CIS166 Project Spring 2019
Professor Yanilda Peralta Ramos
Tanya Genao
04.22.2019

SOFTWARE DEVELOPMENT SOFTWARE:

1.Problem Analysis:
    A problem that converts mass units from pounds(lb) input to Grams,
    Kilograms, and Ounces.

2.Program Specification:
    Input   : mass units in pounds(lb)
    Process : Convert units from pounds to grams, kilograms and ounces.
    Output : units convertered to grams, kilograms and ounces.

3.Design:
3.1 Ask the user to input the mass unit value in pounds(lb) to convert,
store.
3.2 Ask the user if the mass value entered is a NUMBER, and the condition
is
    true we can proceed with the program, but if is false them display a
message
    for the user to know the inputis invalid and that it would need to
enter a new
    mass value that is a NUMBER under the entry using a while loop.
3.3 Calculate the convertion of the mass unit entered by the user by
multiplying
    the input by the value of the mass to convert, store.
3.4 Display the mass units convertered into Grams, Kilograms, and Ounces.

4. Implementation: Translading the design into a programming
language(Python).

```
# Module  : weightconverter.py
# Author  : by Tanya Genao
# Created : 04.22.2019
# A program that converts pounds into grams,kilograms,ounces.

from graphics import *
import tkinter
from tkinter.constants import *
from math import *

def wc():   '''function definition wc(weight converter'''
    '''Creates the window and set the background color'''
    win = GraphWin('Weight Converter', 450, 425)
    win.setBackground("grey")

    '''Creates the tittle of the weight converter, size, style and
color'''
    center = Point(240,50)
    label = Text(center, "Weight Converter")
    label.setSize(25)
```

```
label.setStyle("bold")
label.setFill("black")
label.draw(win)

'''Creates the box to input pounds and color'''
box1 = Entry(Point(240,100), 30)
box1.setFill("white")
box1.draw(win)

'''Creates the pounds (lb) label, size, style and color'''
center = Point(390,100)
label2 = Text(center, "lb")
label2.setSize(12)
label2.setStyle("bold")
label2.setFill("black")
label2.draw(win)

'''Creates the Grams label, size, style and color'''
center = Point(132,170)
label3 = Text(center, "Grams")
label3.setSize(10)
label3.setFill("black")
label3.draw(win)

'''Creates the box for Grams, size and color'''
box2 = Entry(Point(240, 200), 30)
box2.setText("  0.00")
box2.setFill("light grey")
box2.draw(win)

'''Creates the Kilograms label, size, style and color'''
center = Point(140,240)
label4 = Text(center, "Kilograms")
label4.setSize(10)
label4.setFill("black")
label4.draw(win)

'''Creates the box for Kilograms, size and color'''
box3 = Entry(Point(240, 270), 30)
box3.setText("  0.00")
box3.setFill("light grey")
box3.draw(win)

'''Creates the Ounces label, size, style and color'''
center = Point(135,310)
label5 = Text(center, "Ounces")
label5.setSize(10)
label5.setFill("black")
label5.draw(win)

'''Creates the box for the Ounces, size and color'''
box4 = Entry(Point(240, 340), 30)
box4.setText("  0.00")
box4.setFill("light grey")
```

```
    box4.draw(win)


    '''Creates the rectangle for the 'convert' button and color'''
    button = Rectangle(Point(275,360),Point(375,390))
    button.setFill("orange")
    button.setOutline("orange")
    button.draw(win)

    '''create the convert button font size, style and color'''
    buttontxt = Text(Point(325, 375), "Convert")
    buttontxt.setSize(11)
    buttontxt.setStyle("normal")
    buttontxt.setFill("white")
    buttontxt.draw(win)
    win.getMouse()

    '''
    Functions for the convertion decision of the mass value input into
grams,kilograms,ounces and while loop condition if is true or else'''

    def decision():
        while True:
            pounds = float(box1.getText())
            if pounds >= 0:

                grams = pounds * 453.59237
                box2.setText(round(grams,3))

                kilograms = pounds * .45359237
                box3.setText(round(kilograms,3))

                ounces = pounds * 16
                box4.setText(round(ounces,3))
                win.getMouse()

                print("Grams is", grams,"\nKilograms is",
kilograms,"\nOunces is", ounces)

            else:
                 print("INVALID INPUT", "Please enter a NUMBER under the
entry")
    decision()

    ''' Wait until the user 'click' so it can close the window'''
    button.setText("Convert")

    win.getMouse()
    win.close()

wc()
```

5.Testing/Debuggin:

```
    Look for errors by running and testing the program, until there is
none, and
    the program runs perfectly.

    6.Maintenance:
    Keeping the program up to date with involving needs.
    '''
```