HW2的題目位於**09/23課程投影片最後一頁**，另外，以下幾點請大家注意一下:

1. 第一題請參考課本Table 1.1的寫法。
2. (第二、三題) 證明題，請大家盡可能地詳列證明步驟。
3. (第四、五題) 請在word檔中以表格列出n=100, 200, ...., 3000時，程式執行所需的實際時間，並畫一張圖表，此外請標示清楚座標軸標題以及單位。
4. 這份功課請以Word撰寫，為避免格式跑掉，請同時將WORD和PDF檔上傳至"E-Learning > 作業/報告 > Homework 2"處。
5. 檔名格式為"HW2\_學號\_姓名"。

Exercise

p69 1.7.3(a)

1. for(i=1; i<=n; i++)
2. for(j=1; j<=i;j++)
3. for(k=1;k<=j;k++)
4. x++;

|  |  |  |  |
| --- | --- | --- | --- |
| line | s/e | frequency | total steps |
| 1 | 1 | n+1 | n+1 |
| 2 | 1 |  |  |
| 3 | 1 |  |  |
| 4 | 1 |  |  |
| total |  | | |

p69 1.7.3(b)

1. i=1;
2. while(i<=n)
3. {
4. x++;
5. i++;
6. }

|  |  |  |  |
| --- | --- | --- | --- |
| line | s/e | frequency | total steps |
| 1 | 1 | 1 | 1 |
| 2 | 1 | n+1 | n+1 |
| 3 | 0 | 0 | 0 |
| 4 | 1 | n | n |
| 5 | 1 | n | n |
| 6 | 0 | 0 | 0 |
| total | 3n+2 | | |

p71 1.7.8(a)

show is correct

Prove:

p71 1.7.8(i)

show is correct

Prove:

p72 1.7.9(b)

show is incorrect

Prove:

p73 1.7.13(需要實際運行，並用excel畫出時間圖)

Consider function Add (Program 1.22).

1. Obtain run time for n=100, 200, …3000.

N secend

|  |  |
| --- | --- |
| 100 | 0 |
| 200 | 0 |
| 300 | 0 |
| 400 | 0 |
| 500 | 0.001 |
| 600 | 0.002 |
| 700 | 0.001 |
| 800 | 0.002 |
| 900 | 0.003 |
| 1000 | 0.007 |
| 1100 | 0.008 |
| 1200 | 0.011 |
| 1300 | 0.014 |
| 1400 | 0.015 |
| 1500 | 0.017 |
| 1600 | 0.019 |
| 1700 | 0.02 |
| 1800 | 0.028 |
| 1900 | 0.026 |
| 2000 | 0.031 |
| 2100 | 0.043 |
| 2200 | 0.042 |
| 2300 | 0.042 |
| 2400 | 0.05 |
| 2500 | 0.066 |
| 2600 | 0.062 |
| 2700 | 0.091 |
| 2800 | 0.102 |
| 2900 | 0.103 |
| 3000 | 0.174 |

(b) Plot the times obtained in part(a)

p73 1.7.14(需要實際運行，並用excel畫出時間圖)

Do the previous exercise for matrix multiplication (Program1.35)