

# Swinburne University of Technology Sarawak

## **COS10009 Introduction to Programming**

### **GUI & Custom Program (Lab 05)**

#### **Pass Task 5.1: Button Test**

**Task:** Control flow is essential if you want your programs to have any kind of dynamic behaviour. Another developer has been employed to create the code to test if a button is clicked. Unfortunately, the code they have created does not work as intended, and you have been tasked with fixing their program.

#### **To Do:**

1. Download 5\_1.c from Pass Task 5 Resources.
2. Currently the code does not work correctly. The following tests in desk check indicate what the answers should be (given the mouse's location, and assuming that the mouse was clicked). Use these tests to locate the current issue with the code.
3. The 'Click Me' text does not appear on the button – correct this also.
4. Fix the program's code when you have located the issue and make sure that it works correctly before submitting.

Desk Check:

	btnX	btnY	btnWidth	btnHeight		MouseX	MouseY	Answer
Test 1	50	50	100	50		75	75	TRUE
Test 2	50	50	100	50		75	10	FALSE
Test 3	50	50	100	50		75	200	FALSE
Test 4	50	50	100	50		10	75	FALSE
Test 5	50	50	100	50		200	75	FALSE

## **Pass Task 5.2: Custom Program Plan**

**Task:** Design and create a plan for your custom program with high level overview to communicate your ideas.

### **To Do:**

At this stage you should have enough understanding of programming to start thinking about creating your own custom program. In this task, you are required to produce a plan and overview of the structure of your custom program (something you would be interested in creating). It helps you to plan out the overall structure for your custom program.

Here are some steps to get you started:

1. Provide a summary of your program, maybe write up a paragraph or two to describe what does it do? What are some of the key features etc.
2. Drawing a picture of what you want it to look like, sketch the first few interfaces that will be shown when the program is run (photo or scan)
3. List and describe the main data types (records and enumerations / data dictionary etc)
4. Describe the main functions and procedures. Have enough that you can start to see how the program will continue to develop as you proceed.

Complete Pass Task 5.2 Answer Sheet, this task should be completed before you start your custom program.

Useful Resources:

Make cross-platform 2D applications in SDL  
<https://www.libsdl.org/index.php>

GTK Library  
<https://www.gtk.org/>

Beginning Game Programming v2.0  
<https://lazyfoo.net/tutorials/SDL/>

## **Credit Task 5.1: Hover Button Test**

**Task:** This task extends your skills regarding handling user input and managing multiple components on the screen.

### **To Do:**

Using your corrections from Pass Task 5.1, make the following additional corrections:

1. The button should have a black border around it when the mouse is moved over it to highlight it.
2. At the bottom of the screen there should be a display of the mouse x and y locations at all times (not just when the mouse is clicked)
3. Once the button is clicked, the button will then move to another location randomly within the window area.

The screen should look as follows when the mouse is over the button:

