ACTIVITY 8 GUI APP USING PYQT6

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DESCRIPTION OF THE PROGRAM

THE PROGRAM IS A USER-FRIENDLY UNIT CONVERTER CREATED WITH PYQT6, A PYTHON TOOLBOX FOR GRAPHICAL DESKTOP APPLICATION DEVELOPMENT, THE APPLICATION IS AN EASY-TO-USE UNIT CONVERTER. IT PROVIDES A GRAPHICAL USER INTERFACE FOR TRANSLATING DISTANCE IN KILOMETERS AND TEMPERATURE IN FAHRENHEIT TO CELSIUS. THE APPLICATION CALCULATES AND SHOWS THE CONVERTED VALUES IN CELSIUS OR KILOMETERS BASED ON USER-INPUTTED VALUES IN FAHRENHEIT OR METERS. THE PROGRAM LOGIC INCORPORATES THE FORMULAE FOR CONVERTING FAHRENHEIT TO CELSIUS AND METERS TO KILOMETERS. ERROR MANAGEMENT, CLEAR BUTTONS FOR INPUT RESET, AND CUSTOMIZATION CHOICES LIKE SELECTING ALTERNATIVE THEMES OR UNITS ARE A FEW EXAMPLES OF FEATURES THAT THE GUI MAY INCLUDE. BY STREAMLINING THE UNIT CONVERSION PROCEDURE FOR TEMPERATURE AND DISTANCE, THE APPLICATION HOPES TO GIVE USERS A USEFUL AND EASY-TO-USE TOOL FOR DAILY USE.

