

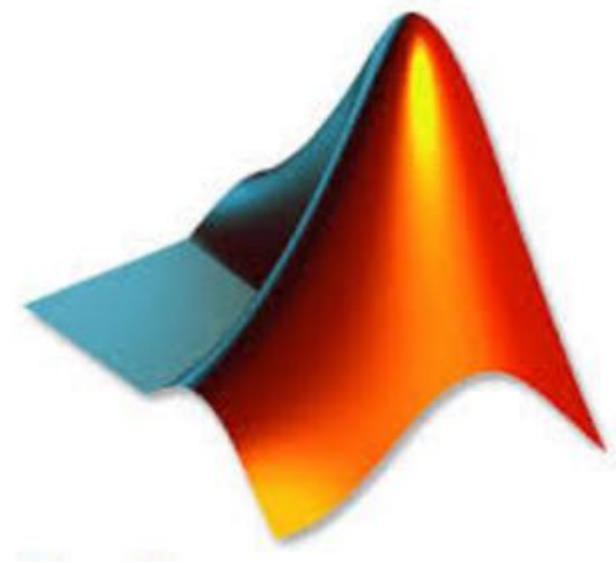


# SIMULINK 教學

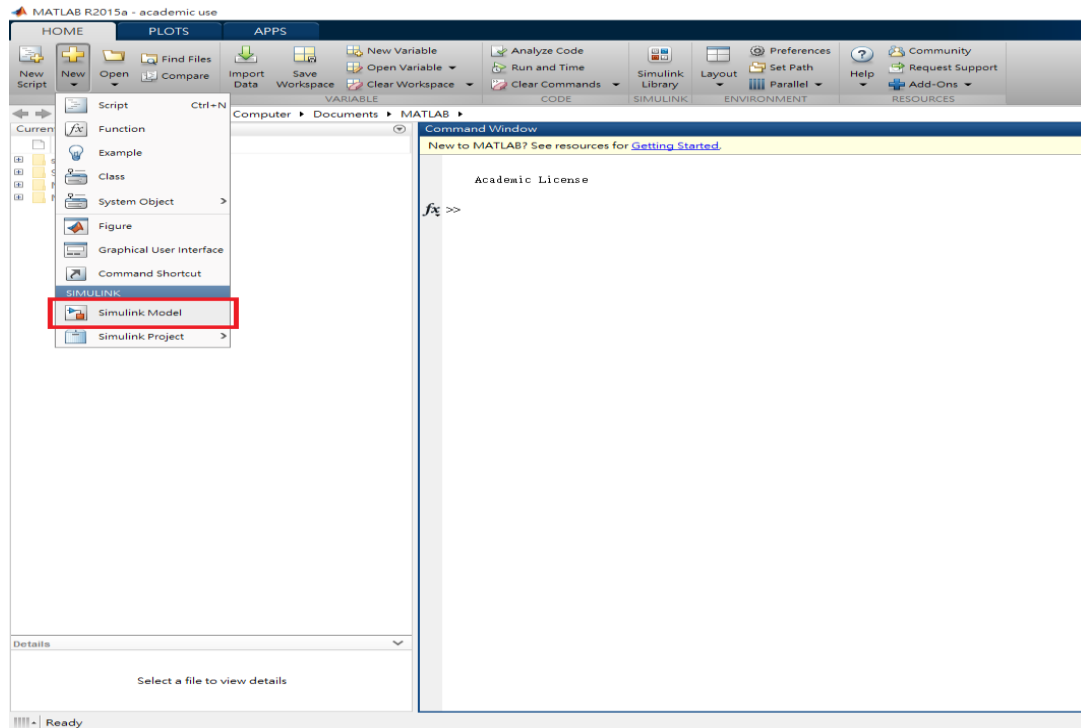




