

Section I – Difficulty level: Easy

1. Create a list of people that you know.
 - Use a loop to ask for user input of the first name of a person
 - Add each name to the list
 - End the user input session by checking if the user typed "q" or "Q"
 - See sample code in the Assignment description on Canvas
 - Finally, print the contents of the list

(a) Create 2 separate programs that use the methods **(4 marks)**

 - `append()`
 - `insert()`

(b) What happens when you use the `extend()` function instead? **(1 mark)**
2. Modify one of the programs in section (1), question (1)(a) to remove one or more names from the list. **(5 marks)**
 - Use a loop so that you can remove more than one name
 - You will need to check whether the name exists in the list first before removing it

Section II – Difficulty level: Moderate

1. Using only tuples, create a program that swaps two values **(5 marks)**
 - Ask for the user to enter two float values, X and Y
 - Swap the two values of X and Y using only tuples
 - The only variables you will need is X and Y, so you will not create any new variables
 - *Hints:*
 - Remember that tuples are immutable, but that doesn't mean you cannot reassign values.
 - `(X, Y)` is a tuple

Section III – Difficulty level: Moderate to Hard

1. Modify the program in section (1), question (1)(a) to ask the user for a first name and a last name of several people. **(15 marks)**

- Use a loop to ask for user input of each person's first and last names
- Each time through the loop, use a dictionary to store the first and last names of that person
- Add that dictionary to a list to create a master list of the names

- Example dictionary:

```
aDict = { "fname":"Douglas", "lname":"Lee" }
```

- Example master list, each element in the list is a dictionary:

```
namesList = [  
    { "fname":"Douglas", "lname":"Lee" },  
    { "fname":"Neil", "lname":"Armstrong" },  
    { "fname":"Buzz", "lname":"Aldrin" },  
    { "fname":"Eugene", "lname":"Cernan"},  
    { "fname":"Harrison", "lname":"Schmitt"}  
]
```

- Pseudocode:

- 1) Ask for first name
- 2) Ask for last name
- 3) Create a dictionary with first name and last name
- 4) Add that dictionary to the master list object
- 5) If more names, go to (1)
- 6) If no more names, print the master list in a visually pleasing manner

2. You walk into a fast food restaurant and order fries, a burger, and a drink. Create a simple text-based user interactive program keeps track of the menu items you order. Use a dictionary to keep track of your menu items and price and another dictionary to keep track of your order and quantity. **(20 marks)**

- Fries are \$3.50
- Burger are \$5.00
- Drinks are \$1.00
- Sales tax rate is 7.25%

```
menu = { "burger":5.00, "fries":3.50, "drink":1.00 }  
order = { "burger":0, "fries":0, "drink":0 }
```

- i. Use menu for the menu items and price. Use order to keep a running total of the number of items ordered.
- ii. Keep a running subtotal.
- iii. When all items are ordered, calculate the sales tax and total amount.
- iv. Print a simple receipt.
- v. See the assignment description for a sample video of how this might function.

```
*Python 3.7.2 Shell*
File Edit Shell Debug Options Window Help

>>> Subtotal: $11.00

1. Burger (2):
2. Fries (0):
3. Drink (1):
q. Quit

Choose item: 2

>>> Subtotal: $14.50

1. Burger (2):
2. Fries (1):
3. Drink (1):
q. Quit

Choose item: 2

>>> Subtotal: $18.00

1. Burger (2):
2. Fries (2):
3. Drink (1):
q. Quit

Choose item: q

-----
Order Summary
-----
2 Burger @ $5.00
2 Fries @ $3.50
1 Drink @ $1.00

Subtotal: $18.00
Tax (7.50%): $ 1.35
-----
TOTAL: $19.35
=====

>>> |
```

Ln: 69 Col: 5