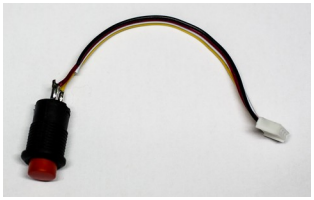
Exercise 2 -- Control an LED with a Button

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 to reference 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 GPIO channel 1. The LED remains attached to Remote I/O GPIO channel 0.

Instructions

Your goal for this exercise is to create a program the controls an LED from a button: Push the button and the LED turns on. Release the button and the LED turns off.

You will accomplish this goal by building on **`test_led`** from Exercise 1. You will need to add code to configure a second GPIO pin as an input, read the button state and change the LED state.

1. In **`gps`**, right click on the **`.`** directory in the **`Project`** tab and select **`New`** → **`Ada Main Unit`**.

2. In the **`Create Ada Main Unit`** dialog box, enter **`test_button_led`** and click **`OK`**.

3. In the **`Confirmation`** dialog box, click **`No`**. A new tab with a stub for **`test_button_led`** will appear.

4. Now go back to the **`test_led`** tab and do **`Edit`** → **`Select All`** and then **`Edit`** → **`Copy`**.

5. Now go back to the **`test_button_led`** tab and do **`Edit`** → **`Select All`** and then **`Edit`** → **`Paste`**.

6. You are ready to begin coding the button and LED test!

Start by changing **`test_led`** to **`test_button_led`** in **`test_button_led.adb`**.

7. When you are ready to compile, do **`Build`** → **`Project`** → **`Build <current file>`**.

8. When you are ready to test, do View → OS Shell and then enter one of the commands:

`.\test_button_led` ***or*** **`./test_button_led`**