Read and Show an AVI Video File

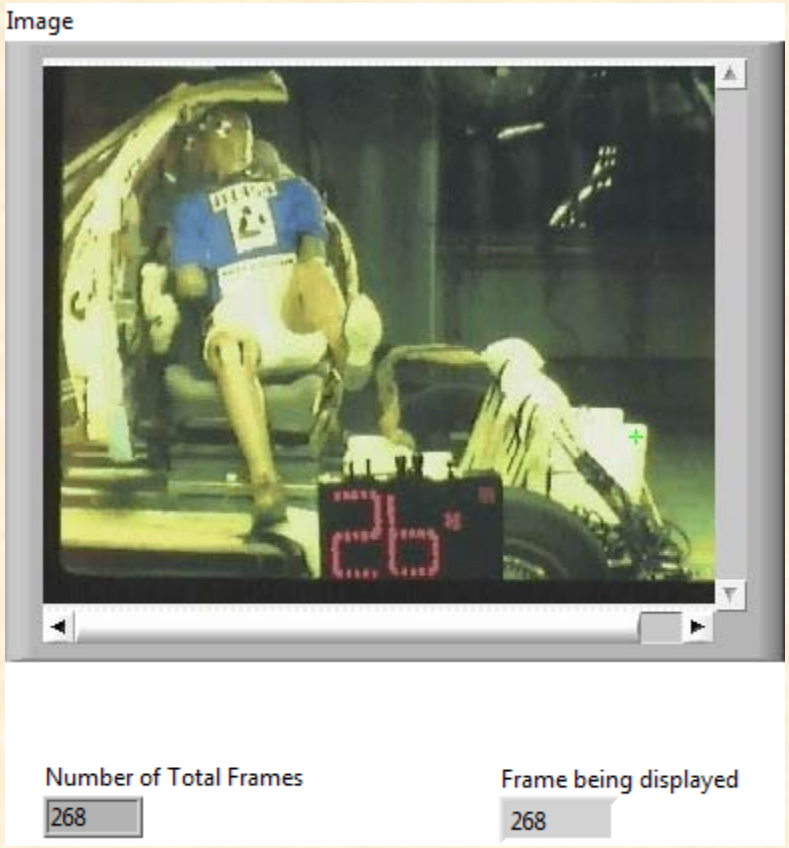
Assignment 1: Read an AVI File

In this assignment, you are required to write a LabVIEW code to ready a AVI video file. The code must display the video one frame after the other. It must show the total frame number of the video, the number of the frame being displayed. The Front Panel must be the same as Figure 1.

You must use a For Loop to show the each frame of images and include the following functions in your code:

- File Dialog
- IMAQ AVI Open
- IMAQ AVI Get info
- IMAQ AVI Read Frame
- IMAQ Create

Figure 1. The Front Panel of the LabVIEW code.



Assignment 2: Grab Image from a USB camera

In this assignment, you are required to write a LabVIEW code to grab images from a camera and save it as a AVI video file that contains 100 frames of images. The code must display the video one frame after the other. It must show the total frame number of the video, the number of the frame being displayed, as well the average intensity of each image (you need convert each image to a array: use IMAQ ColorImageToArray).

Instruction

Please do use the “IMAQ Cast Image 2 “ function to convert color image to gray-scale image (8-bit U8 for example).

Assignment 3: **USB-6008 DAQ Device Programming**

Sequence Led control

In this assignment, you are required to write a LabVIEW code to control 3 LEDs with the USB-6008 DAC device in this sequence:

(1) All 3 LEDs switch on for one second.

