***BE 1600***

***Introduction to***

***Programming and Computation***

***Python Lab***

**Lab 09**

20 points

**Due by the end of the lab session**

Assignment Objectives:

* To use Python lists as a means of storing data
* To demonstrate the use of list methods and operators

*Solution for this lab will not be posted on Canvas; however, the solution of any of the lab problems can be discussed in the class upon request of a student.*

All labs must be submitted by the Canvas. **No email or hard copy** is accepted. You must follow the following format:

1. Submit your file to the Canvas. You must submit your file on time; otherwise, you will receive zero.
2. You can upload your file as many times as you like. Only the last attempt counts because the last file you uploaded is the only file your instructor will see.
3. There will be several modules on the Canvas. You need to upload your file using the correct module on the Canvas.
4. Name the lab file: *Lab (labt number)*
5. To upload your file(s):

* In Course Navigation, click the ASSIGNMENTS module.
* Click the title of the assignment.
* Click the **Submit** Assignment button.
* Add **File**. ...
* **Submit** Assignment. ...
* View **Submission**.

*It is your responsibility to make sure that the file is uploaded correctly. If you uploaded a wrong file, you receive zero; files will not be accepted after due date even if you have a prove that the file is created before the due date.*

***Make sure you review the Cheating & Plagiarism policy on Canvas.***

Write a main function that asks the user to enter a series of numbers on the same line. The. function stores the numbers in a list, calls the below functions, and then displays list of even number, sum of odd numbers, sum of numbers divisible by 3, the list of 0s and 1s, and the list after swapping the first element with the last element.

The program should have the following functions:

* A function that takes a list of numbers and returns a new list of even numbers.
* A function that takes a list of numbers and returns the sum of odd numbers.
* A function that takes a list of numbers and returns sum of the numbers divisible by 3.
* A function that takes a list of numbers, replaces each even number with 1 and each odd number with zero. The function returns the list.
* A function that takes a list of numbers, swap the first element with the last element and returns the list

**Enter numbers on the same line**

**2 3 4 5 6 7 8 8 9 2 3**

**List of even numbers: [2, 4, 6, 8, 8, 2]**

**Sum of odd: 27**

**Sum of number divisible by 3: 21**

**New list of 1s and 0s [1, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0]**

**List after replacing first with last: [3, 3, 4, 5, 6, 7, 8, 8, 9, 2, 2]**