

BTN415 Lab 1

C++ Refresher Lab

In this lab, you will refresh your basic C++ development skills by implementing, compiling and running some basic objects

LEARNING OUTCOMES

Upon successful completion of this lab, you will have demonstrated the ability to:

- Implement, compile and execute an Object Oriented C++ application
- Define a class with member functions and variables
- Define a structure
- Work with multiple source files
- Work with dynamic memory management

SPECIFICATIONS

This lab will consist of one source files and one header file:

- Source.cpp (provided)
- Object.h (starting point provided)

Object Class (Object.h)

Update the header file **Object.h** to implement (inline) a class named **Object**. Include in your class definition:

- A pointer to a **buffer** of integers
- A structure that contains the following **state information** about the object
 - Size of the buffer
 - Index to the next available buffer slot
 - Pointer to a std::ofstream
- A constructor **Object(int, std::ofstream*)** that takes in the size of your buffer of integers and a pointer to the std::ofstream defined in the main. Your constructor should:
 - Dynamically allocates the **buffer**
 - Initializes the **state information** (size of buffer, index to the next available buffer slot)
 - Stores the std::ofstream pointer
- A destructor **~Object()** that deallocates the **buffer**
- A **void Display() const** member function that prints the contents of the buffer to the screen and the std::ofstream

- An ***Object& operator+=(int)*** overloaded operator that adds integer values to the **buffer** and updates the **state information** (only the index to the next available buffer slot, as the size doesn't change)

SUBMISSION REQUIREMENTS

Once you have completed your lab create and upload the following files:

- Create a single ZIP file that contains all your source code files (*.h and *.cpp)
- The output.txt file generated by the lab
- Any additional information you feel necessary for me to mark your lab