**Project Description:**

You are will create a classroom reservation system in C++. Your system will display a menu to users that allows them to reserve a classroom, release an existing classroom reservation, check the current inventory of classrooms, and quit the application.

**This project will give you experience on the use of the following concepts:**

* 1. Simple data types
  2. Compound data types/structures (arrays, strings, pointers)
  3. Output formatting
  4. Conditionals
  5. Reading from a file
  6. Iteration
  7. User defined functions

You will write a program that displays a menu of reservation choices and prompts the user to select an option. The user can go through the menu options as many times as they like and should have a menu option to quit the application. After each selection, your program should provide confirmation information about the operations performed. For example, if the user reserves a room, after the reservation is finalized, your program should display the room name and number reserved, the capacity of the room, and the number of days the room as been reserved.

**Project Specifications:**

This program should be broken down incrementally. You have 6 weeks to complete this project, I will make recommendations on milestones below but you free to organize and implement as you choose. You should be able to extend your project each week with the same program file.

Your program **MUST** meet the following specifications:

* 1. Read in classroom inventory from a file (file: [projectData.dat](https://spelman.instructure.com/courses/4751/files/711264?wrap=1) [Download projectData.dat](https://spelman.instructure.com/courses/4751/files/711264/download?download_frd=1))
     1. File contents:
     2. *BuildingName*
     3. *RoomNumber*
     4. *Capacity* *ReservationStatus* *DaysReserved*
     5. Note:
     6. Capacity - equals the number of seats in the room
     7. ReservationStatus - will be Y/N, 'Y' being reserved, 'N' being not reserved
     8. DaysReserved - represents the number of days the room is being held in the current reservation
  2. Display a menu (function) with the following options
     1. Reserve a room
     2. Return/release an existing reservation
     3. Check classroom inventory
     4. Exit/quit application
  3. Reserve a room function
     1. You should ask the user how many seats they need
     2. You should ask how many days they need the room
        1. Based on their input, you should display classroom availability
           1. Upon taking their selection, you should validate their input
           2. If the number of seats inputted exceeds the capacity of the selected classroom, print an error message
           3. Otherwise, update the classroom inventory with the selected classroom's reserved status.
  4. Release/return an existing reservation function
     1. You should prompt the user for the room name and number of their existing reservation.
        1. Upon receiving their information, validate the reservation exists.
           1. If no reservation is found, print an error message.
           2. Otherwise, print a message confirming the return.

Prompt the user, to confirm they are sure about returning the room.

* + - 1. Update the classroom inventory with the returned classroom's reserved status.
  1. Check Inventory function
     1. Print a menu of available rooms
        1. You should display the room name, room number, room capacity
        2. You should only show rooms that are available (check the reserved status)
     2. Ask if the user would like to make a reservation
        1. If yes, allow them to use the reserve room functionality above.
        2. Otherwise, take them back to the main menu.