Department of Computer Science and Engineering
University of Puerto Rico Mayagüez
CIIC 3015 – Introduction to Computer Programming I
Fall 2022

Project #1: Unit Conversion

1 Objectives

1. Apply the concepts of control sequential and decision structures.
2. Understand the design, implementation, and use of sequential coding
3. Gain experience implementing applications using layers of increasing complexity.

2 Project Overview

The implementation of this project will be using the concepts learned in class. We are aware that there are more efficient ways to implement the solution for this project. But in this first part of the course, you just need to apply the basic concepts discussed in class. You will have the opportunity to use more efficient and sophisticated implementations later in the course.

In this project, you will develop a small program to perform unit conversions. The program will present the following menu to the user:

```
- - - - - - - -
Welcome to the unit conversion program.  Please, choose
an option:
1.  Miles to kilometers
2.  Kilometers to miles
3.  Pounds to kilograms
4.  Kilograms to pounds
5.  Miles/hour to kilometers/hour
6.  Exit
Enter option:
```

When the person picks an option the unit conversion starts. If the person picks option `9`, then the program ends with the message: "`Thanks for using the unit conversion program!`" If the user enters an invalid menu option, an error message will be displayed.

Note: You can use the method `isdigit()` to validate the input. Read the Python documentation of this method in the following link: `https://docs.python.org/3/library/stdtypes.html#str.isdigit`

Upon choosing an option for conversion, the program will present a prompt to the user similar to the following:

```
Enter the <unit> to be converted:
```

The user will then enter a number representing the unit, and the program will read the number, convert the unit appropriately, and then present the answer. If the user enters an invalid number, an error message will be displayed. The following sequence illustrates the process:

```
- - - - - - - -
Welcome to the unit conversion program.  Please, choose
an option:
1.  Miles to kilometers
2.  Kilometers to miles
3.  Pounds to kilograms
4.  Kilograms to pounds
5.  Miles/hour to kilometers/hour
6.  Exit
Enter option:  1

Enter the miles to be converted:  100
100.0 miles are equivalent to 160.93 kilometers
```

3 Submission Details

A starter file named `project_1.py` has been provided. Download and modify `project_1.py` and add all the missing code to complete the project. You will submit a single file, through Moodle, whose name must have the following format: `LastnameFirstname_LabSection_p1.py`. For example, a student named Juan Perez from section 072 would submit the following file: `PerezJuan_072_p1.py` (use only one name and one last name).

PROJECT DUE DATE: September 12, 2022, 11:59 PM **(Moodle won't accept it afterward)**

NOTE: Projects that do not execute correctly on the Python interpreter will get a score of 0.