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### [CH7A](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842777_1&course_id=_33824_1&group_id=&mode=view)

**CH7A - due 10/5**

Part one of Chapter 7 - 7.1 to 7.9.

In Zybooks this is listed as CH7A as an assignment.

As usual, submit a screenshot below.

### [CH7B](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842778_1&course_id=_33824_1&group_id=&mode=view)

**CH7B - due 10/12**

Part one of Chapter 7 - 7.10 to 7.18

In Zybooks this is listed as CH7B as an assignment.

As usual, submit a screenshot below.

### [M3T1](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842779_1&course_id=_33824_1&group_id=&mode=view)

**M3T1 - due 10/5**

**Bronze Tier (80/100):**

Enter program 13-1 ("Rectangle") from the Gaddis slides. Submit the program and a screenshot of the output here.

**Silver Tier (90/100):**

As Bronze, and add **input validation** to ensure the rectangle is a valid size. (No sides can be zero, or negative.)

**Gold Tier (100/100):**

As Silver, and create a second file which, instead of having the Rectangle class, has a class **Box**. We'll define a "Box" as a three dimensional rectangle -- it has length and width, and it also has height. Instead of area, it has volume.

Later in this chapter we'll learn how to add multiple files to a single C++ program. For now, you may find it easier to just create this version as a separate project.

Include both **Rectangle** and **Box** files, and a screenshot of the program output.

**Gaddis Slides**

As found under "Resources", and also here.  [Gaddis\_CPP\_Classes\_CH13\_pdf.pdf](https://faytechcc.blackboard.com/bbcswebdav/pid-5842779-dt-content-rid-54063191_1/xid-54063191_1) [Gaddis\_CPP\_Classes\_CH13\_pdf.pdf - Alternative Formats](https://faytechcc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_33824_1&content_id=_5842776_1)

### [M3LAB1](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842780_1&course_id=_33824_1&group_id=&mode=view)

**M3LAB1 - due 10/11**

Related video: <https://youtu.be/f7ivxgTUlaE>

For M3LAB1, we'll begin using object-oriented programming methods to tackle our Text Adventure project in a more manageable way.

First, we'll create the Room class, and instantiate several Room objects using it.

To complete the assignment, you should write a program, using the video as a template, that:

Creates 3 to 5 Room objects

Lists the name and description of each room

You should use a combination of the methods presented (both constructors, and plain cout vs. using the describe() function) to get a feel for how the class operates.

Next, we'll be adding exits to these rooms, in order to link them together into a larger structure.

### [M3LAB2](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842781_1&course_id=_33824_1&group_id=&mode=view)

**M3LAB2 - due 10/18**

For this assignment we will continue to develop the Room class.

No video this time, although I  have added relevant comments to compensate.

I have provided the expanded class, and a Game class that works with it. The attached files both the same source -- one as a .cpp file, the other as a .pdf (for ease of reading)

[RoomsExpanded-SourceCode.pdf](https://faytechcc.blackboard.com/bbcswebdav/pid-5842781-dt-content-rid-54063196_1/xid-54063196_1) [RoomsExpanded-SourceCode.pdf - Alternative Formats](https://faytechcc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_33824_1&content_id=_5842776_1)   [main.cpp](https://faytechcc.blackboard.com/bbcswebdav/pid-5842781-dt-content-rid-54063194_1/xid-54063194_1)

**Completing the Lab**

**Bronze (80/100):**

First, download the code, place it in a project (in repl.it or Code::blocks), and run it, to confirm that it works.

Change the way that the rooms are connected. Make sure that there is at least one connection to each room, so that they are all reachable.

Update the tour() method so that the player passes through all the rooms and sees all the room descriptions.

**Silver (90/100):**

Next, you should add three more rooms (or if you replace the rooms, five to seven rooms total). Make sure that there is at least one connection to each room, so that they are all reachable.

Again, update the **tour()** method so that the player passes through all the rooms and sees all the room descriptions.

**Gold (100/100):**

Update the **describe()** method so that it also tells you what exits exist from this room. Here's an example of what that output might look like:

Dining Room  
Dusty furniture fills the room.  
Exits: east south

For whichever tier you complete, submit your screenshot of a sample run, and the updated code, here.

**Plans for future expansion...**

This code has some problems. It works, but it's a bit messy.

For one, moving to a new room requires several lines of code. First you have to get the new ID for the player location, then you fetch the Room object that matches that ID.

When we start working with pointers in the next chapter, we'll consolidate that -- instead of storing a separate integer ID, we'll just store a reference to the Room itself.

Second, the commented out code shows some work towards making the program less buggy. Right now, if a player goes through an exit that doesn't exist, the program will crash. (Any ideas why? Check the ID value for exits that haven't been set.)

Having the player end up in the Nowhere room, or not letting them move at all, would avoid this crash bug. We'll look at that in a future installment.

### [M3HW1](https://faytechcc.blackboard.com/webapps/assignment/uploadAssignment?content_id=_5842782_1&course_id=_33824_1&group_id=&mode=view)

**M3HW1 - due 10/25**

You can complete this assignment either of two ways:

1. Complete Labs 7.24 and 7.25 within Zybooks (listed as Zybooks assignment M3HW1). If you do this, you should submit a screenshot of your score for Zybooks assignment M3HW1.

2. Using the instructions below (which are identical), set up the lab programs in your own environment, run, and submit them here. If you do this, submit program run screenshots and sourcecode as usual.

Both of these assignments are similar to the labs with the Room object, in that they give you a mostly completed object, and ask you to complete the program.

They use the convention of a separate .h (header) and .cpp (source) file for objects. This is a convention we'll be using in future, so it's good to get some practice with it. If you have issues setting up your home environment to work with multiple files like this, please contact me and I will walk you through the process.

**Instructions and Source Code**

Again, these files are identical to what is found in Labs 7.24 and 7.25, so they're only necessary if you want to do this exercise outside of the Zybooks environment.

[m3hw1\_source.zip](https://faytechcc.blackboard.com/bbcswebdav/pid-5842782-dt-content-rid-54063193_1/xid-54063193_1)