**Sample Code & 作業內容**

請參閱作業範例：Day73\_Gradient Descent.ipynb，Find the local minima of the function y=(x+5)² starting from the point x=3¶

請嘗試使用不同的組合驗證 learning rate 對所需 iteration 的影響 lr = [0.1, 0.0001] 主要驗證 Lr 對於grandient 收斂的速度

作業請提交Day73\_Gradient\_Descent\_HW.ipynb

[檢視範例](https://ai100-2.cupoy.com/samplecodelist/D73)

**參考資料**

* 知乎 - **Tensorflow中learning rate decay的技巧**

[**https://zhuanlan.zhihu.com/p/32923584**](https://zhuanlan.zhihu.com/p/32923584)

* 機器/深度學習-基礎數學(二):梯度下降法(gradient descent)

[**shorturl.at/iCHW2**](http://shorturl.at/iCHW2)

**延伸閱讀– 如何設定學習率的衰減**

* exponential\_decay :指數衰減

         decayed\_learning\_rate = learning\_rate \* decay\_rate ^ (global\_step / decay\_steps)

* natural\_exp\_decay :自然指數衰減

         decayed\_learning\_rate = learning\_rate \* exp(-decay\_rate \* global\_step)

* inverse\_time\_decay :逆時間衰減

         decayed\_learning\_rate = learning\_rate / (1 + decay\_rate \* global\_step / decay\_step)

* polynomial\_decay :多項式衰減

         global\_step = min(global\_step, decay\_steps) decayed\_learning\_rate = (learning\_rate -

         end\_learning\_rate) \*(1 - global\_step / decay\_steps) ^ (power) + end\_learning\_rate