LabVIEW 程式結構

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Outline

- 上週投影片勘誤
- Data type
  - Cluster
- Structures
  - 條件結構 Case Structure
    - Enum
  - 事件結構 Event Structure
  - 循序結構Flat Sequence Structure
- HW2

上週講義勘誤

Shortcut	Function
Ctrl + R	Run VI
Ctrl + B	Remove Broken Wires
Ctrl + E	Show Front Panel
Ctrl + T	Tile left and right
Ctrl +Shift + A	Align Item
Ctrl + 滑鼠左鍵(Drag Free Space)	Increase spacing
Ctrl + 滑鼠左鍵(Drag Item)	Copy Item
Ctrl + Alt + 滑鼠左鍵(Drag Free Space)	Decrease spacing
Shift + 滑鼠右鍵	Tool Palette

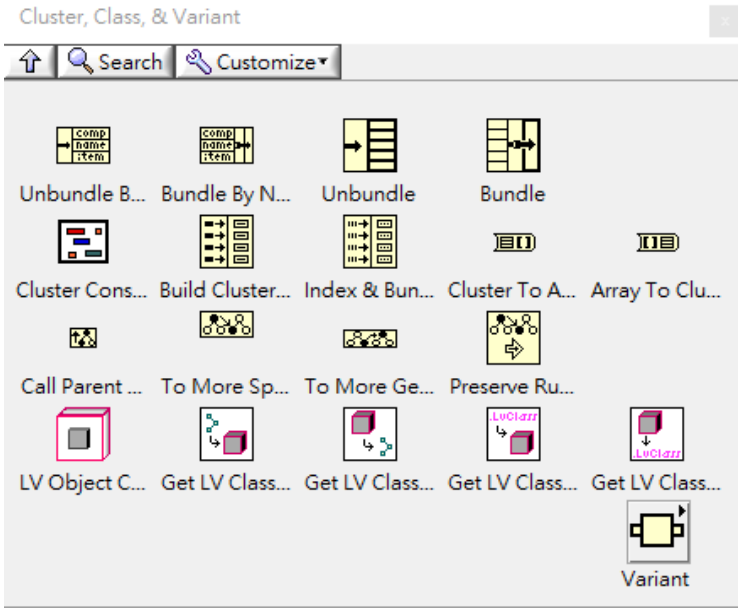
Cluster

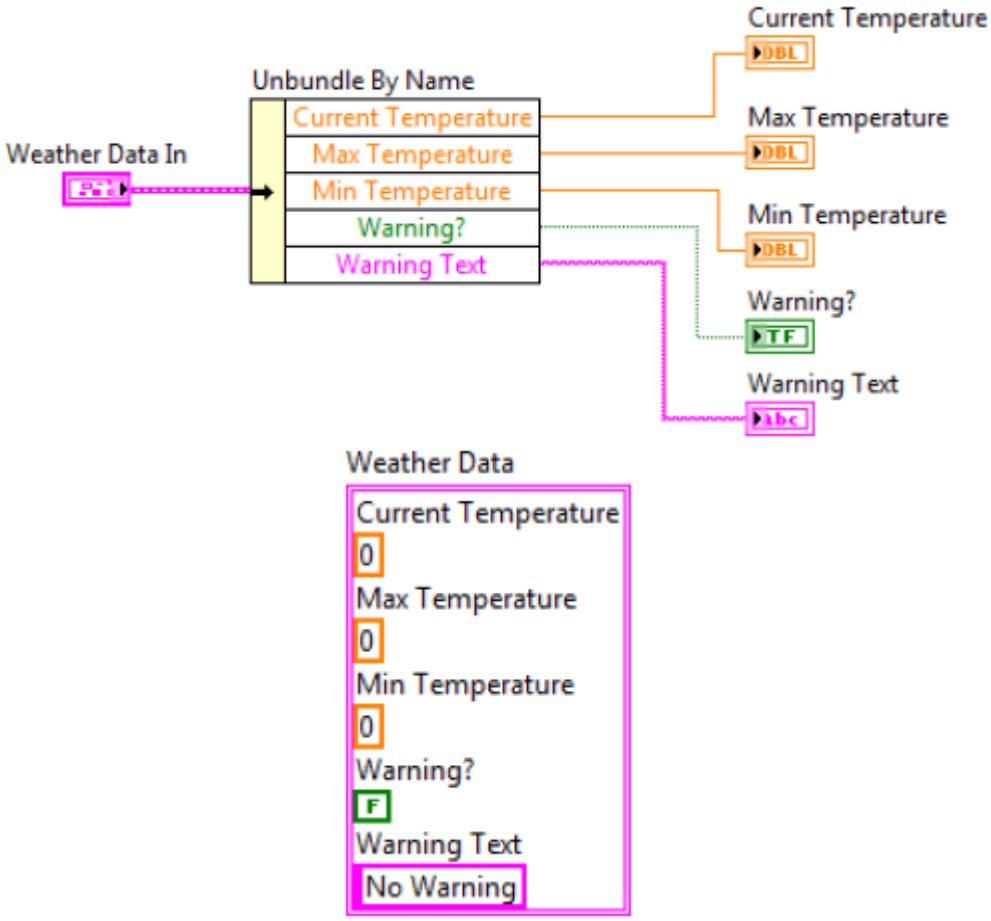
Cluster是一種可以一次裝很多資料型態的資料

可以將凌亂的雜線有系統的收納

右鍵 >> Programming

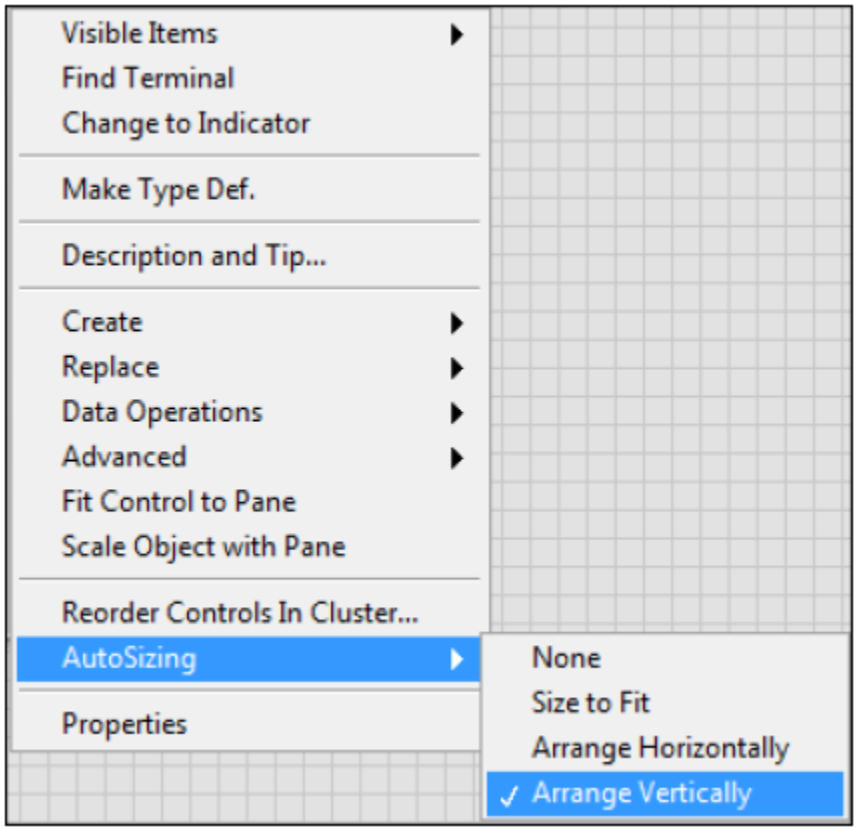
>> Cluster, Class, & Variant

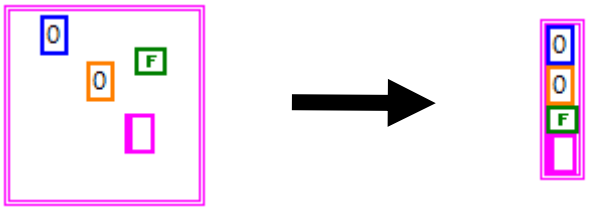




Cluster

右鍵 >> AutoSizing>> Arrange Vertically　可自動幫助排列Cluster



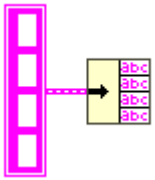


Cluster

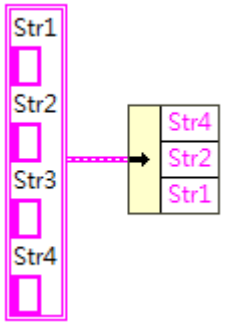
- 提取Cluster內部的元素，可以使用Unbundle or Unbundle by name

