CIS 3260 – Introduction to Programming
Individual Assignment 2

Submission:

- Add your full name and email address as comments on top of each python program. Add appropriate comments at other locations of your python programs for readability.
- Name your python program as IA2Q#.py. For example, for question #1, your program should have a name IA2Q1.py
- For each question, put corresponding asnwers in a word document. Name your word document as **IA2.doc**
- Submit following items into iCollege -> Assessment -> Assignment 2
  - IA2.doc
  - IA2Q1.py
  - IA2Q2.py

[Some Comments from your instructor]:
I highly recommend you use PyCharm to write following two programs. You can open existing python project and create two new python files IA2Q1.py and IA2Q2.py.

1. [Objectives: 2.1, 2.2, 2.3, 2.5, 2.7, 2.10, 2.11]

1) Let us continue Exercise 2.5, write a program that reads in an investment amount, the annual interest rate, and the number of years, and then displays the future investment value using the following formula. Please display the future investment value with two digits after the decimal point.

$$futureInvestmentValue = investmentAmount \times (1 + monthlyInterestRate)^{numberOfMonths}$$

```
Sample Run:
Enter investment amount: 1000.56
Enter annual interest rate: 4.25
Enter number of years: 1
Future investment value is 1043.92
```

A. [5 points] What is(are) the input(s) and output(s)?
B. [5 points] List the steps to get output(s) from input(s)
B. [5 points] Write your program and put your source code here.
C. [5 points] A screenshot of the output of program

2) Share with us TWO errors you experienced when writing this program.
I . Error 1
A. [5 pts] Explain what is the type of the error (syntax, run-time, or logical error)?
B. [5 pts] How you resolve it?
C. [5 pts] How much time you spent to resolve it? 3 pts

II. Error 2
A. [5 pts] Explain what is the type of the error (syntax, run-time, or logical error)?
B. [5 pts] How you resolve it?
C. [5 pts] How much time you spent to resolve it?

2. [Objectives: 2.1, 2.2, 2.3, 2.5, 2.7, 2.11]

1) Write a program that reads the subtotal and the gratuity rate and computes the gratuity and total. For example, if the user enters 10 for the subtotal and 15 for the gratuity rate (we use 0.15 in our program as the gratuity rate), the program displays 1.5 as the gratuity and 11.5 as the total.

A. [5 points] What is(are) the input(s) and output(s)?
B. [5 points] List the steps to get output(s) from input(s)
B. [5 points] Write your program and put your source code here.
C. [5 points] A screenshot of the output of program

2) Share with us TWO errors you experienced when writing this program.

I . Error 1

A. [5 pts] Explain what is the type of the error (syntax, run-time, or logical error)?
B. [5 pts] How you resolve it?
C. [5 pts] How much time you spent to resolve it? 3 pts

II. Error 2

A. [5 pts] Explain what is the type of the error (syntax, run-time, or logical error)?
B. [5 pts] How you resolve it?
C. [5 pts] How much time you spent to resolve it?

Objectives:

Week 1

---Chapter 1--

1.1 To explain and describe the concepts of computer hardware, programs, and operating systems (§1.2 -1.4)
1.2 To describe the history of Python (§1.5)
1.3 To explain the basic syntax of a Python program (§1.6)
1.4 To write and run a simple Python program (§1.6)

Week 2

--- Chapter 1---

1.5 To use sound programming style and document programs properly (§1.7).
1.6 To explain the differences between syntax errors, runtime errors, and logic errors (§1.8).

--- Chapter 2---

2.1 To write programs that perform simple computations (§2.2)

2.2 To obtain input from a program's user by using the input function and to convert strings to numbers using the int and float functions (§2.3)
2.3 To use identifiers to name elements such as variables and functions (§2.4)

To assign data to variables (§2.5)
2.4 To define named constants (§2.7)
2.5 To use the operators +, –, *, /, //, %, and ** (§2.8)
2.6 To program using division and remainder operators (§2.9)
2.7 To write and evaluate numeric expressions (§2.10)

Week 3

--- Chapter 2 ---

2.9 To use augmented assignment operators to simplify coding (§2.11)
2.10 To perform numeric type conversion and rounding with the round function (§2.12)
2.11 To describe the software development process and apply it to develop the loan payment program (§2.14)