Lab Sheet – 8

The purpose of this lab is to get you familiar with lists and start working with them. You will first learn how to define list variables, how to receive list values from the user, how to print, how to access and modify individual items of the lists, iterating through the lists, slicing and joining lists. Next, you will be exposed to the string functions/methods which can be used to manipulate strings by invoking appropriate functions. Finally, you will solve 20 simple exercises on lists that will provide insights on working with lists and applying the methods.

- Understand your role and Python's role in problem solving. Python will not think and give you a solution. You must do that. Coding comes after that.
- The crucial thing is **trying on your own**. Ask for help only after trying enough.
- You don't have to memorize any of the syntax. You can always refer when needed.
- Whatever Python you are taught is more than sufficient to solve the problems given. Develop the code from first principles from your raw understanding.

1. Lists in Python (not more than 30 mins)
    a. A gentle introduction to lists (Colab tutorial)
    b. Look at each code snippet, run it and understand how lists work.
    c. You don't have to memorize. You can refer to this page when you code.
2. Lists Methods (not more than 30 mins)
    a. https://www.w3schools.com/python/python_lists_methods.asp
    b. Scan through the methods given in this page.
    c. You can click on few methods and try the example given.
    d. Commonly used methods include append, sort, count, insert, pop, reverse, copy, index, extend.
    e. Again, you don't have to memorize these method names, how to use, etc.
    f. Just know that such methods are there, and you can refer when necessary.
3. List Exercises
    a. A set of 20 practice exercises on lists (Colab page)
    b. Exercises are organized in the increasing order of difficulty.
    c. In case you find an exercise hard, skip and move on to the next.
    d. Try to complete **all** exercises.
    e. You don't have to do all in one stretch. Solving 4-5 per day is fine too.
    f. **Try on your own**. Don't ask for help without trying.

Important note: You must try on your own and drill your way through. Don't mind if you struggle. Without struggle, there is no learning. Get used to the struggling and overcoming. That is very normal in problem solving. You can seek help after you have tried enough.

Submission: You can print the **Colab page of List Exercises** as PDF and submit in Teams → Week 8 - Assignment.