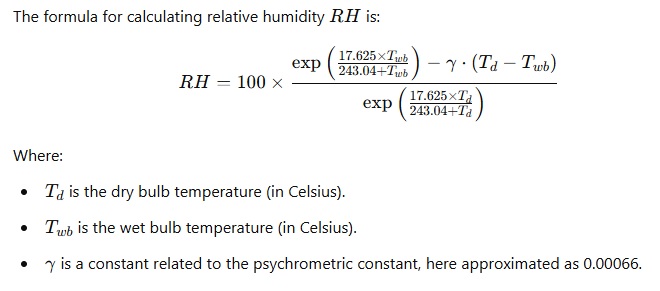
Python code for psychrometer

A psychrometer is used to measure relative humidity using two thermometers: a wet bulb and a dry bulb. Here’s a Python code that calculates relative humidity based on the temperature readings from both thermometers.



Here's the code:

*import math*

*def calculate\_relative\_humidity(dry\_bulb\_temp, wet\_bulb\_temp):*

*# Constants*

*gamma = 0.00066 # psychrometric constant (approximation)*

*# Calculate the saturated vapor pressure for the wet and dry bulb*

*e\_wet = math.exp((17.625 \* wet\_bulb\_temp) / (243.04 + wet\_bulb\_temp))*

*e\_dry = math.exp((17.625 \* dry\_bulb\_temp) / (243.04 + dry\_bulb\_temp))*

*# Calculate actual vapor pressure and relative humidity*

*actual\_vapor\_pressure = e\_wet - gamma \* (dry\_bulb\_temp - wet\_bulb\_temp)*

*relative\_humidity = (actual\_vapor\_pressure / e\_dry) \* 100*

*return relative\_humidity*

*# Example usage*

*dry\_bulb\_temp = 25.0 # dry bulb temperature in Celsius*

*wet\_bulb\_temp = 20.0 # wet bulb temperature in Celsius*

*rh = calculate\_relative\_humidity(dry\_bulb\_temp, wet\_bulb\_temp)*

*print(f"Relative Humidity: {rh:.2f}%")*

Explanation:

* dry\_bulb\_temp is the temperature of the dry thermometer.
* wet\_bulb\_temp is the temperature of the wet thermometer.
* The function calculate\_relative\_humidity calculates the humidity using the formula provided.