  Unbundle: 一次提取Cluster內所有元素。

  Unbundle by name: 一次提取Cluster內所有元素。



Unbundle



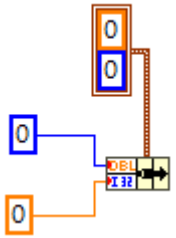
Unbundle by name

Cluster

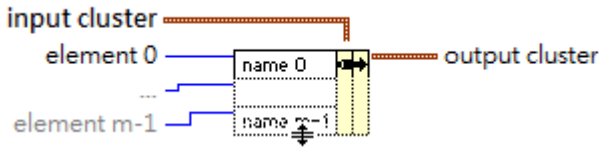
- 組合元素到Cluster，可以使用Bundle or Bundle by name

  Bundle: 將元素組合成一個Cluster，若上方接上Cluster代表修改該Cluster的值，反之產生一個Cluster。

  Bundle by name: 按照元素對應的label修改Cluster的值。

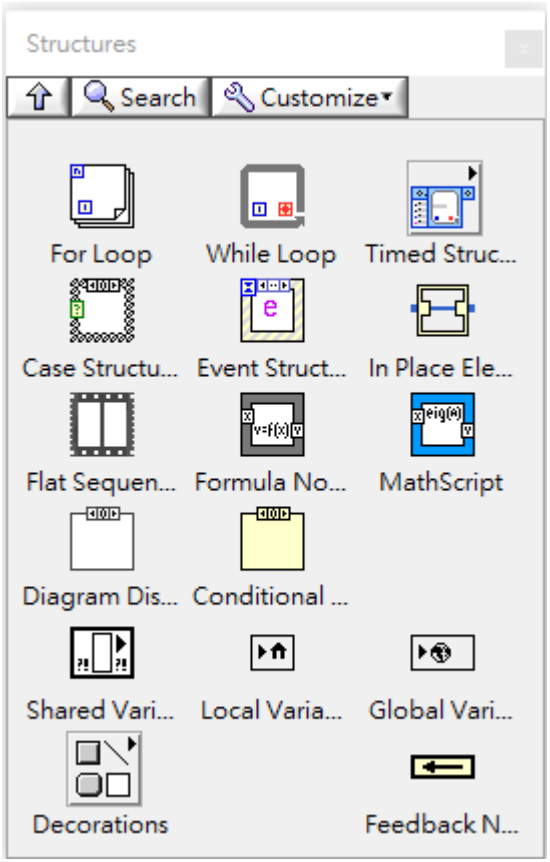


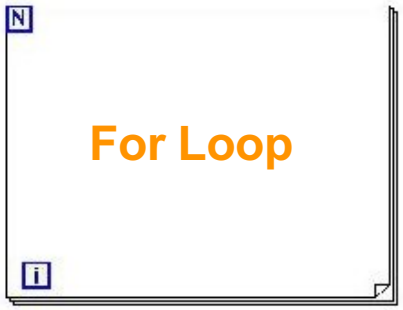
Bundle



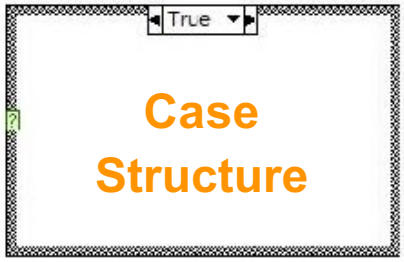
Bundle by name

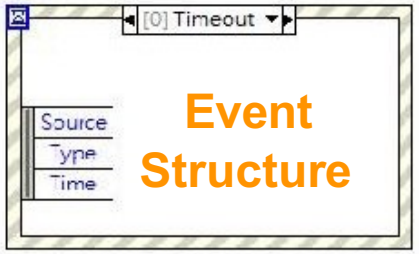
Structures

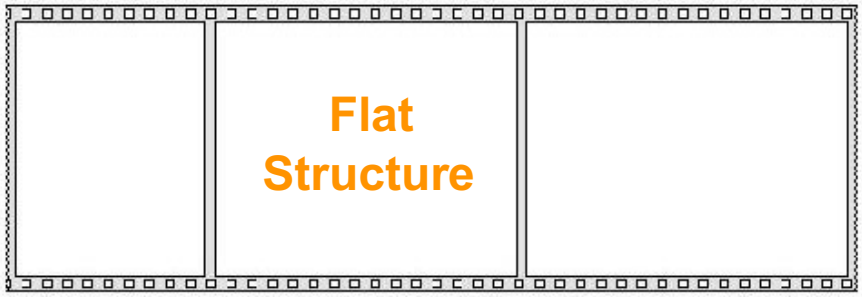

Structures
Search
Customize
For Loop
While Loop
Timed Struc...
Case Structu...
Event Struct...
In Place Ele...
Flat Sequen...
Formula No...
MathScript
Diagram Dis...
Conditional ...
Shared Vari...
Local Varia...
Global Vari...
Decorations
Feedback N...


