Write a program to implement the following:

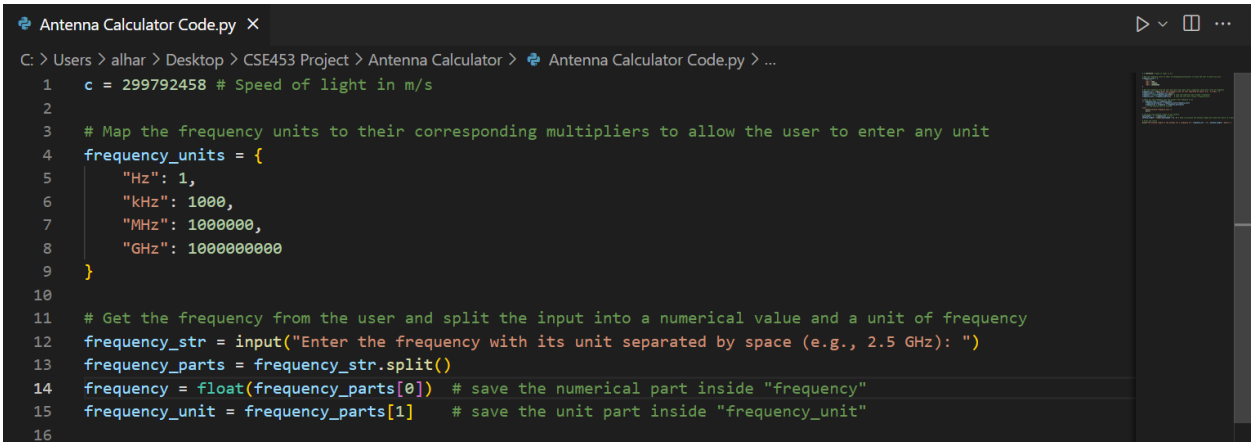
- Calculate the minimum length of an antenna based on the frequency.

*By using **Python Programming Language**:*

CODE:

```
c = 299792458 # Speed of light in m/s

# Map the frequency units to their corresponding multipliers to allow the user to enter any unit
frequency_units = {
    "Hz": 1,
    "kHz": 1000,
    "MHz": 1000000,
    "GHz": 1000000000
}

# Get the frequency from the user and split the input into a numerical value and a unit of
frequency
frequency_str = input("Enter the frequency with its unit separated by space (e.g., 2.5 GHz): ")
frequency_parts = frequency_str.split()
frequency = float(frequency_parts[0])  # save the numerical part inside "frequency"
frequency_unit = frequency_parts[1]    # save the unit part inside "frequency_unit"

# Check for the frequency unit and convert the frequency to Hz
if frequency_unit in frequency_units:
    frequency_multiplier = frequency_units[frequency_unit]
    frequency_hz = frequency * frequency_multiplier
    # if the entered unit is invalid
else:
    print("Invalid frequency unit.")
    exit()

# Calculate the minimum length of the antenna
wavelength = c / frequency_hz # Step 1
antenna_length = round((wavelength / 4), 3) # Step 2 calculate the antenna length and round the
result to 3 decimal places

# Print the result
print("\nThe minimum length of the antenna for a frequency of", frequency_str, "is",
antenna_length, "meters.")
```

CODE Snapshots:

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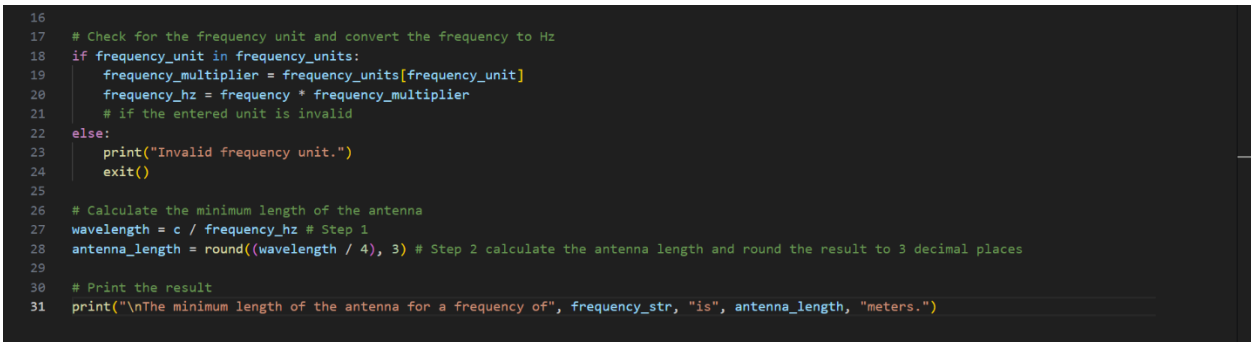

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CODE TEST: