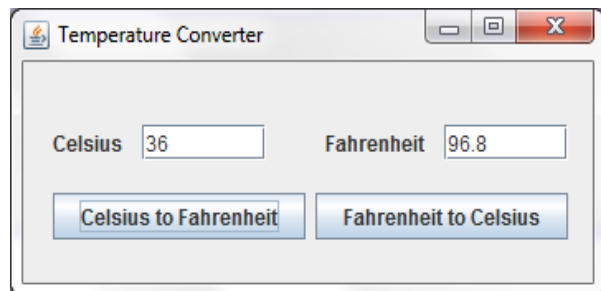
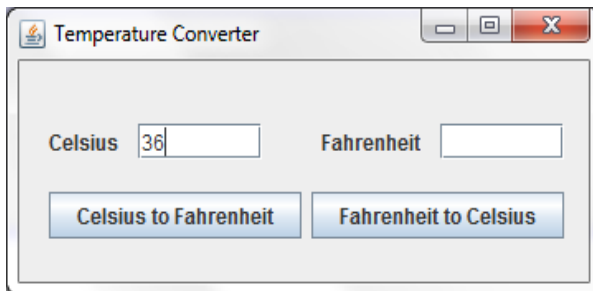




ASSIGNMENT (11)

1. Write a program for a temperature converter that converts from Fahrenheit to Celsius and vice versa, using the following formulas:

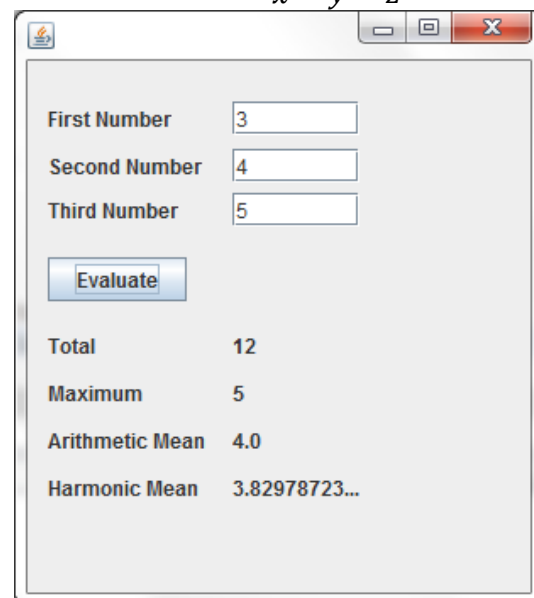
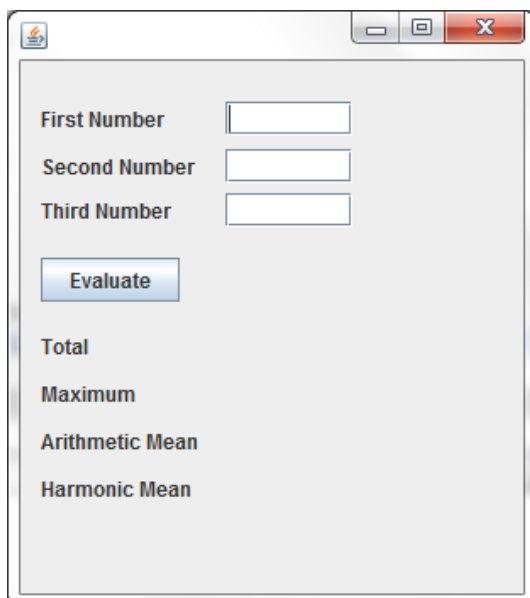
$$Fahrenheit = \left(\frac{9}{5} \times Celsius\right) + 32 \qquad Celsius = \frac{5}{9}(Fahrenheit - 32)$$



2. Write a program that calculates the sum, maximum, arithmetic mean and harmonic mean of three integers.

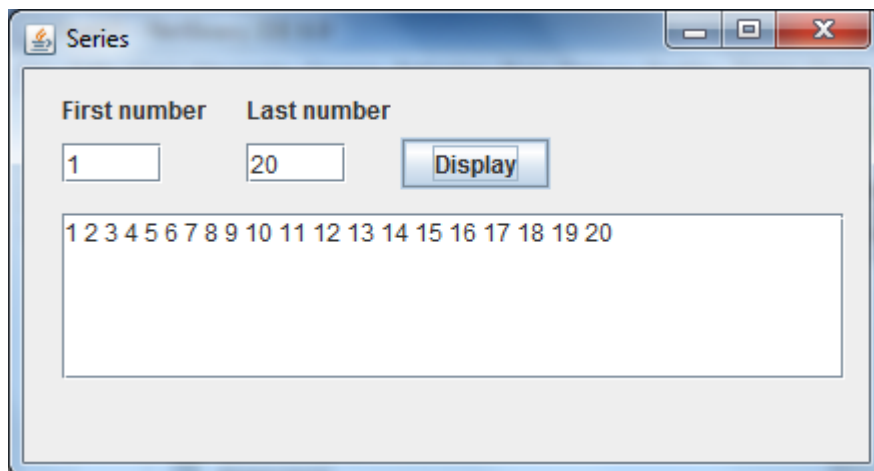
$$Arithmetic\ mean = \frac{x + y + z}{3}$$

$$Harmonic\ mean = \frac{3}{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}}$$



