

# PROLOGUE

## FOR ALL ASSIGNMENTS

- Attach a *prologue* for all assignments.
- Use sample *prologue* sheet in the course material, customize it for every assignment.
- *Prologue* makes it easy to separate assignments for grading purpose.

# **EXERCISE 18**

## **PROBLEM**

- Read the following two long integer inputs from an input file in the same order. (Note: Do not assign an array with input values.)
- List 1:  
9546803252575685129733711962388451  
29776544789456
- List 2:  
6432456425793683549721069846352345  
6234
- Using a list structure read the numbers and forms a linear linked list, print the list elements as list1 and list2. Consider reading 4 or 5 digits at a time into the node.
- Write an addition algorithm to process the two long integer list structures into a result list.

- Watch for leading zeros for the numbers in the nodes, like 00062 for 62 and 00219 for 219 etc. Write some logic to print the leading zeros for numbers from each link.
- Print the long integer sum of the two list structures from the result list
- Hint: Maintain two list structures for list 1 and list 2. Create a new result list for the result of adding two lists.
- Print the two lists in linked list formation with space between the numbers from each link.
- Print the result list with numbers from each link with spaces in between.
- Print the resulting long integer with leading zeros taken care wherever required.

### **DELIVERABLES**

**Write the prolog and fill up all information for this exercise as given in the sample. Submit the source code, input and the output files. The program is expected to be well commented. Place your program as soft copy on assigned shared drive for students of this course.**

### **DUE DATES**

**Assignments are due on the following week after completing the chapter discussion.**