Tips for Event Driven LabView Virtual Instruments

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Some Tips for Event Driven Virtual Instruments

Event driven in LabView is very similar to the coding style in embedded systems. One simple way of doing this is by using three simple structures: a while loop controlled by a boolean (Stop) control, a Case controlled by an Enum constant with predefined values, and an Event structure that reacts on the programmed events. The continuous While loop ensures that the VI always runs until the stop signal is detected inside the Event structure. The Case structure normally contains three cases: Initialize, Run, and Quit (see Figures 1-??). By using the Enum constant with these three cases it is possible to control the flow of events on the VI. The initialization contains commands/assignments that are normally needed only at the beginning of execution. Inside the initialization the Case structure is forced to go to the Run case/state. The value of this signal representing the state of the VI is held by a shift register inside the While loop (small arrows on While loop left and right borders). Moreover, the Event structure lies inside the Run case. It is here where all the event driven actions are programmed similarly to interrupts in micro controllers. More information is available at the National Instruments website.

http://zone.ni.com/devzone/cda/tut/p/id/3331
http://zone.ni.com/devzone/cda/tut/p/id/5223
Figure 1: Initialization case (forced by enum constant)
Figure 2: Run case (forced to keep running unless Stop is detected)
Figure 3: Event structure timeout case controlled by Timeout (ms) control
Figure 4: Quit case (forced by event structure when detects the Stop control)
Figure 5: Event Driven