

LabVIEW – Basics I



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Controls & Indicators – Front Panel

- Control values are set by User or a calling VI
- Indicator values are generated by Diagram (code)
- Controls and Indicators can be re-sized by dragging using the mouse
- Can be moved around the Front Panel using mouse
- Colours can be altered using ‘Set Colour’ tool



Controls & Indicators – Diagram

- Controls have heavy outline and black triangle on right-hand side
- Indicators have black triangle on left-hand side
- Can be displayed as large or small Icon (right-click and select ‘View As Icon’)
- Colour and text indicates data-type

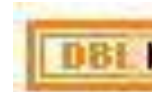


Data Types - Numeric

- Integer (8, 16, 32 or 64-bit; signed or unsigned). I32 ranges from -2^{31} to $2^{31}-1$ (-2147483648 to 2147483647)



- Floating-point (single, double, extended). DBL (64-bit), approx 15 decimal digits



- Complex (sgl, dbl, ext). CDB as DBL for both Real and Imaginary parts



Data Types - Others

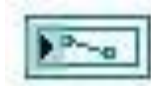
- String - contains text



- Boolean – True (1) or False (0)



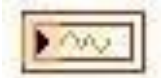
- Path – to a file



- Timestamp – date and time



- Waveform – contains t0 (Timestamp initial time), dt (DBL time-step) and Y (DBL array)



Front Panel Design/Style

- Use meaningful labels on Controls/Indicators
- Group Ctrl/Inds into 'like' areas
- Use alignment menus to adjust positions of objects



- Front Panel objects can have a caption displayed, rather than a label

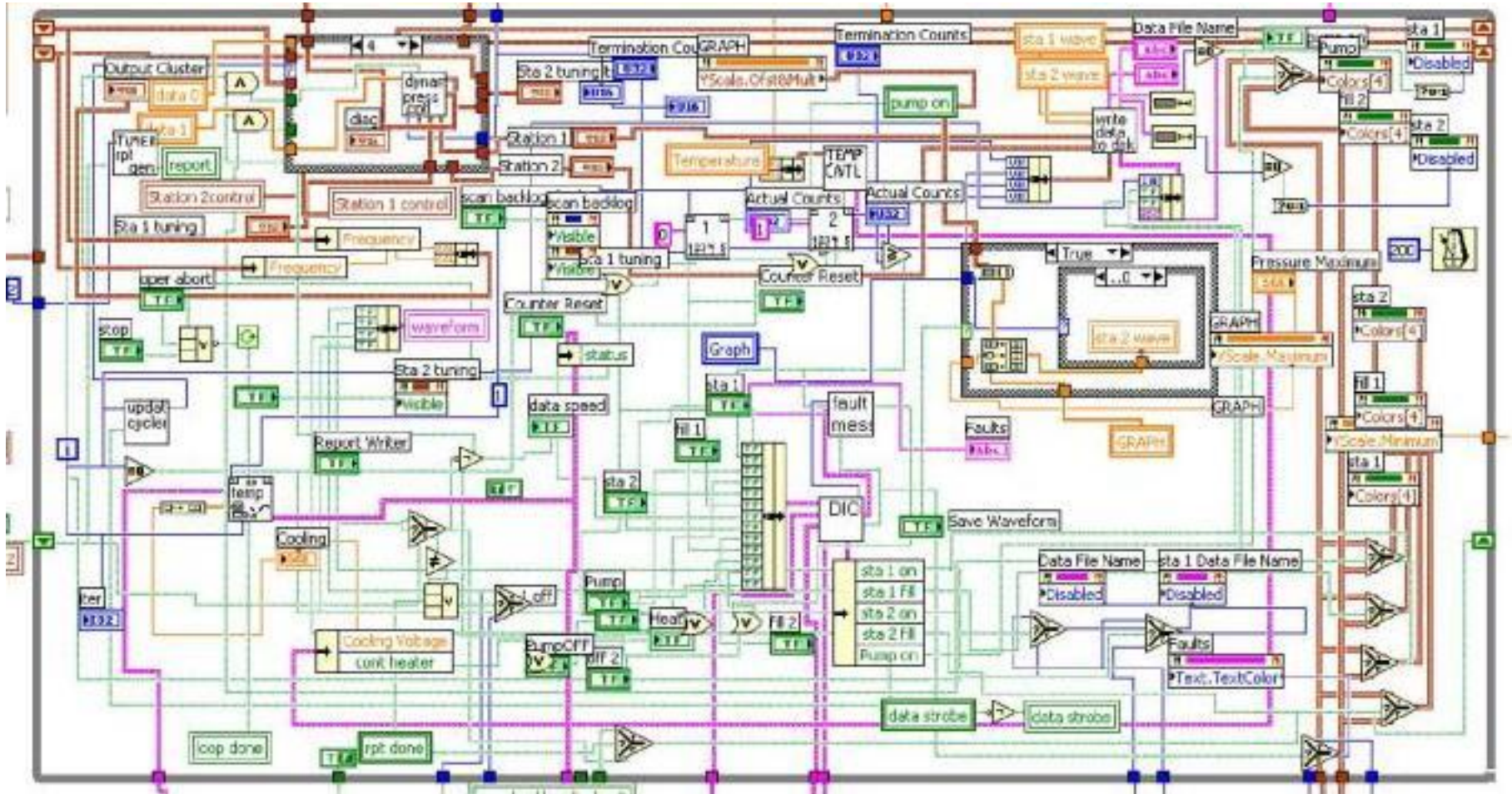


Diagram Design/Style

- Put Controls on the left, Indicators on the right
- Diagram should flow left to right
- Use comments to describe the function of each part of Diagram
- Avoid un-necessary crossing of wires
- Keep Diagram to one screen to avoid scrolling, using sub-VIs if needed
- Avoid wires underneath objects

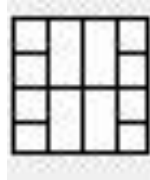


Ring any Bells?

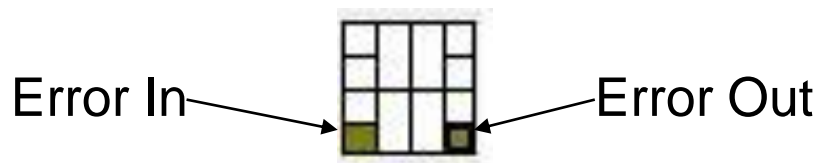


Connector Design

- Put Controls on the left, Indicators on the right (Indicators have heavy outline)
- The following 12-way connector is recommended



- When using Error Clusters, put Error Control bottom left, Error Indicator bottom right



Icon Design

- Icons are 32 x 32 pixels
- Use 256 or 16 colours, or B/W (for printing)
- Make the Icon meaningful
- Always use a border
- Try to use pictograms, rather than a lot of text



General Style

- Try to use the same font and font-size for every VI created
- Avoid over-colouring
- Try to make Front Panels and Diagrams no larger than necessary
- Ensure each VI is saved with a meaningful name

