UOW AUSTRALIA

SCIT

School of Computing & Information Technology

CSCI336 – Interactive Computer Graphics
Spring 2023

Lab Submission

Due on Friday, 18th Aug 2023 at 5:00pm AEDT (the time shown on Moodle)

Task

Write an OpenGL program using GLFW to do the following:

- Create and open a 1024 × 768 window with the title "Lab Submission [put your UOW ID number in here] – 1024 x 768"

  (0.5 marks)

- Handle the following user input:
  - Quit the application when
    - the "ESC" key or
    - the right mouse button is clicked within the window
  - When the left mouse button is pressed, output the current mouse cursor coordinates to the console (i.e. std::cout)
  - When the "b" key is pressed, change the background colour
    - Cycle through the following colours: grey, white, yellow, cyan, magenta
  - When the window is resized, update the window title to contain the new window dimensions
    - i.e. window title = "Lab Submission [UOW ID number] – [new width] x [new height]"

  (1 mark)

- Display the following basic shapes using OpenGL primitives at different locations within the window:
  - 6 points. Use a point size of 10
  - 3 lines
  - 2 triangles
  - Use a triangle strip to display a rectangle

  (1 mark)

- Display each shape in a different colour (make sure the colours are different from the background colours). Also, allow the user to toggle the polygon render mode between wireframe and fill when the "w" key is pressed.

  (0.5 marks)

Include two screenshots of your program with your submission:

- The first screenshot is to show wireframe mode
- The second screenshot is to show solid fill mode, with a different background colour from the first screenshot

Save the screenshot images using one of the common image formats: .bmp, .jpg, or .png

Include a .txt note for the marker if you want to highlight anything.

Instructions and Assessment

Zip all your **source files** (.cpp, .h, .vert and .frag) and the **screenshots** (.bmp/.jpg/.png) into a single file and submit this via Moodle by the due date and time (**do NOT zip your entire project file** as this can be very large, and **do NOT use .rar format**). If not submitted on Moodle, the assessment will not be marked.

The assessment must be your own work. If asked, you must be able to explain what you did and how you did it. Marks will be deducted if you cannot correctly explain your code.

NOTE: The mark allocations shown above are merely a guide. Marks will be awarded based on the overall quality of your work. Marks may be deducted for other reasons, e.g., if your code is too messy or inefficient, if you cannot correctly explain your code, etc.

For code that does not compile, does not work or for programs that crash, the most you can get is half the marks (i.e. 1.5 marks or less). It is better to comment out sections of your code that do not work, and include a note for the marker.