SOURCE CODE

```
IMPORT SYS
FROM PYQT6.QTWIDGETS IMPORT QAPPLICATION, QDIALOG, QCOMBOBOX, QLINEEDIT,
QTEXTBROWSER, QPUSHBUTTON
FROM PYQT6.UIC IMPORT LOADUI

CLASS UNITCONVERTER(QDIALOG):
    DEF __INIT__(SELF):
        SUPER().__INIT__()
        # LOAD UI FROM FILE
        LOADUI("BUENAFE – UNIT CONVERTER GUI DESIGN.UI", SELF)

        # CONNECT SIGNALS AND SLOTS
        SELF.CONVERTBUTTON = SELF.FINDCHILD(QPUSHBUTTON, "CONVERTBUTTON")
        SELF.CONVERTBUTTON.CLICKED.CONNECT(SELF.CONVERT_VALUE)

        # CONNECT COMBOBOX OBJECTS
        SELF.GROUP1 = SELF.FINDCHILD(QCOMBOBOX, "GROUP1")
        SELF.GROUP2 = SELF.FINDCHILD(QCOMBOBOX, "GROUP2")

        # ASSUMING INPUTBOX AND RESULTBOX
        SELF.INPUTBOX = SELF.FINDCHILD(QLINEEDIT, "INPUTBOX")
        SELF.RESULTBOX = SELF.FINDCHILD(QTEXTBROWSER, "RESULTBOX")

        # SET THE WINDOW TITLE
        SELF.SETWINDOWTITLE("THE UNIT CONVERTER (BUENAFE – M002)")

    DEF CONVERT_VALUE(SELF):
        # GET USER INPUT
        INPUT_VALUE = FLOAT(SELF.INPUTBOX.TEXT())
        FROM_UNIT = SELF.GROUP1.CURRENTTEXT()
        TO_UNIT = SELF.GROUP2.CURRENTTEXT()

        TRY:
            CONVERTED_VALUE = CONVERT_UNITS(INPUT_VALUE, FROM_UNIT, TO_UNIT)
            CONVERTED_VALUE = "{:,.2F}".FORMAT(CONVERTED_VALUE)
            CONVERTED_VALUE += F" {TO_UNIT}"

            # DISPLAY THE RESULT
            SELF.RESULTBOX.SETTEXT(F"{CONVERTED_VALUE}")
        EXCEPT VALUEERROR AS E:
            SELF.RESULTBOX.SETTEXT(STR(E))


DEF CONVERT_UNITS(VALUE, FROM_UNIT, TO_UNIT):
        CONVERSION_FACTORS = {
            "FAHRENHEIT TO CELSIUS": LAMBDA X: (X – 32) * 5 / 9,
            "CELSIUS TO FAHRENHEIT": LAMBDA X: (X * 9 / 5) + 32,
            "KILOMETER TO METER": LAMBDA X: X * 1000,
            "METER TO KILOMETER": LAMBDA X: X / 1000,
        }

        TRY:
            CONVERSION_FUNCTION = CONVERSION_FACTORS[F"{FROM_UNIT} TO {TO_UNIT}"]
            CONVERTED_VALUE = CONVERSION_FUNCTION(VALUE)
            RETURN CONVERTED_VALUE
        EXCEPT KEYERROR:
            RAISE VALUEERROR(F"INVALID UNIT CONVERSION: {FROM_UNIT} TO {TO_UNIT}")

IF __NAME__ == "__MAIN__":
    APP = QAPPLICATION(SYS.ARGV)
    CONVERTER = UNITCONVERTER()
    CONVERTER.SHOW()
    SYS.EXIT(APP.EXEC())
```
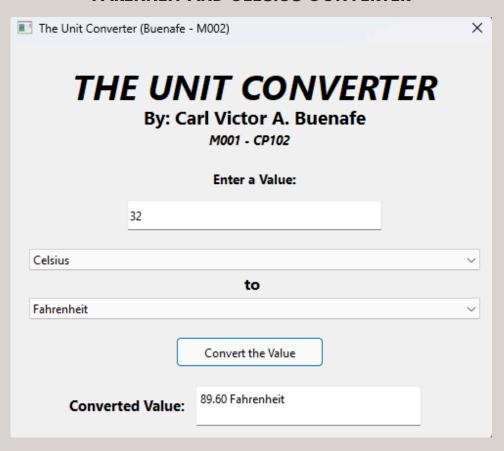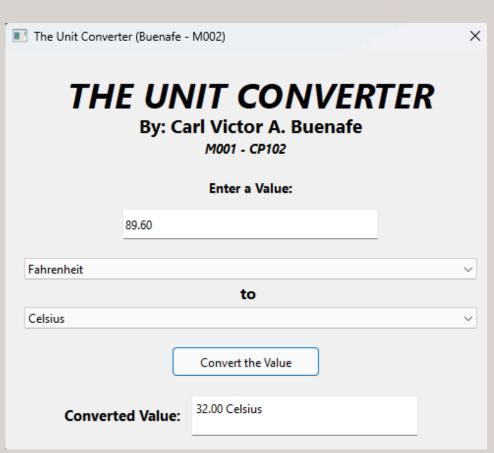
SCREENSHOTS OF OUTPUT

FARENHEIT AND CELSIUS CONVERTER

The Unit Converter (Buenafe - M002) ✕

THE UNIT CONVERTER
By: Carl Victor A. Buenafe
M001 - CP102

Enter a Value:

32

Celsius ⌄

to

Fahrenheit ⌄

Convert the Value

Converted Value: 89.60 Fahrenheit

The Unit Converter (Buenafe - M002) ✕

THE UNIT CONVERTER
By: Carl Victor A. Buenafe
M001 - CP102

Enter a Value:

89.60

Fahrenheit ⌄

to

Celsius ⌄

Convert the Value

Converted Value: 32.00 Celsius

SCREENSHOTS OF OUTPUT

METER AND KILOMETER CONVERTER

The Unit Converter (Buenafe - M002)

THE UNIT CONVERTER
By: Carl Victor A. Buenafe
M001 - CP102

Enter a Value:

14

Kilometer

to

Meter

Convert the Value

Converted Value: 14,000.00 Meter

The Unit Converter (Buenafe - M002)

THE UNIT CONVERTER
By: Carl Victor A. Buenafe
M001 - CP102

Enter a Value:

14000

Meter

to

Kilometer

Convert the Value

Converted Value: 14.00 Kilometer