

命令列輸入程式啟動所需額外參數(1/2)

<https://bit.ly/46mk1XK>

- ▶ 程式模擬碼表計時，秒數從0增加至300即停，讀秒間隔有一小段時間差，時間差之參數可由命令提示列給定。當顯示的讀秒為100的倍數時，即發出一個嗶聲以為提醒

在此路徑位置鍵入 `cmd` 將帶出終端機視窗

編譯 `stopWatch.cpp` 程式為 `.exe` 可執行檔之後，再透過檔案管理員找到程式所在的目錄夾

名稱	日期時間	類型	大小
stopWatch	2023/10/4 下午 05:46	C++ Source File	1 KB
stopWatch	2023/10/4 下午 05:45	應用程式	1,877 KB
stopWatch-Sleep-kbhit	2023/10/4 下午 03:59	C++ Source File	1 KB
stopWatch-Sleep-kbhit	2023/10/4 下午 03:58	應用程式	1,955 KB
stopWatch-maker.exe	2023/10/4 下午 03:56	C++ Source File	1 KB

Line: 14 Col: 21 Sel: 0 Lines: 28 Length: 750 Insert Done parsing in 0.016 seconds

命令列輸入程式啟動所需額外參數(2/2)

```
C:\Windows\System32\cmd.exe
Microsoft Windows [版本 10.0.22621.2361]
(c) Microsoft Corporation. 著作權所有，並保留一切權利。
D:\MyPrograms\VC++\DevCPP>stopWatch 2000000
碼表計時(0--300):      235|
```

鍵入將執行的.exe檔名以及參數，程式即依讀入的參數開始運行

使用 Sleep() 製造較精準的延遲

stopWatch-Sleep.cpp

```
D:\MyPrograms\VC++\DevCPP\stopWatch-Sleep.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project stopWatch.cpp stopWatch-Sleep.cpp stopWatch-stringstream-switch.cpp
1 #include <cstdlib> //for atoi()
2 #include <iostream>
3 #include <windows.h> //for Sleep() 注意S大寫
4
5 using namespace std;
6
7 int main(int argc, char *argv[])
8 {
9     int i, j, elapse = 1000;
10
11     if (argc == 2) elapse = atoi(argv[1]);
12
13     cout << "\n碼表計時(0--300):\n";
14     for (i = 0; i <= 300; i++) {
15         cout << "\r" << i;
16         if (i % 100 == 0) cout << "\a";
17         //for (j = 0; j < elapse; j++);
18         Sleep(elapse); //Sleep(10L);
19     }
20     cout << "\n";
21
22     //system("pause");
23     return 0;
24 }
```

Line: 18 Col: 33 Sel: 0 Lines: 24 Length: 505 Insert Done parsing in 0.031 seconds

使用 stringstream 變數進行字串轉成數值資料

stopWatch-stringstream-switch.cpp

```
D:\MyPrograms\VC++\DevCPP\stopWatch-stringstream-switch.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project stopWatch.cpp stopWatch-Sleep.cpp stopWatch-stringstream-switch.cpp
3 #include <sstream> //for stringstream
4
5 using namespace std;
6
7 int main(int argc, char *argv[])
8 {
9     int i, j, elapse = 1e7;
10    stringstream ss;
11
12    if (argc == 2) {
13        //elapse = atoi(argv[1]);
14        ss << argv[1];
15        ss >> elapse;
16    }
17
18    cout << "碼表計時(0--300):\n";
19    for (i = 0; i <= 300; i++) {
20        cout << "\r" << i;
21        switch (i%4) {
22            case 0:
23                cout << "\t|";
24                break;
25            case 1:
26                cout << "+/";
```

Line: 10 Col: 21 Sel: 0 Lines: 41 Length: 720 Insert Done parsing in 0.031 seconds

使用 argc、argv[] 執行程式的時機

- ▶ 命令提示列直接讀入額外給定的引數，作為組態化參數
- ▶ 搭配批次檔(第二單元末補充素材)，可用於費時的實驗程式
 - ▶ 複雜系統的模擬程式之執行動輒數小時，過程中未知何時須輸入進一步參數值方能往下運算。若能事先設定運算所需之參數，使用者只需啟動程式，一段時間之後再回來收集實驗結果即可，毋須一直被綁在電腦前

```
Run.bat sim-Case-0.bat
1 echo off
2 echo Running simulations ...
3 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
4 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
5 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
6 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
7 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
8 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
9 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
10 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
11 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
12 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
13 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
14 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
15 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
16 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
17 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
18 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
19 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
20 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
21 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
22 load-balancing 5 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N5-L2048.txt
23 echo .
24 load-balancing 10 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N10-L2048.txt
25 load-balancing 10 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N10-L2048.txt
26 load-balancing 10 36000000 0 2048 0.00001 0.0001 0 >> Scenario0-N10-L2048.txt
```

Scenario0-N5-L2048.txt - 記事本

檔案(F)	編輯(E)	格式(O)	檢視(V)	說明(H)			
5	35360063	0.000156864	9533.725	35360063	0.000159441	7386.515	35360063
5	35151977	0.000149912	8777.25	35151977	0.000158095	7102.875	35151977
5	35465006	0.000160328	9287.565	35465006	0.000181392	6585.925	35465006
5	35510031	0.000146332	8996.675	35510031	0.000152003	7330.985	35510031
5	35360063	0.000141808	9219.755	35360063	0.000149136	7528.975	35360063
5	35634702	0.000155024	9350.185	35634702	0.000164081	7138.455	35634702
5	35302727	0.00015839	9320.535	35302727	0.000177076	5947.85	35302727
5	34826457	0.000157761	8294.095	34826457	0.000170787	6250.25	34826457
5	35704404	0.000161113	8929.555	35704404	0.000177097	6773.595	35704404
5	34626289	0.000154791	9380.695	34626289	0.000161524	7318.935	34626289
5	35936489	0.000152141	9188.765	35936489	0.000169048	6573.15	35936489
5	35967166	0.000154407	9671.75	35967166	0.000159465	7833.985	35967166
5	35779181	0.000157677	9154.615	35779181	0.000165793	7193.625	35779181
5	35562858	0.000144437	9526.135	35562858	0.000148588	7349.385	35562858
5	35198756	0.000167463	9054.925	35198756	0.000172413	7524.945	35198756
5	35210159	0.000156029	9199.565	35210159	0.000160521	6783.945	35210159
5	35967166	0.000154524	9401.925	35967166	0.000157889	7501.895	35967166
5	35820567	0.000140433	9391.645	35820567	0.000144439	7856.525	35820567
5	35510031	0.000158512	9017.935	35510031	0.000161639	7120.035	35510031
5	35975670	0.000153334	9332.775	35975670	0.000159304	7659.85	35975670