

Challenge - SOH CAH TOA Calculator

The object of this challenge is to practice adding event bindings to a Tkinter program.

Mild 🌶️

Create a program that satisfies the following requirements:

- There is a labeled input field for the **opposite** length of a triangle.
- There is a labeled input field for the **hypotenuse** length of a triangle.
- There is a **SOH** function that uses the **opposite** and **hypotenuse** to calculate the **angle** of the triangle in degrees.
- A button to call the function
- A label to display the **angle**

Medium 🌶️ 🌶️

Create **three separate programs**, each focused on a single trigonometric ratio (**SOH**, **CAH**, or **TOA**). Each program must satisfy the requirements listed for its assigned ratio.

- **Program 1**
 - There is a labeled input field for the **opposite** length of a triangle.
 - There is a labeled input field for the **hypotenuse** length of a triangle.
 - There is a **SOH** function that uses the **opposite** and **hypotenuse** to calculate the **angle** of the triangle in degrees.
 - There is a button that calls the **SOH** function.
 - There is a label to display the calculated **angle**.
- **Program 2**
 - There is a labeled input field for the **adjacent** length of a triangle.
 - There is a labeled input field for the **hypotenuse** length of a triangle.
 - There is a **CAH** function that uses the **adjacent** and **hypotenuse** to calculate the **angle** of the triangle in degrees.
 - There is a button that calls the **CAH** function.
 - There is a label to display the calculated **angle**.
- **Program 3**
 - There is a labeled input field for the **opposite** length of a triangle.
 - There is a labeled input field for the **adjacent** length of a triangle.
 - There is a **TOA** function that uses the **opposite** and **adjacent** to calculate the **angle** of the triangle in degrees.
 - There is a button that calls the **TOA** function.
 - There is a label to display the calculated **angle**.

Spicy 🌶️ 🌶️ 🌶️

Create a program that satisfies the following requirements:

- There is a labeled input field for the **opposite** length of a triangle.
- There is a labeled input field for the **hypotenuse** length of a triangle.
- There is a labeled input field for the **adjacent** length of a triangle.
- There is a **SOH** function that uses the **opposite** and **hypotenuse** to calculate the **angle** of the triangle in degrees.
- There is a **CAH** function that uses the **adjacent** and **hypotenuse** to calculate the **angle** of the triangle in degrees.
- There is a **TOA** function that uses the **opposite** and **adjacent** to calculate the **angle** of the triangle in degrees.
- 3 buttons, one to call each function separately
- A label to display the **angle**