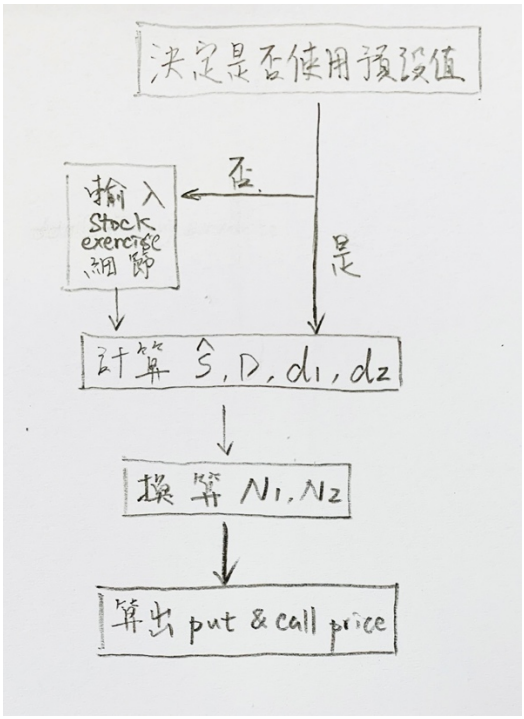
一、使用說明

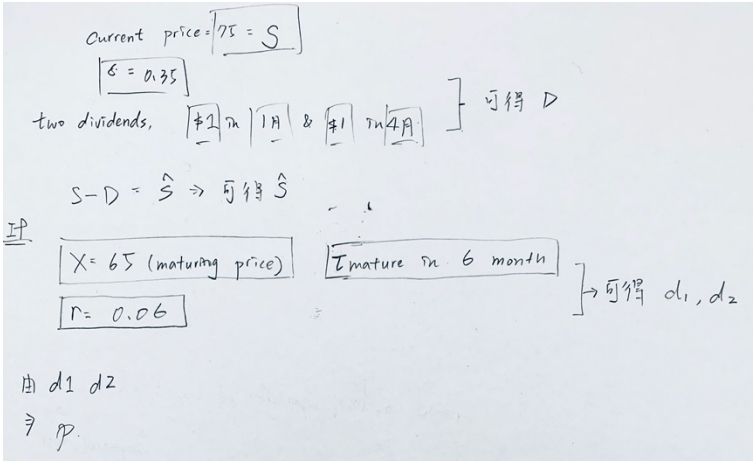
1. 下載檔案(此程式只能計算 2dividends stock)
2. 決定是否使用題目之數據。是則輸入 y，不使用則輸入 n，再依需輸入。
3. 即可得到 call price & put price。(此題答案 call price=$2.86, put price=$12.806)

二、流程圖



三、學習歷程

1. 首先，我先思考我要做什麼樣的東西



上圖是我思考的步驟。依照計算的邏輯把思路列出，並匡列可替換的變數。畢竟 put price 都已經被算出了，寫成程式意義不大。故我想製作可以更替輸入細節的一個計算器。

2. 實行想法

此題的計算十分簡單，輸入簡單幾個公式即可，製作上沒什麼困難。另外，為了方便，我還是寫的一個 if，若使用題目預設值就不用打字了。

四、程式說明

這次的程式碼十分簡單，詳請請看 hw4.py 之檔案，裡面有說明。
簡單來說，主要分三部分，讀取 input、if 決定是否使用預設值、公式運算。

五、運算結果

```
================== RESTART: /Users/James/Documents/git/hw4.py ==================
It is a Europian put calculator.
There is a stock which will pay two dividends,
Assumption1: Current price of the stock is $75 and has a sigma of 0.35.
Assumption2: The first dividends is $1 in 1 month, and the second one is $1 in 4 months.
Assumption3: Interest rate= 6%. There is exercise with price $65 maturing in 6 months.
Are assumptions valid? If true, all of the settings are defaulted(y/n):n
Then please input the deatials of the stock and the call option.
請輸入 current price of the stock:75
請輸入 sigma:0.35
請輸入 time of paying of the first dividend(month):1
請輸入 paying of the first dividend:1
請輸入 time of paying of the second dividend(month):4
請輸入 paying of the second dividend:1
請輸入 r(%):6
請輸入 strike pirce:65
duration of maturing(month):6
The value of the Europian put is $ 2.86
The value of the Europian call is $ 12.806
>>>
================== RESTART: /Users/James/Documents/git/hw4.py ==================
It is a Europian put calculator.
There is a stock which will pay two dividends,
Assumption1: Current price of the stock is $75 and has a sigma of 0.35.
Assumption2: The first dividends is $1 in 1 month, and the second one is $1 in 4 months.
Assumption3: Interest rate= 6%. There is exercise with price $65 maturing in 6 months.
Are assumptions valid? If true, all of the settings are defaulted(y/n):y
The value of the Europian put is $ 2.86
The value of the Europian call is $ 12.806
>>>
```

上下分別為手動與自動(預設值)輸入數據，皆為 call price=$2.86, put price=$12.806