Exercise 2 -- Control an LED with a Button

The document **`Packages.pdf`** in **`ada-remoteio-tutorial/`** contains annotated package specifications for the packages that you will be using during this tutorial session. For this exercise you will need the packages **`GPIO`** and **`GPIO.RemoteIO`**.

Hardware Setup

Plug the button assembly from the tutorial hardware kit into Grove socket J2 (Raspberry Pi Zero) or J4 (BeagleBone Green). This attaches the button to Remote I/O channel 1. The LED remains attached to Remote I/O channel 0.

Microsoft Windows

1. Quit **gps** if you are still in it from Exercise #1.

2. Use the **test_led** project from Exercise #1 as a basis for this exercise:

```
xcopy test_led.adb test_button_led.adb
xcopy test_led.gpr test_button_led.gpr
```

3. Restart **gps**:

```
%GNAT%\bin\gps -P test_button_led.gpr
```

4. In order to build the new project, you will need to replace each instance of "**test_led**" with "**test_button_led**" and "**Test_LED**" with "**Test_Button_LED**" in both **test_button_led.adb** and **test_button_led.gpr**. After you have done this, you should quit **gps** and restart it again:

```
%GNAT%\bin\gps -P test_button_led.gpr
```

5. Now you can make changes to **test_button_led.adb** to implement support for a button input on Remote I/O GPIO channel 1. (The LED should remain on Remote I/O GPIO Channel 0).

Linux and MacOS X

1. Quit **gps** if you are still in it from Exercise #1.

2. Use the **test_led** project from Exercise #1 as a basis for this exercise:

```
cp test_led.adb test_button_led.adb
cp test_led.gpr test_button_led.gpr
```

3. Restart **gps**:

```
$GNAT/bin/gps -P test_button_led.gpr
```

4. In order to build the new project, you will need to replace each instance of "**test_led**" with "**test_button_led**" and "**Test_LED**" with "**Test_Button_LED**" in both **test_button_led.adb** and **test_button_led.gpr**. After you have done this, you should quit **gps** and restart it again:

```
$GNAT/bin/gps -P test_button_led.gpr
```

5. Now you can make changes to **test_button_led.adb** to implement support for a button input on Remote I/O GPIO channel 1. (The LED should remain on Remote I/O GPIO Channel 0).