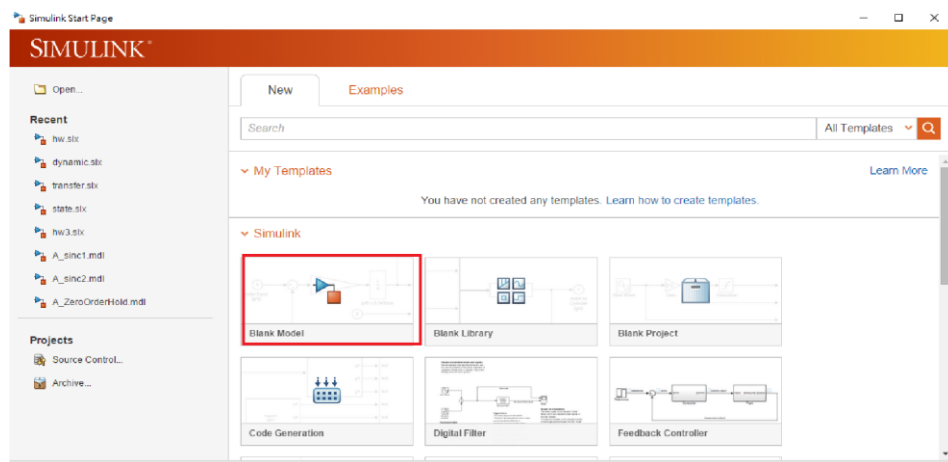
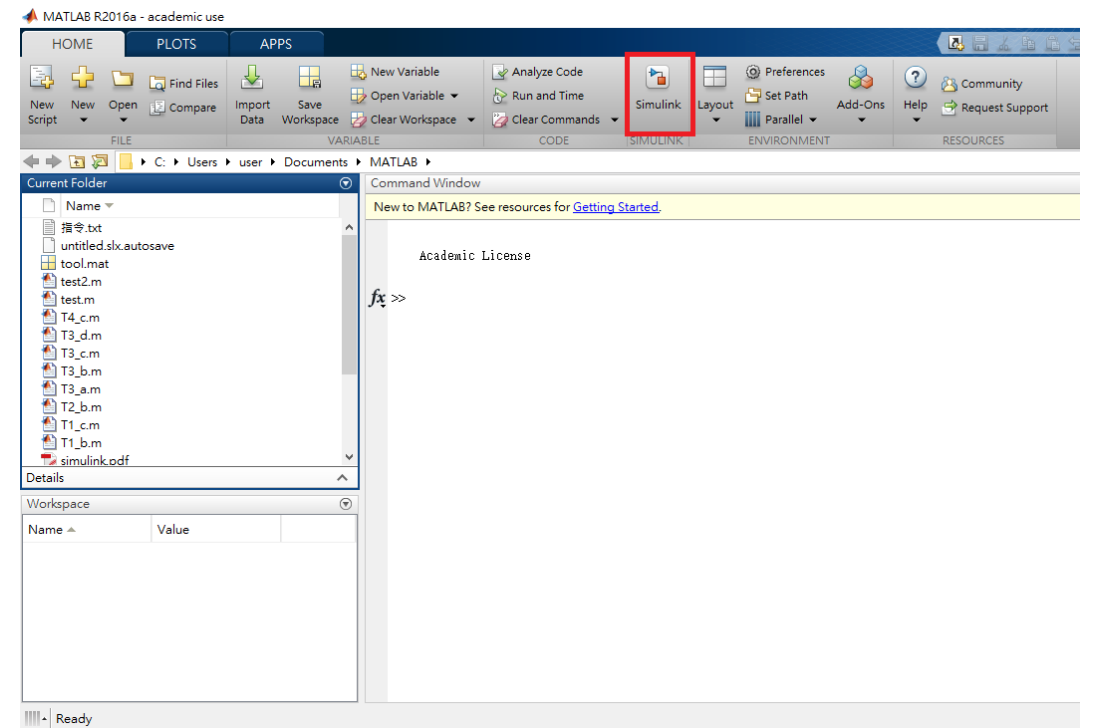
# 打開MATLAB