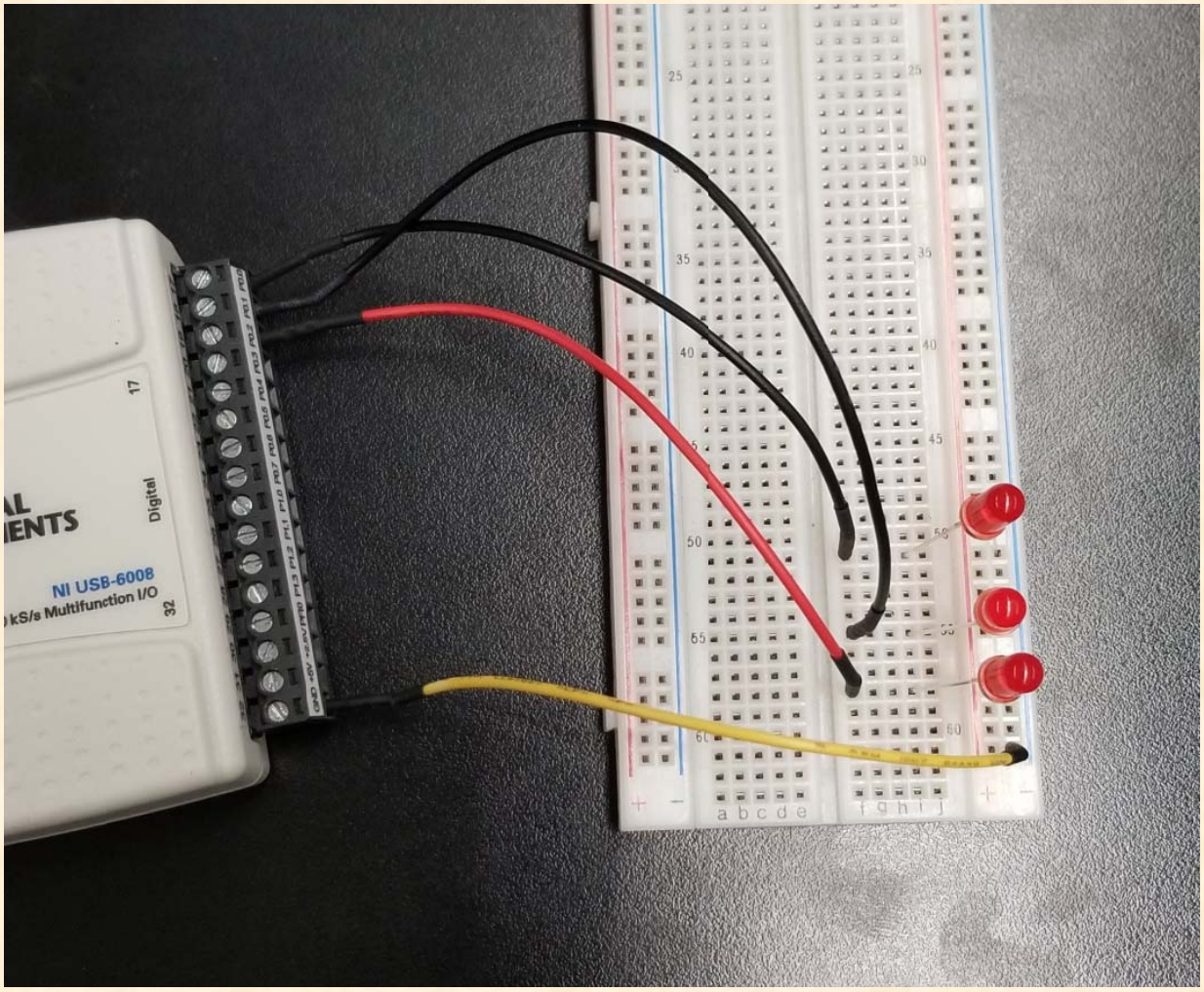
(2) Only the first and second LEDs switch on for one second.