For Loop


While Loop


True
Case
Structure

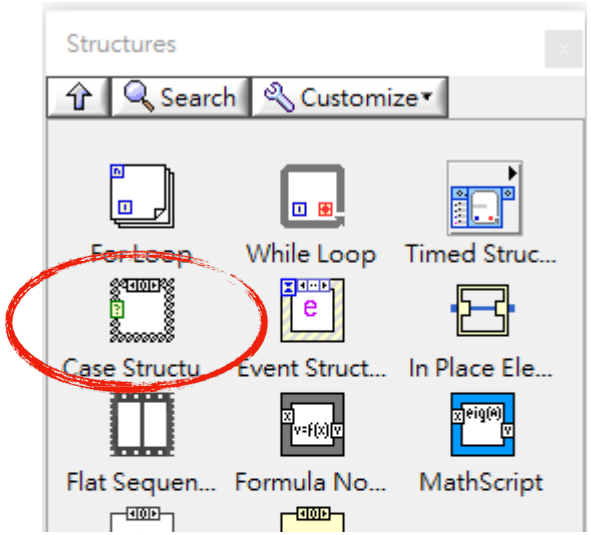

[0] Timeout
Source
Type
Time
Event
Structure

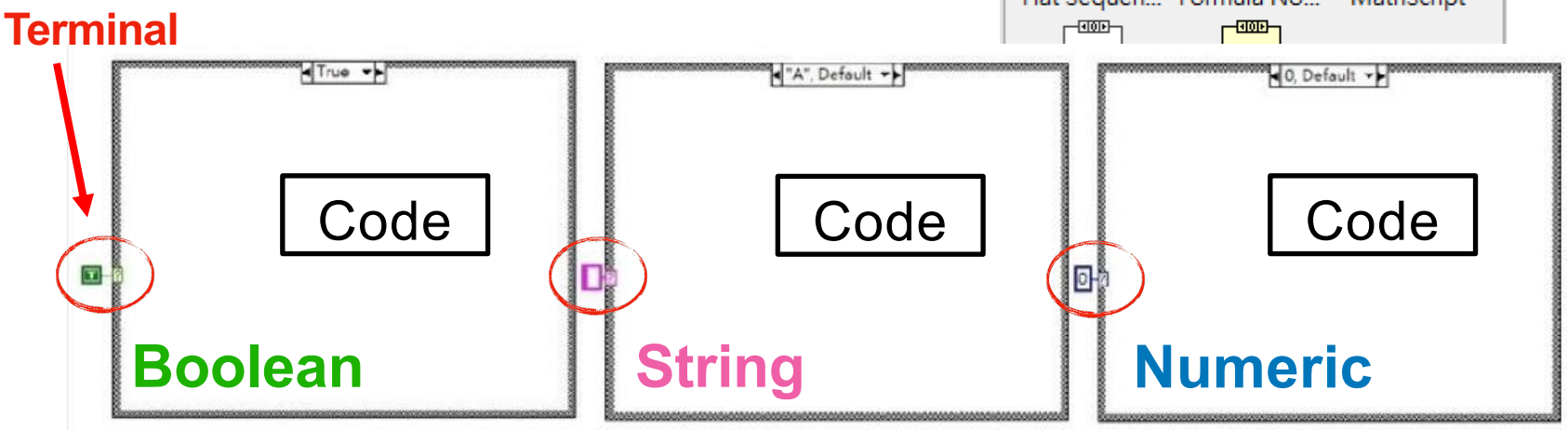

Flat
Structure

條件結構 Case Structure

Structures >> Case Structure

根據不一樣的條件，執行相對應的 code

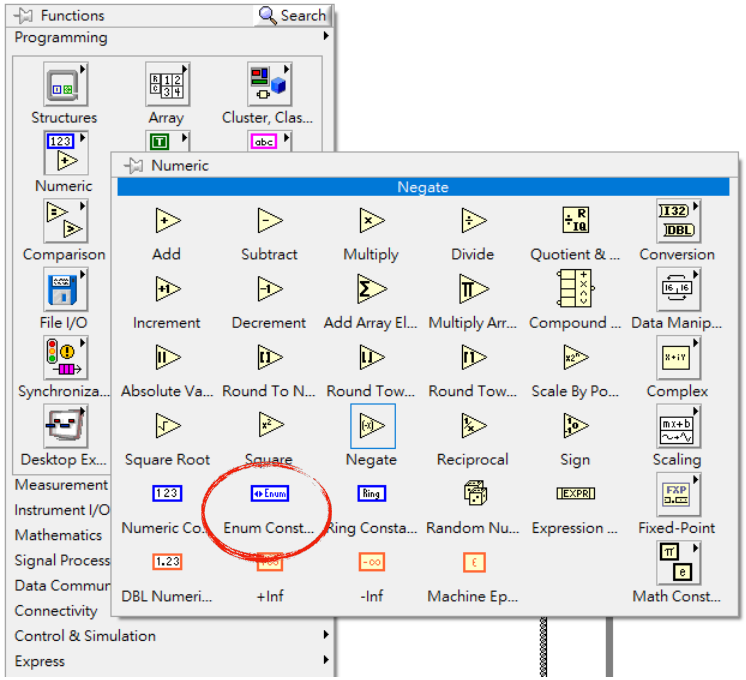