# 按下New後，選取Simulink Model



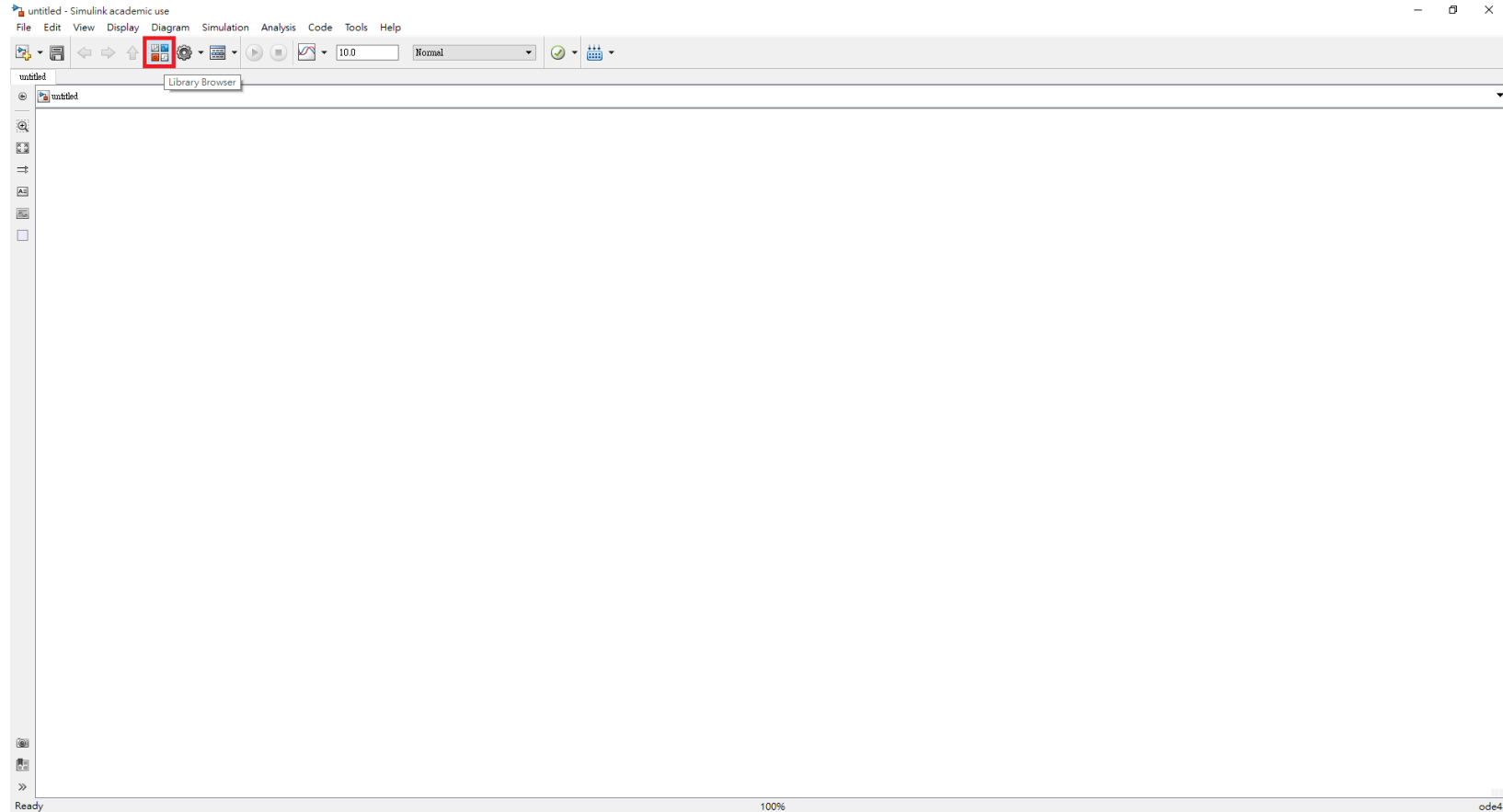
或



若MATLAB為新版，接著按Blank Model



# 按下 Library Browser



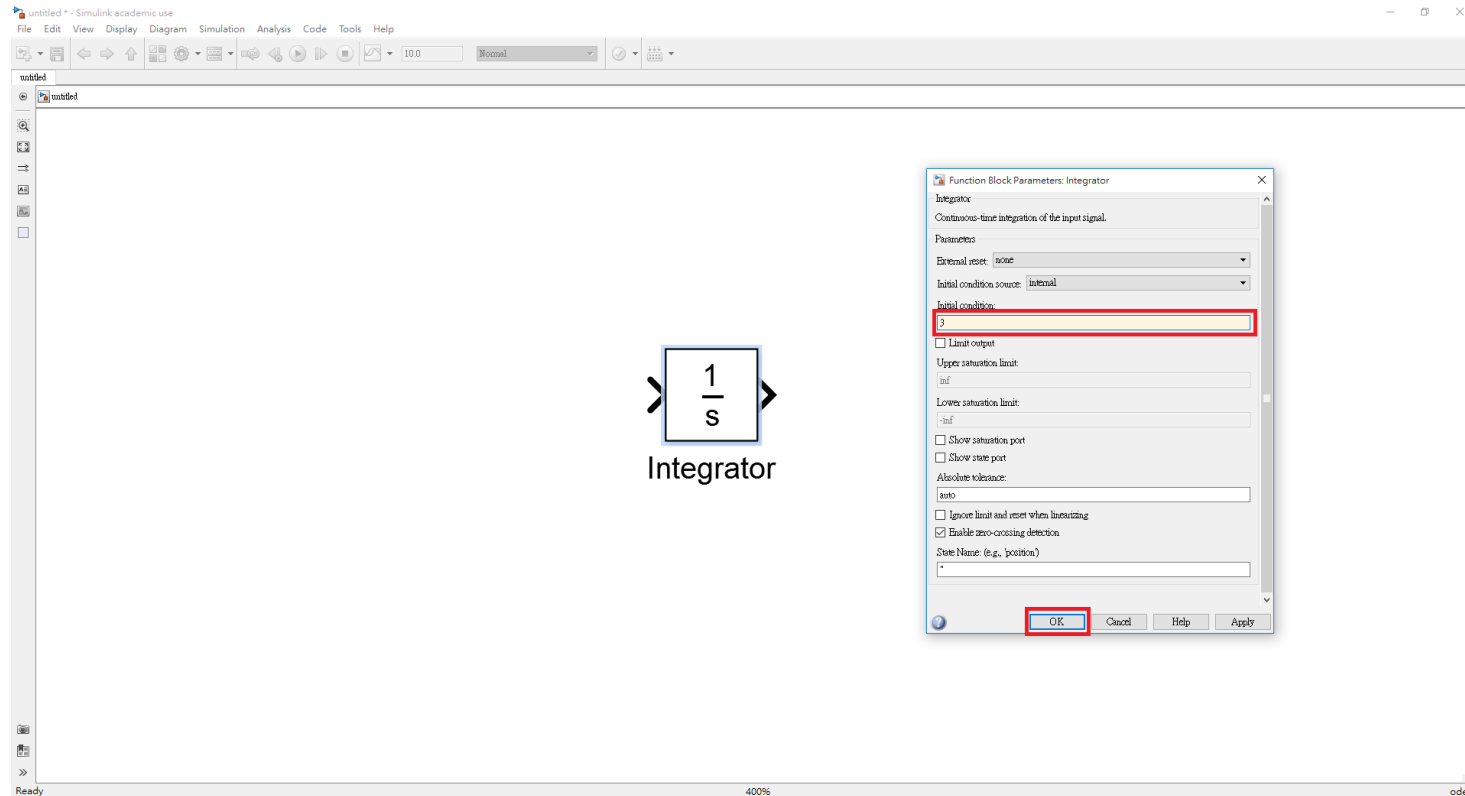


# 搜尋Integrator拉進Simulink Model

The screenshot displays the Simulink environment. The main workspace shows a single block with the transfer function  $\frac{1}{s}$  and the label "Integrator". The Simulink Library Browser on the right is open, with the search bar containing "integrator". The search results show 14 blocks found, with the "Integrator" block highlighted in the "Commonly Used Blocks" section. The block icon is a rectangle with  $\frac{1}{s}$  inside and arrows on the sides.

