COM S 127 - Lab Week 8 Grading Rubric

This lab was assigned for week 8 of the Fall semester.

This lab is due by 11:59 p.m. of the sixth day after the student's initial lab meeting day.

Lab Objective

The purpose of this lab is for students to begin experimenting with 'functions.'

Instructions

Submission 'Check Offs'

For students to receive credit for their lab work, they must 'check off' their exercises with either the Graduate TA or Undergraduate TA (UGTA) for their lab section. If the lab cannot be completed during the assigned lab hours, the student **MUST** either attend a **Graduate TAs/ Undergraduate TAs** office hours to complete the 'check off' process, or arrange for a Zoom/ WebEx meeting with either a Graduate TA or an Undergraduate TA to receive credit for their work.

This means that **STUDENTS WILL NO LONGER BE ABLE TO SUBMIT THEIR WORK ON CANVAS**. As such, **all work MUST 'checked off' in person or via a Zoom/ WebEx appointment BEFORE the student's next lab meeting**. This means that students will no longer be able to send an email about completed work *before* the deadline, and then check off that work *after* the deadline. For clarity: **ALL WORK MUST BE CHECKED OFF BEFORE THE FINAL DEADLINE**.

There is a list of Graduate TA office hours and email addresses at the top of the syllabus on Canvas.

There is a list of Undergraduate TA office hours and email addresses at the top of the syllabus on Canvas.

Important Notes:

All scripts should include the student's name and the date they programmed the script on the top line of the file. The student should also include the week of the lab, and the exercise number on the second line. Example:

```
# <Student Name>          <The Date>
# Lab Week <week of the lab> - Exercise #<exercise number>

# Matthew Holman          10-10-2022
# Lab Week 8 - Exercise #1
```

Readings:

functions (beginner)

- 6.1. Functions
- 6.2. Functions that Return Values
- 6.4. Variables and Parameters are Local
- 7.8. Boolean Functions
- 8.5. The 3n + 1 Sequence
- 8.6. Newton's Method

functions (intermediate)

- 6.5. The Accumulator Pattern
- 6.6. Functions can Call Other Functions
- 6.8. Using a Main Function

functions (advanced)

- 6.3. Unit Testing
- 6.7. Flow of Execution Summary
- 6.9. Program Development
- 6.10. Composition
- 8.7. The Accumulator Pattern Revisited
- 10.20. Pure Functions
- 10.21. Which is Better?
- 10.22. Functions that Produce Lists

Lab Challenge Activities:

Create a script called **exercise1.py**, such that it completes the task in **Exercise 1** on **slide 2** of the **labWeek8Functions.pptx** file.

Create a script called **exercise2.py**, such that it completes the task in **Exercise 2** on **slide 4** of the **labWeek8Functions.pptx** file.

Create a script called **exercise3.py**, such that it completes the task in **Exercise 2** on **slide 6** of the **labWeek8Functions.pptx** file.

Deliverables:

Show the table of contents of the Runestone textbook to a Graduate TA/ UGTA with green 'check marks' next to the relevant sections noted in the **Readings** section of this document once that reading is complete.

Create a script called **exercise1.py** which completes the tasks laid out in the **Lab Challenge Activities** section of this document.

Create a script called **exercise2.py** which completes the tasks laid out in the **Lab Challenge Activities** section of this document.

Create a script called **exercise3.py** which completes the tasks laid out in the **Lab Challenge Activities** section of this document.

All the deliverable scripts and the Runestone table of contents should be shown to a Graduate TA/ UGTA

Resources:

Official Python Tutorial (Defining Functions):
https://docs.python.org/3/tutorial/controlflow.html#defining-functions

Files Provided

- labWeek8Functions.pptx

Example Code/ Output

exercise1.py output:

```
Enter an Integer: 2
Enter an Integer: 3
The product of 2 x 3 = 6
```

exercise2.py output:

```
Enter an Integer: 3
Enter an Integer: 1
Enter an Integer: 2
The sorted values are: (1, 2, 3)
```

exercise3.py output:

```
Enter an Integer: 3
Enter an Integer: 2
The swapped values are: 2, 3
```

Grading Items

- (**Attendance**) Was the student present at the lab or had made arrangements to attend virtually?: _____ / 5
- (**Runestone Academy Reading**) Has the student demonstrated that they have completed their Runestone Academy reading by showing a Graduate TA/ UGTA the table of contents with green 'check marks' next to the relevant completed sections?: _____ / 5
- (**exercise1.py**) Did the student successfully complete a script which generates correct output as per the **Lab Challenge Activities** section?: _____ / 5
- (**exercise2.py**) Did the student successfully complete a script which generates correct output as per the **Lab Challenge Activities** section?: _____ / 5
- (**exercise3.py**) Did the student successfully complete a script which generates correct output as per the **Lab Challenge Activities** section?: _____ / 10

TOTAL _____ / 30