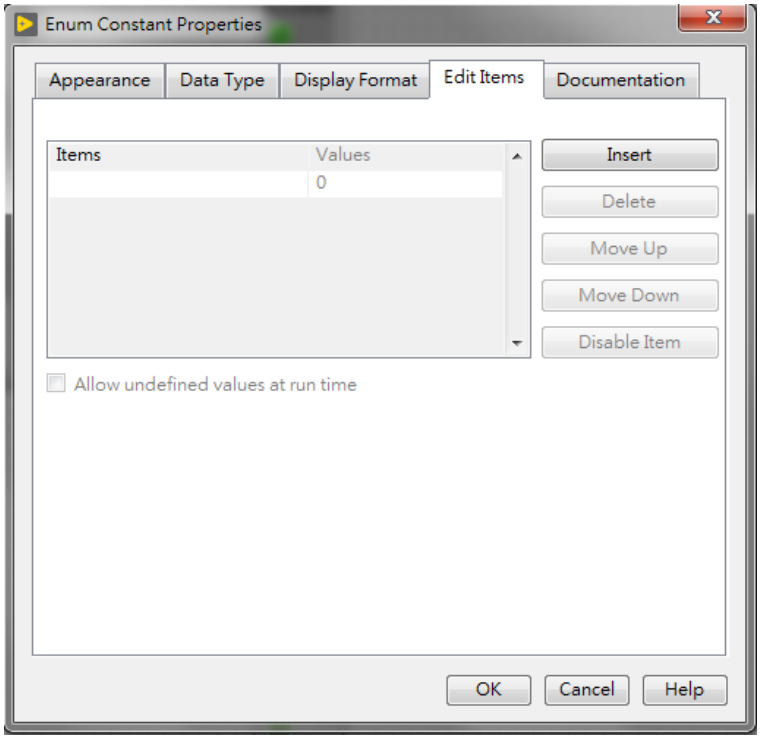


條件結構 Case Structure

- Enum: Enumeration(列舉)是具有相應整數值 (integer)的字串 (string)標籤列表，經常與Case Structure做搭配。

  右鍵 >> Numeric>> Enum Constants

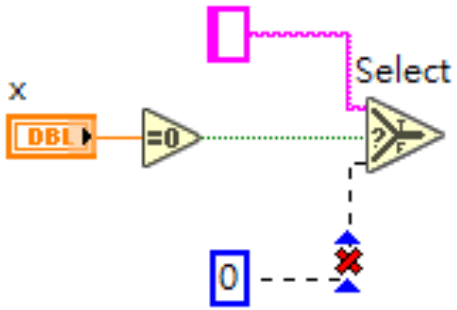




條件結構 Case Structure

- Select: 另一種具有條件篩選功能的工具，篩選條件只接受Boolean。

  右鍵 >> Comparison>> Select

