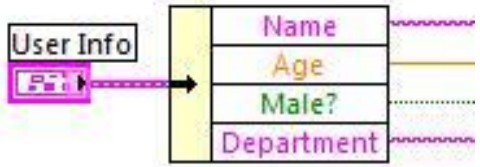
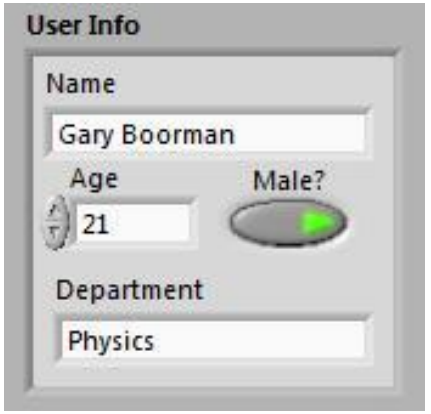
LabVIEW – Basics IV

Gary Boorman

Clusters I

- A Cluster is a collection dissimilar data-types

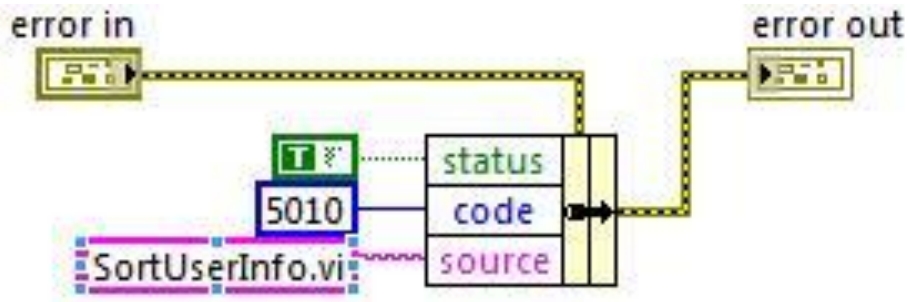




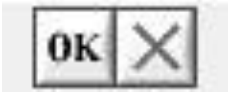
- Individual elements accessed by ‘unbundling’
- Bundle elements into a cluster
- Collect ‘like’ data into a coherent structure
- Use to pass lots of data to/from a sub-VI

Error Cluster

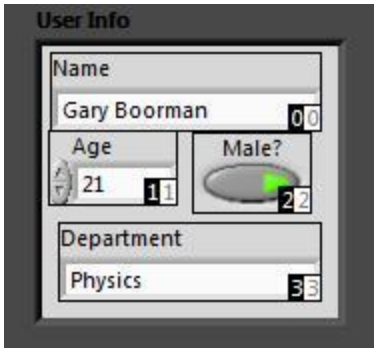
- Error Cluster has Boolean, I32 and String
- Indicates if an error occured in a sub-VI
- Very useful way of controlling program flow
- A sub-VI can add error information to help in debugging



Clusters II

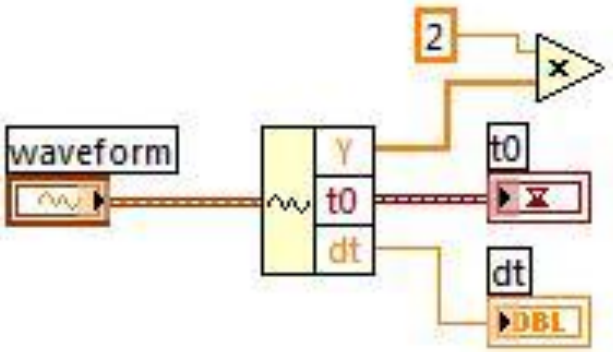
- The ‘order’ of elements can be important
- Order is changed on front panel object by right-clicking and selecting ‘Reorder Control...’
- Click on elements in required order
- Click on 

to confirm/cancel



Waveform

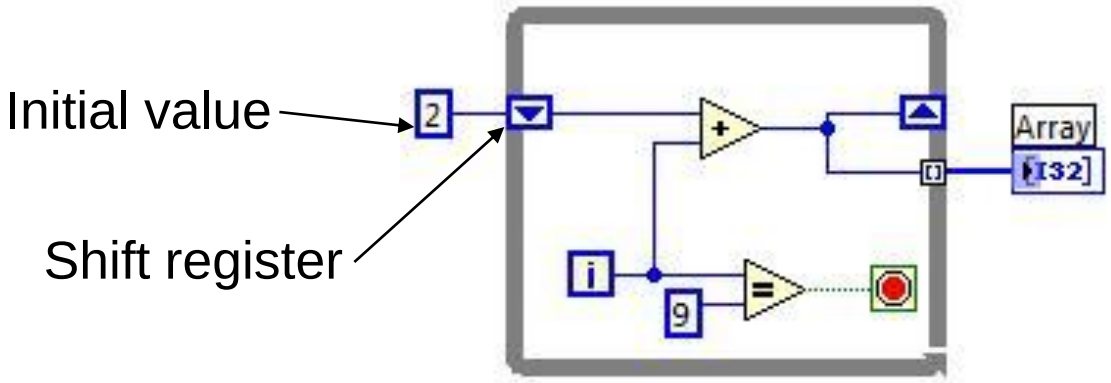
- Consists of numeric data (Y), start time (t0) and delta time (dt)



- Often used by DAQ hardware and analysis
- Treated in a similar way to clusters

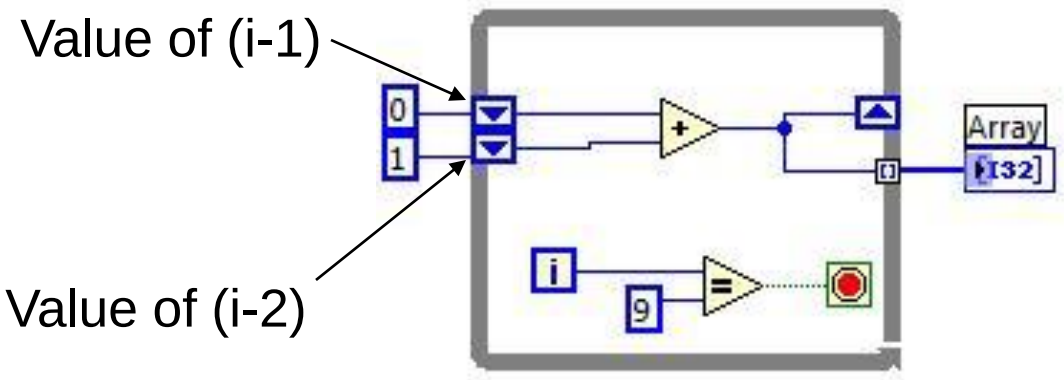
Shift Registers I

- Used with For and While loops to transfer data from one loop iteration to the next
- Shift register can be initialised – takes a specified value when VI is run



Shift Registers II

- Shift registers can be stacked, to access data from several preceeding iterations
- Top-most terminal retains most recent value



- If shift register is un-initialised, it retains last value even if VI has stopped running