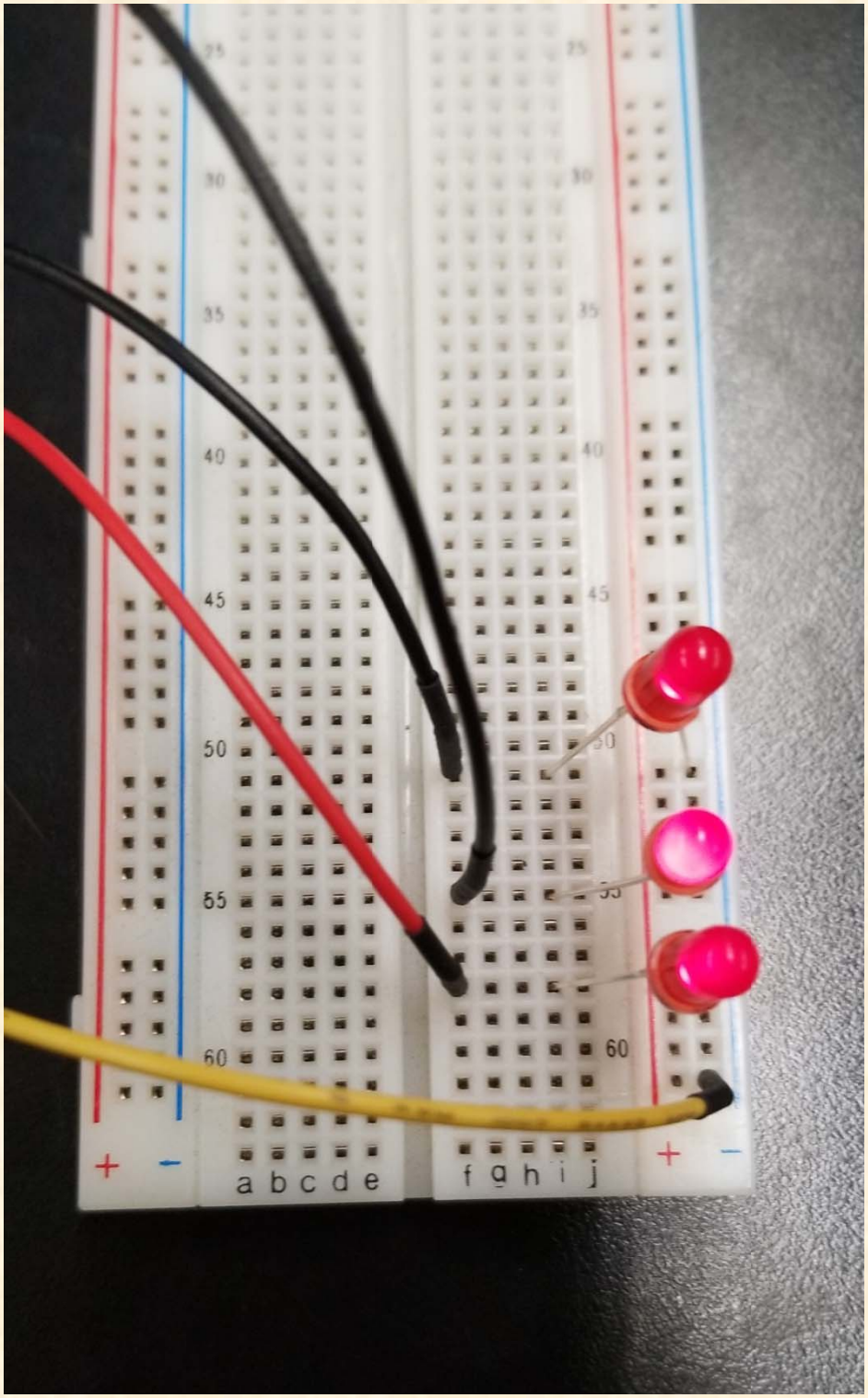
(3) Only the first LED switches on for one second.

(4) All 3 LEDs are switch off for one second

(5) Iterate (1) to (4) with a while loop

See the following 2 pictures for the hardware setup


NI USB-6008
kS/s Multifunction I/O
Digital
17
32
25
30
35
40
45
50
55
60
a b c d e
f g h i j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Instruction to Use USB 2008 DAC Device

1. Choose “Measurement I/O NI-DAQ DAQ-Assistant”

2. To control 3 LED light, in “DAQ-Assistant”, choose: “Generate Signals Digital Output Line output”, Then choose 3 output lines/terminals.
3. In the “Front Panel”, create an “Array”. Define the array element type as Boolean by dragging a Boolean button in the array.

4. Select 3 elements by highlighting three Boolean buttons ONLY. You can deselect them late.

The hardware connection is shown in the pictures above.