# CSCI 1470 – Fall 2015Lab 5 In-class Assignment

**Topic:** Static Graphics and Images

Submit all source codes (\*.cpp) at the same time via email to clarenceb@uca.edu and to tvalesco1@cub.uca.edu

***\*Note: Include the following set of comments at the top of your source code for all assignments.***

***// Student Name:***

***// Assignment #: (Example: A5-1)***

***// Lab Time: Tuesday 2:40-4:30***

***/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Title of Program\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\****

***Author: Date of Work:***

***Design: Provide an general overall description of the program***

***Input:***

***Process:***

***Output:***

***\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/***

1. Download “italy.bmp” from http://faculty.uca.edu/clarenceb

2. Use the UCA graphics files “graph1.h” and “graphLib2010.lib”.

2. ***(Save this file as* A5-1.cpp.)** Write a C++ program that will displays a flag and map for a given country in the Graphics Window. We’ll only display a flag that was created from colored rectangular regions. For instance, the Italian flag is created from 3 colored regions (green/white/red).



Italian Flag

The caption (Italian Flag) is to be place beneath the flag. A yellow line will also separate the flag from the map. The following example illustrates how the Italian flag/map is placed in the Graphics Window:

50

100

100

Suggested dimensions are shown above. Use these additional requirements too:

* The upper left coordinate of the Italian flag is suggested as (250, 50).
* The captions should be placed 20 pixels beneath the flag aligned to the left edge of the flag.
* The horizontal yellow line should be placed approximately 15 pixels beneath the caption.
* The yellow line is across the page with 3 pixels wide
* The map should be displayed approximately 25 pixels beneath the yellow line.
* The upper left x coordinate of the Italian map is suggested to be 160 (we’ll compute the y coordinate based on the other object’s positions). The dimension of the map is 324x262 pixels.

**CSCI 1470 – Fall 2015
Lab 5 Out-of-class Assignment
Due Date: Monday, 9/28/15 @ 11:00PM**

**Topic:** Graphics

Submit all source codes (\*.cpp) at the same time via email to clarenceb@uca.edu and to tvalesco1@cub.uca.edu

***\*Note: Please include appropriate comments at the top of the program***

**Assignments:**

1. Download the file “moon.bmp” from http://faculty.uca.edu/clarenceb

2.  ***(Save this file as* B5-1.cpp.)** Write a C++ program that displays the following night scene



6

4

2

5

3

1

(359,79)

(593,179)

(559,39)

(239,19)

(119,179)

(59,59)

(400,25)

(639,339)

(599,339)

(399,139)

(599,239)

(519,239)

(519,139)

(399,279)

(299,279)

(299,59)

(159,59)

(159,239)

(59,239)

(59,339)

(0,339)

The coordinates for the endpoints of all lines are shown. The coordinates of each point (representing a star are also shown. The upper left coordinates for the moon are shown as well.

Each rectangle represents a window in the building and has a dimension of 10x10. The yellow color in each window represents a light. The coordinates (inserted between ()) and colors (inserted between <> in Red, Green, Blue order) for the rectangles are shown below (Blue needs to be 0, and R/G are equal to generate a shade of Yellow).

The rectangles are numbered from 1 thru 6. This rectangle number corresponds to a number in the screen capture above.

Rectangle 1: Coordinates: (179,99) Color <128,128,0>

Rectangle 2: Coordinates: (179,129) Color <150,150,0>

Rectangle 3: Coordinates: (259,179) Color <175,175,0>

Rectangle 4: Coordinates: (99,259) Color: <200,200,0>

Rectangle 5: Coordinates: (239,319) Color: <255,255,0>

Rectangle 6: Coordinates: (419,179) Color: <50,50,0>

Your completed program should display the following graphics window (same as previous illustration but coordinates not shown).



3. ***(Save this file as* B5-2.cpp.)** Write a C++ program that creates a night scene, similar to the scene for B4-1 that consists of the following:

(593,179)

(599,339)

(599,239)

(519,239)

(399,279)

(299,279)

(159,59)

(59,339)

* Use rectangles to create 6 different buildings with different shadings (i.e., with 6 different colors of grey).
* Display an image of the Moon above the buildings
* Use the lights in one of the buildings to make a design, such as Z or X, using the same size lights as used in B5-1.
* Make appropriate comments at the top of the program and throughout the program.
* Be creative with your work.