

SIT210: Embedded Device Development

Task 5.2P RPi: Making GUI

Hardware Required

Raspberry Pi with Raspbian installed (NOOBS)
Keyboard, mouse and monitor (HDMI) to plug into the Raspberry Pi.

Software Required

None

Pre-requisites: You must do the following before this task

- 1) 5.1P
- 2) Watch the youtube video on how to use Tkinter GUI platform for python:
<https://www.youtube.com/watch?v=ap-ABFNCBoE>

Task Objective

In this task, you will learn to create simple GUI interfaces with Raspberry Pi (RPi). RPi supports python, which has many GUI packages. One of which is TkInter. The wiki page for TkInter here at <https://wiki.python.org/moin/TkInter>

In this task, based on what you learnt from the video tutorial, you will build a simple GUI interface to turn on one of three LED lights

Steps:

- 1) Build a simple circuit board with RPi enable you to turn on 3 LEDs separately. Name them red, green, and blue.
- 2) Create a GUI that has the following: 3 radio buttons that correspond to the 3 LED, and a button to exit the GUI.
- 3) Create code for the GUI so that: when you click on each of the radio button, the corresponding LED will turn on, and all others are off. Reference documentation for usage of TkInter radiobutton is here:
<http://infohost.nmt.edu/tcc/help/pubs/tkinter/web/ttk-Radiobutton.html>

Task Submission Details

Q1: Submit a video that demonstrates the system working.

Q2: Create a repository named RPiGUI on Github. Upload your code to the repository. Include the link to your repository here.

Q3: Describe a real life usage scenario for your system.

Q4: How can you improve the system?

Remember to submit this to Doubtfire, and check the status of any existing tasks. You may need to fix and resubmit some of your work. You want to check out why, so that you can learn from this and make it faster and easier to get later work to the required standard.