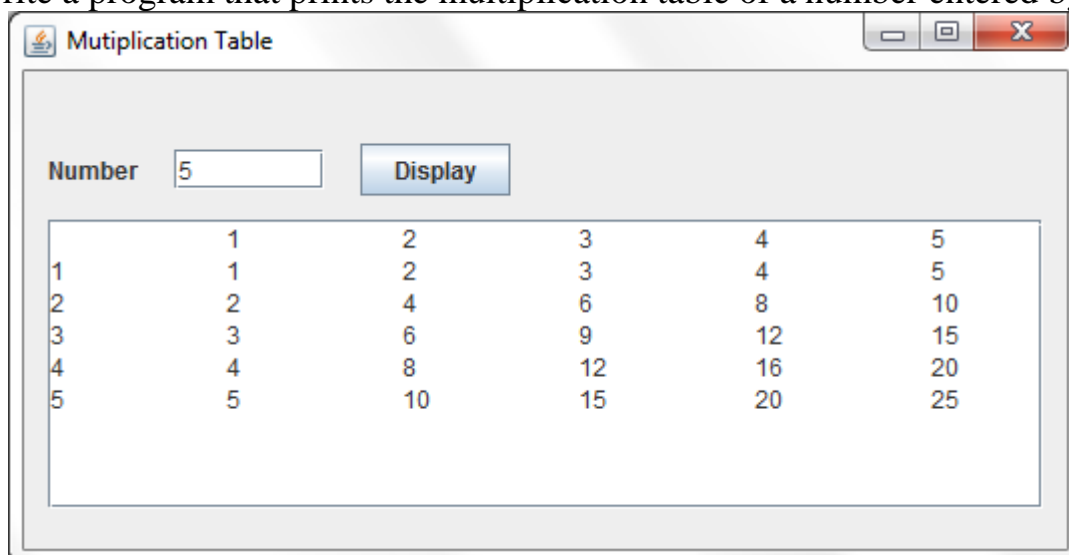


3. Write a program in that displays the series of numbers that fall between two integers entered by the user.



Hint: Use the method `text.append(x)` to append the value of `x` without overwriting (erasing) the text area.

4. Write a program that prints the multiplication table of a number entered by the user.





5. Write a program that enables the user to input an integer, and displays the absolute, square, factorial and whether this number is prime or not.

Number
 Submit

Absolute:
Square:
Factorial:
Prime:

Number
5 Submit

Absolute: 5
Square: 25
Factorial: 120
Prime: Yes

6. Write a program that calculates the two roots (x_1 and x_2) of a quadratic equation entered by the user ($ax^2 + bx + c = 0$), where the values of (a, b, c) are inputs. The two roots are calculated as follows:

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \quad \text{and} \quad x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

Quadratic Equation

$f(x) = \square x^2 + \square x + \square = 0$

Calculate roots

Quadratic Equation

$f(x) = 2 x^2 + 4 x + -6 = 0$

Calculate roots

$x_1 = 1.0$
 $x_2 = -3.0$



7. Write a program in which the user inputs his personal information. When the user presses the “Display” button, this information is printed and all the fields are disabled. If the user clicks on the “Edit” button all these fields are enabled again for the user to edit his data.

“Display” Button

The screenshot shows a window titled "Personal Information" with a standard Windows title bar (minimize, maximize, close). The window contains a form with the following elements:

- Input fields for ID (10103345), Name (Ahmed Mostafa), GPA (3.4), and Major (Marketing).
- A text area on the right displaying the entered information: ID: 10103345, Name: Ahmed Mostafa, GPA: 3.4, Major: Marketing.
- Two buttons at the bottom: "Display" and "Edit".

In this state, the input fields are disabled (grayed out), and the "Display" button is highlighted, indicating it is the active button.

“Edit” Button

The screenshot shows the same "Personal Information" window. In this state, the input fields are enabled (not grayed out), and the "Edit" button is highlighted, indicating it is the active button. The data in the fields has been updated: ID (10103345), Name (Ahmed Mostafa), GPA (3.45), and Major (MIS). The text area on the right also reflects these changes: ID: 10103345, Name: Ahmed Mostafa, GPA: 3.4, Major: Marketing.