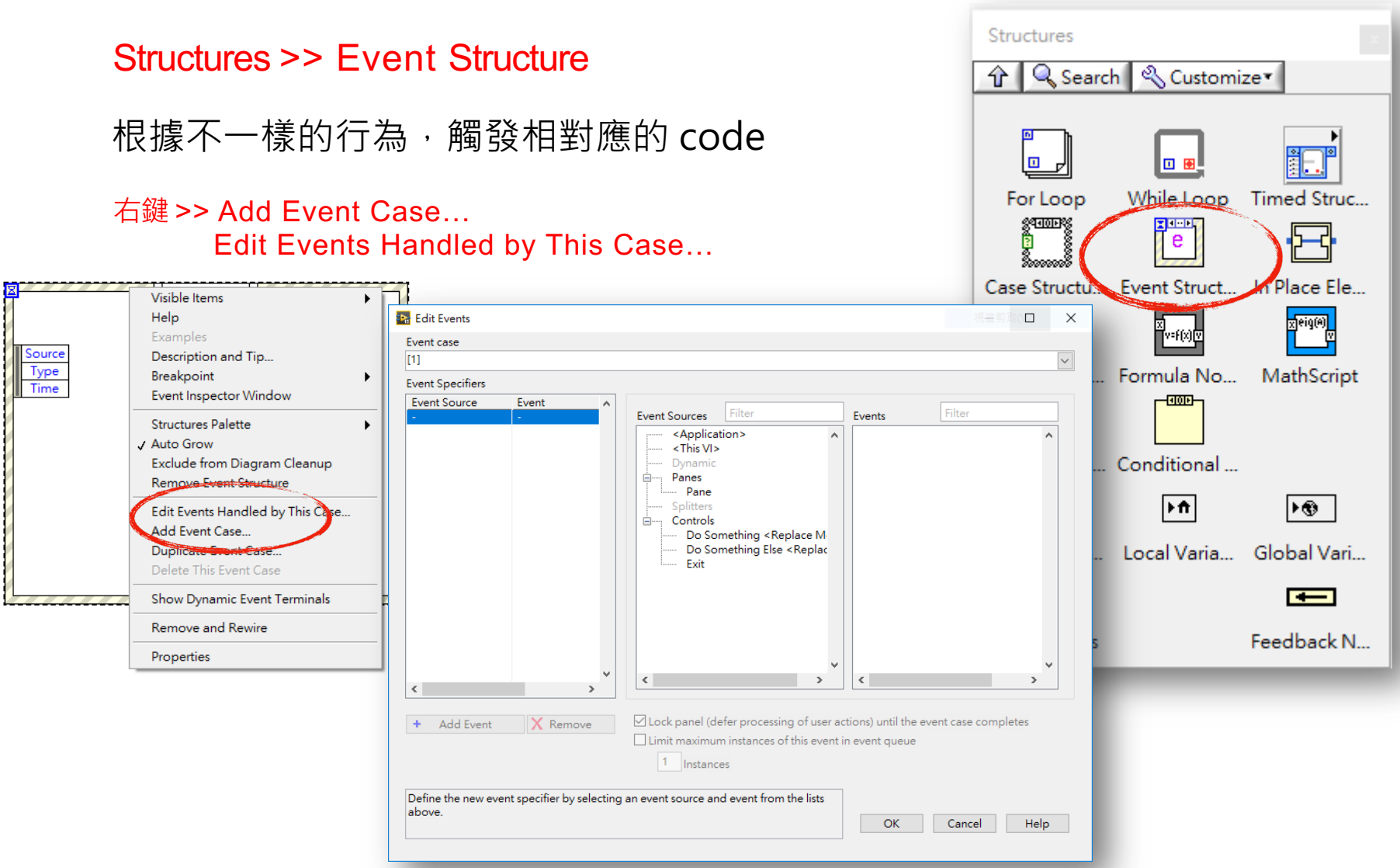


事件結構 Event Structure

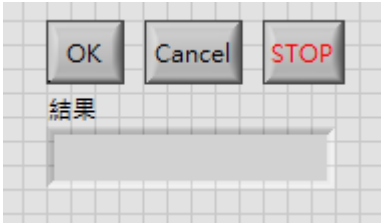
Structures >> Event Structure

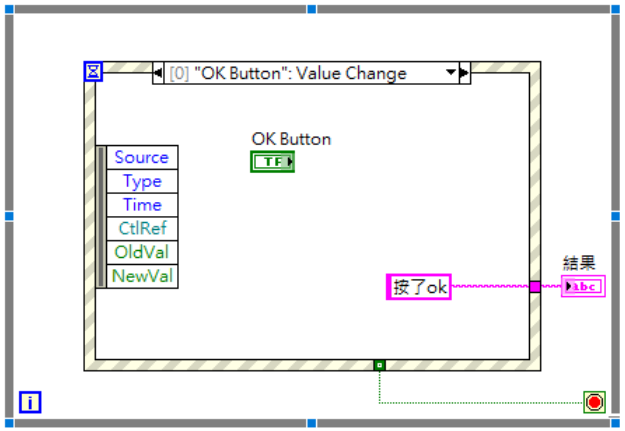
根據不一樣的行為，觸發相對應的 code

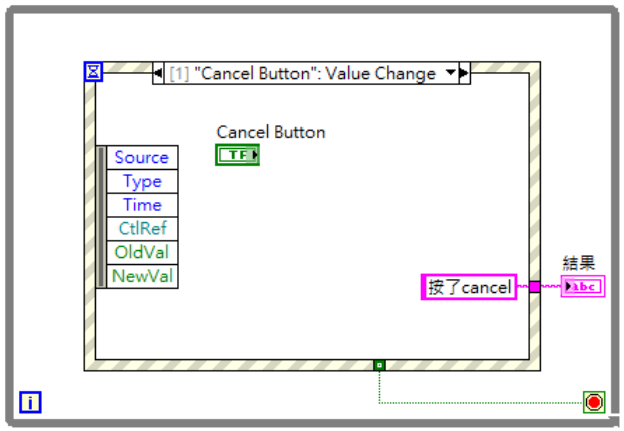
右鍵 >> Add Event Case…
Edit Events Handled by This Case…

