Object Oriented Programming LAB – BSEF19
(Morning and Afternoon)
Lab 07 – 01-01-2020

Task 01 (20 + 5 Marks)

You have to create a class to store time, the type **Time** should be composed of hours, minutes and seconds. Along with *getters/setters* and *all appropriate constructors*, the class **Time** must provide the following functionalities. The hour's range is [0-23] and minutes and seconds range is [0-59]. The hours must be reset to zero upon approaching 24.

- a member function to display the *time* in hh:mm:ss format
- binary – operator to return the difference of two *times* as double for number of seconds between them
- binary + operator to add seconds to a *time*
- binary * operator to add minutes to a *time*
- binary / operator to add hours to a *time*
- binary comparison operators to compare two *times*
- operators<< to insert the *time* into a stream in hh:mm:ss format
- operators>> to extract the *time* from a stream in hh:mm:ss format
- `Time::operator double() const` to cast *time* to a *double* value as hours
- `And many more of your choice . . . . . . . . . . . . .`

Later, test all the functionalities in main logic.

Task 02 (40 Marks)

You are provided the code discussed in the previous classes for the **List** type. You need to

- Understand it
- Correct it
- Test it
- Complete it

Task 03 (15 Marks)

Create your own class **MyString** for strings, a sequence of characters. Here you are required to provide the very basic implementation of string. Add features into the basic implementation according to the time you have.

`Note:` MyString is just a variation of the **List** class.

Task 04 (20 Marks)

Create a **List** class of a list of Complex numbers. Is you need to write main logic different form that with the List of **double**s.