***Submission:***

• *Email instructor or TA if there are any questions. You cannot look at others’ solutions or use others’ solutions, however, you can discuss it with each other. Plagiarism will be dealt with according to the course policy.*

*• Submission after due time will not be accepted.*

**Follow this naming convention for your report, it should highlight difficulties you faced and things you learned in this assignment. Naming Pattern ( Roll#\_Assignment#.pdf e.g BSSE23000\_Assignment7.pdf )**

In this assignment you have to do following tasks:

**Task 1:** Accept the assignment posted in Google Classroom and after accepting clone the repository to your computer for this ensure you have logged into github app with your account.

**Task 2:** Solve the given problems written after task instructions, write code through IDE like CLion

**Task 3:** Ensure your code/solution is in the cloned folder.

**Task 4:** Commit and Push the changes through the Github App

**Task 5:** Run ‘make run’ to run C++ code

**Task 6:** Run ‘make test’ to test the C++ code

***Q1. Write a program in a function named mergeFiles to read data from two files containing integers, dynamically allocate arrays to store the data, merge the arrays, and write the result to a new file.***

***Q2. Create a program in a function named bookInventory to manage a book inventory system. Use structures to represent books with attributes like title, author, and price. Allow users to add, update, and display book details using dynamic memory allocation***

***Q3. Write a program in a function named matrixOperations to perform basic operations on matrices (addition, subtraction, and multiplication). Dynamically allocate memory for matrices and display the results.***

***Q4. Write a program in a function named fileCompression to read a text file, dynamically allocate memory to store each word, count the frequency of each word, and create a compressed version of the file. In the compressed file, replace each word with its frequency and the word itself. For example, if the word "apple" appears three times, replace it with just "3 apple" in the compressed file instead of three occurrences. Write the compressed version to a new file.***