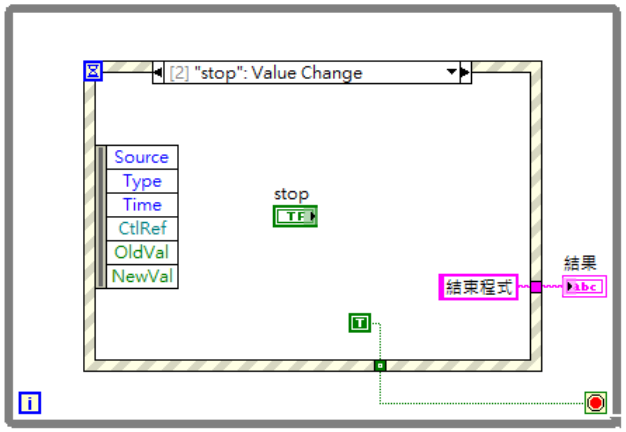


事件結構 Event Structure





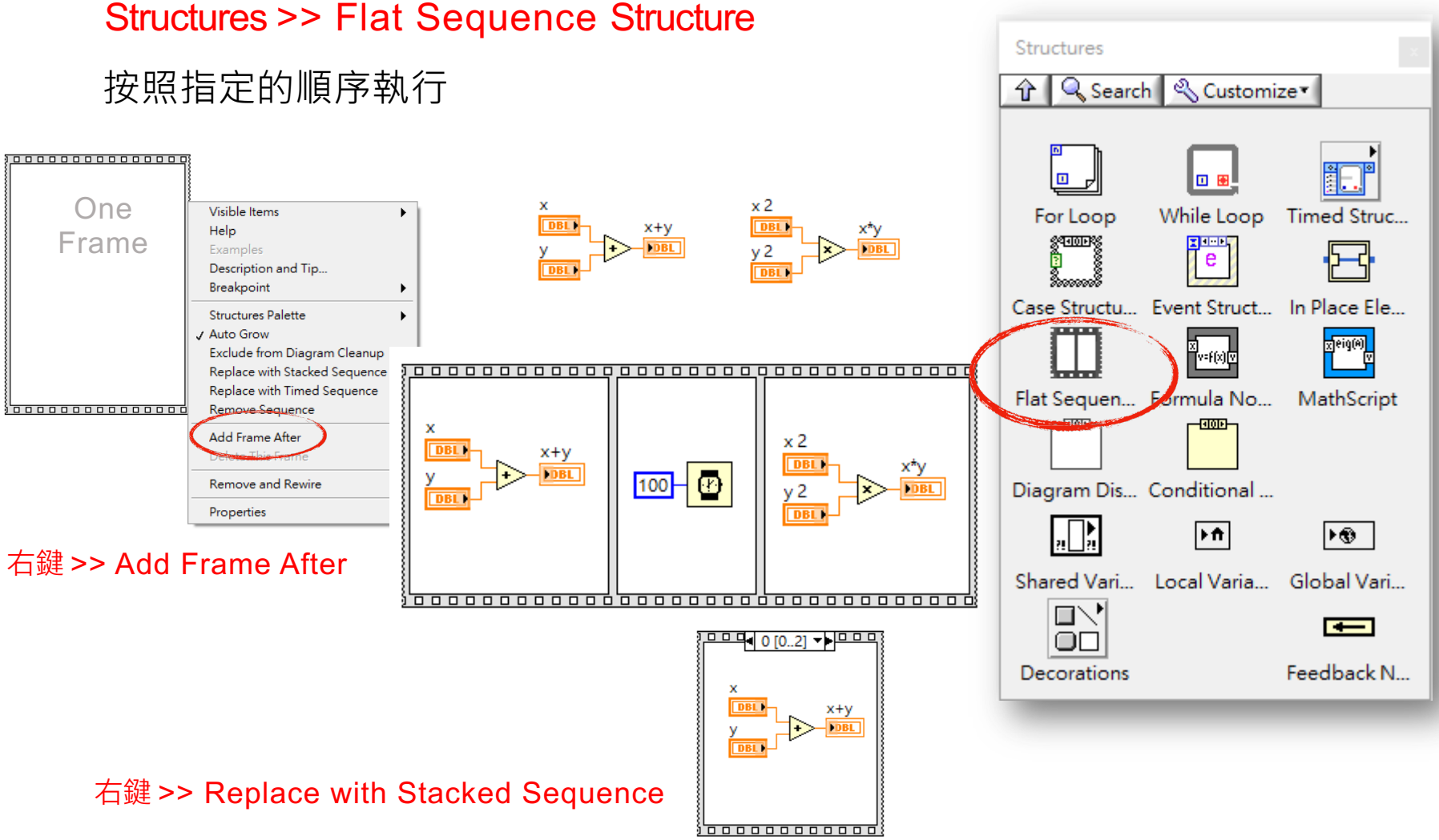




循序結構
Flat Sequence Structure

Structures >> Flat Sequence Structure

按照指定的順序執行



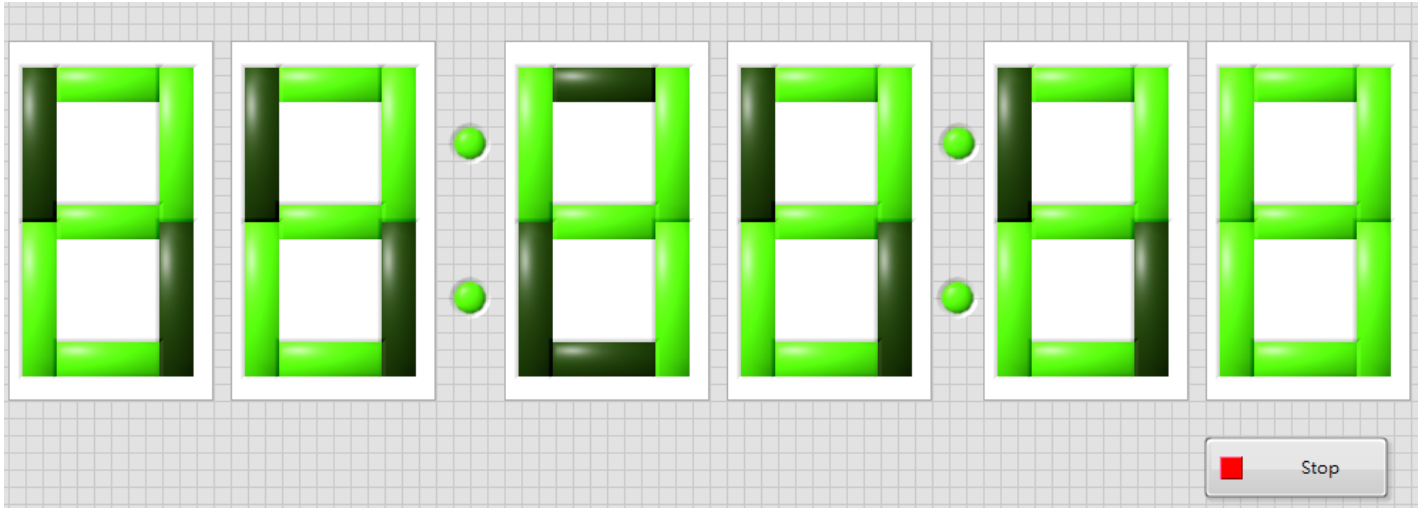
右鍵 >> Add Frame After

右鍵 >> Replace with Stacked Sequence

HW2 時鐘

- 規則

1. 寫出一個24小時制與電腦時間顯示相同的電子時鐘，精準到秒
2. 效果請參考七段顯示器
3. 時分秒中間的「:」需以「亮250毫秒，暗750毫秒」的方式顯示



HW2 時鐘

- 提示

1. 透過“Second To Date/Time”可呼叫出與電腦時鐘同步的時間。
   Output為Cluster，可先對Output創立Indicator看看格式。
   右鍵>>Timing>> Second To Date/Time

2. 本次作業為自由發想題，要使用到課堂沒教過的Function也可以。
   對於Labview新手，可參考我使用的架構與功能
   Structure: While loop with Shift Register, Flat sequence
   Data type: Int, Boolean, Array, Cluster
   Timing: Second To Date/Time, Wait(ms), Wait until next ms Multiple

作業繳交方式

- 繳交時間: 3/19 12:00 助教課
- 繳交方式: 整個Project跟所有的vi都放在資料夾下，資料夾取名為學號。
- 遲交扣分方式: 一天分數*90%、2天80%、3天70%、超過4天0分

- 有任何問題至820詢問或直接Email我:
- Email: f105601043@g.ncu.edu.tw