


ISAT 252 - ANALYTICAL METHODS

PYTHON LAB #8: USING LISTS

DUE DATE: MONDAY, APRIL 8TH 2015

OBJECTIVES:

- Write code that uses and processes lists
- Write code that uses list methods

DELIVERABLES: (40 POINTS)

1. Soft copies of:
    a. Your planning documents (pseudo code ***OR*** flowchart)
    b. Your working program on FTP site
    c. Your answers to the worksheet questions uploaded to Canvas
2. Hard copies of:
    a. Your planning documents (pseudo code **OR** flowchart)
    b. Your source code on the ftp site
    c. Your answers to the worksheet questions

THE SCENARIOS:

NUMBER ANALYSIS PROGRAM (5 POINTS)

Design a program that asks the user to enter a series of 20 numbers. The program should store the numbers in a list and then display the following data:

- The lowest number in the list
- The highest number in the list
- The total of the numbers in the list
- The average of the numbers in the list

Note: Python has a number of built in functions that you can use to find the maximum, minimum and sum of a list containing numeric values (See sec. 7.5). You should use these to simplify your program.

DRIVER'S LICENSE EXAM (25 POINTS)

The local driver's license office has asked you to create an application that grades the written portion of the driver's license exam. The exam has 20 multiple-choice questions. Here are the correct answers:

1. A **2.** C **3.** A **4.** A **5.** D **6.** B **7.** C **8.** A **9.** C **10.** B

11. A **12.** D **13.** C **1 4.** A **15.** D **16.** C **17.** B **18.** B **19.** D **20.** A

Your program should store these correct answers in a list. The program should read the student's answers for each of the 20 questions from a text file and store the answers in another list. (Create your own text file using notepad or some other text editor to test the application. *For a **BONUS 5 points**, have your program get the student's answers, store them in a list, and save the list as a text file with the student's answers to a hard drive*.). After the student's answers have been read from the file, the program should:

1. Display a message indicating whether the student passed or failed the exam. (A student must correctly answer 15 of the 20 questions to pass the exam.)
2. It should then display the total number of correctly answered questions
3. The total number of incorrectly answered questions, and
4. A list showing the question numbers of the incorrectly answered questions.

Comment: Your program **MUST** trap all possible exceptions but specifically trap the IOError and IndexError.

ISAT 252

Worksheet 8: Using Lists (10 points)

Name: _____ Section: _____

1. What does the following code display? (1 point)
   ```
   numbers = [1, 2, 3, 4, 5, 6, 7]
   print(numbers[5:])
   ```

2. What does the following code display? (1point)
   ```
   numbers = [1, 2, 3, 4, 5, 6, 7, 8]
   print(numbers[-4:])
   ```

3. What does the following code display? (1 point)
   ```
   values = [2] * 5
   print(values)
   ```

4. Assume the names variable references a list of strings. Write code that determines whether 'Ruby' is in the names list. If it is, display the message 'Hello Ruby'. Otherwise, display the message 'No Ruby'. (2 points)

   .

5. Write a statement that creates a two-dimensional list with 5 rows and 3 columns. Then write nested loops that get an integer value from the user for each element in the list. (5 points)