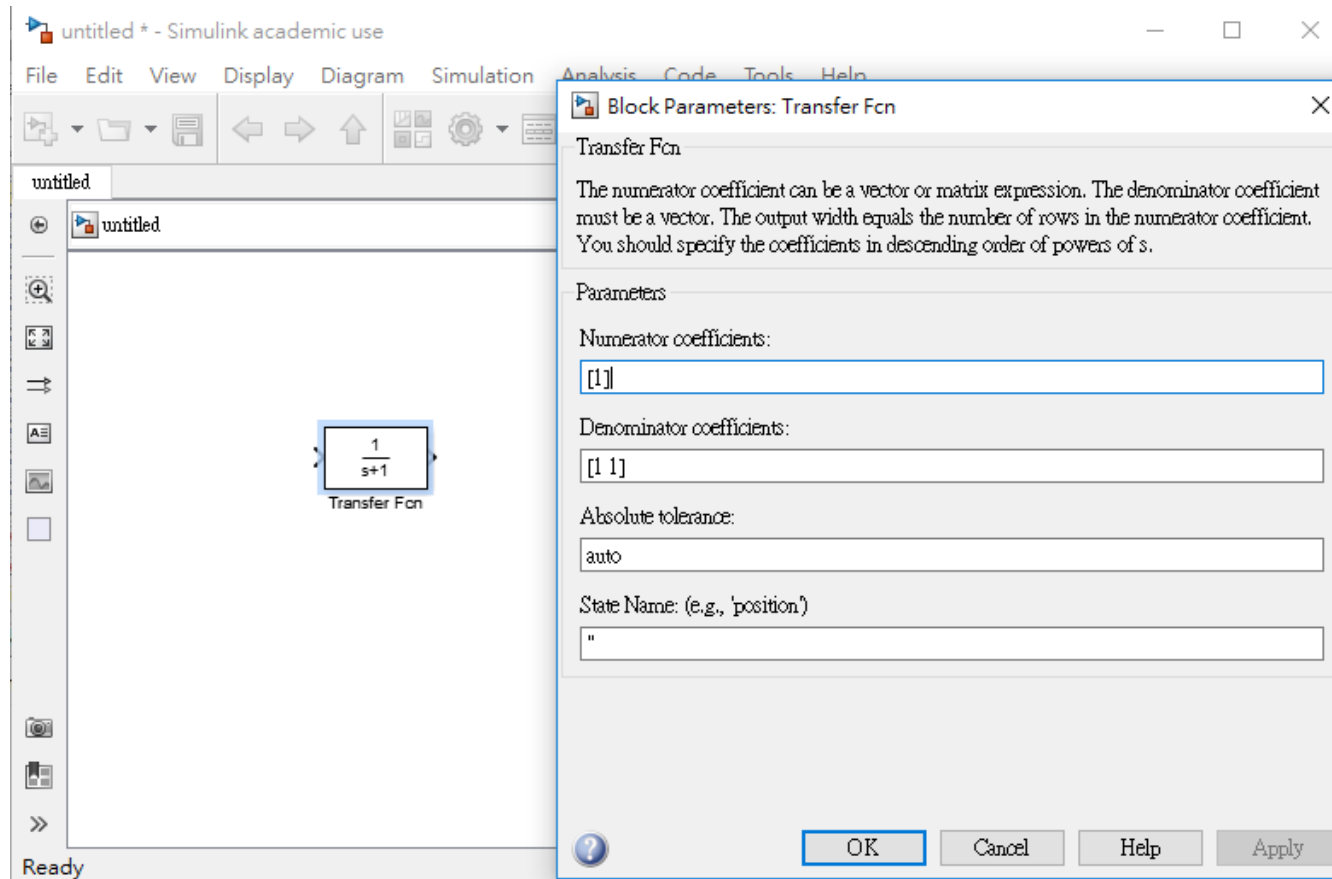


點擊兩下integrator會出現設定視窗，可設定 Initial condition 的值，按下OK





# 轉移函數(Transfer Fcn)



Numerator 為分子係數  
Denominator 為分母係數  
階數由高到低

Ex:  $s/s+2$

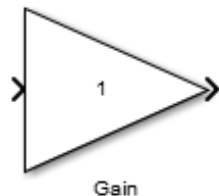
$$\text{Num} = [1 \ 0]$$

$$\text{Den} = [1 \ 2]$$

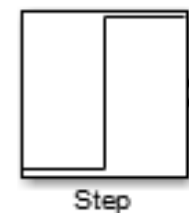


# 常用功能

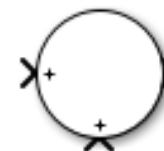
- 倍率是使用Gain元件



- 步階輸入為Step元件(預設是從1s後才有值，可以改成從0s開始)  
其他還有Sine Wave Function、Ramp



- 加減法是使用Sum/Add元件(點兩下後List of signs  
內的|++，可自行改成|+++擴充成三個相加)  
(改變|和+-順序可改變輸入角度)



- Mux元件可以重疊顯示輸出圖形



- Saturation



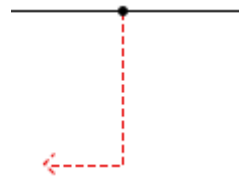




# 常用功能

- 輸出接到Scope，  
Run完後點兩下觀看輸出波形  
(右鍵Signal&Port可設定輸出數量)

- 按右鍵或Ctrl+左鍵拉分支線

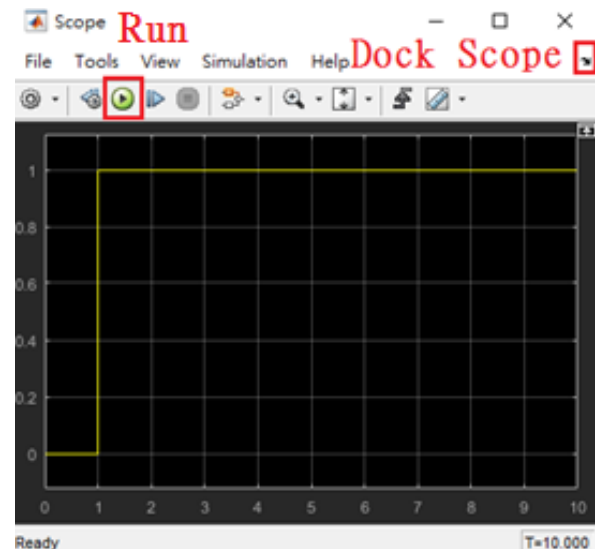
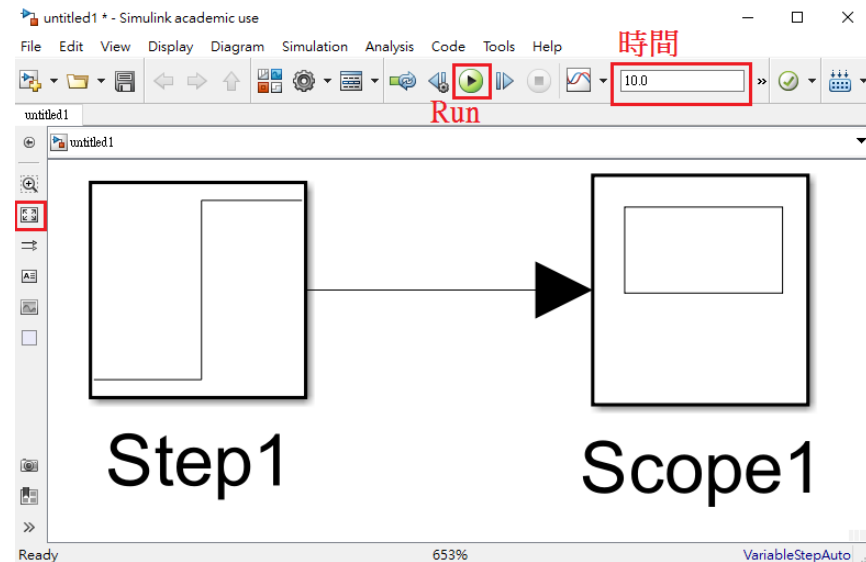


- 欲旋轉元件方向，元件上按右鍵，Rotate&Flip

- 線點兩下可增加文字註解

欲在輸出視窗顯示註解，在輸出視窗左上角

View→Configuration Property→Display→Show Legend





更多資料可參考

- MATLAB 官網

<https://www.mathworks.com/help/simulink/index.html>

- 台大資工張智星教授

<http://mirlab.org/jang/>

