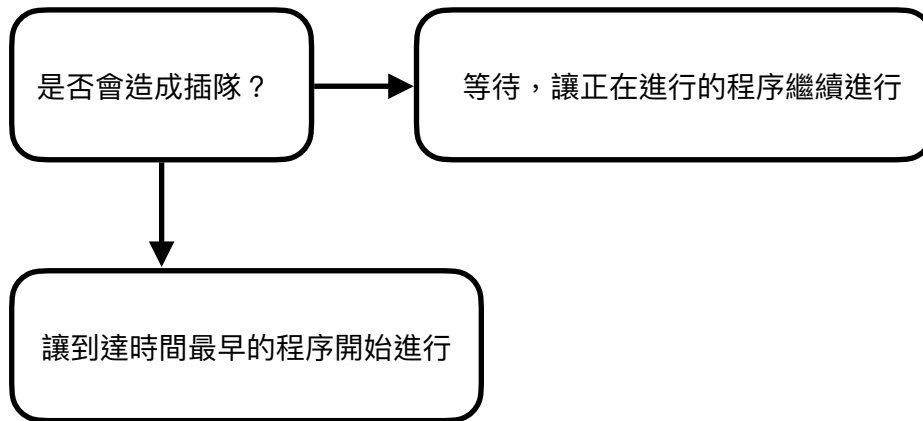


— 設計

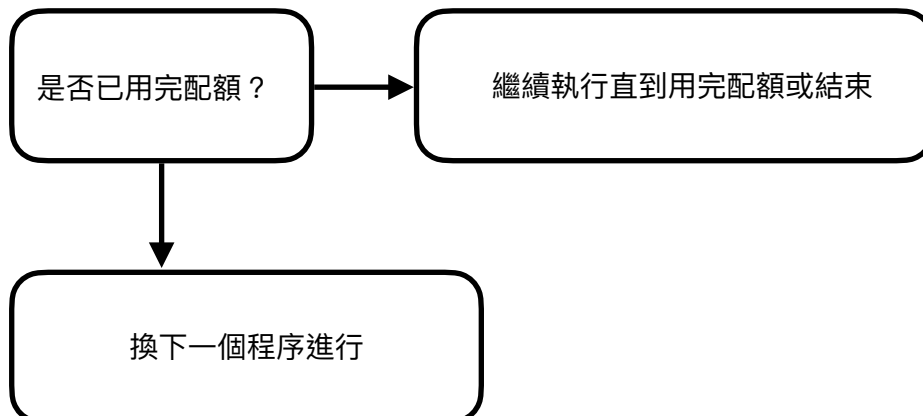
不論何種排程方法，都先將程序依照到達時間排序。

被輪到的程序用sched_setscheduler賦予高優先級（99），其餘則賦予低優先級（1）。

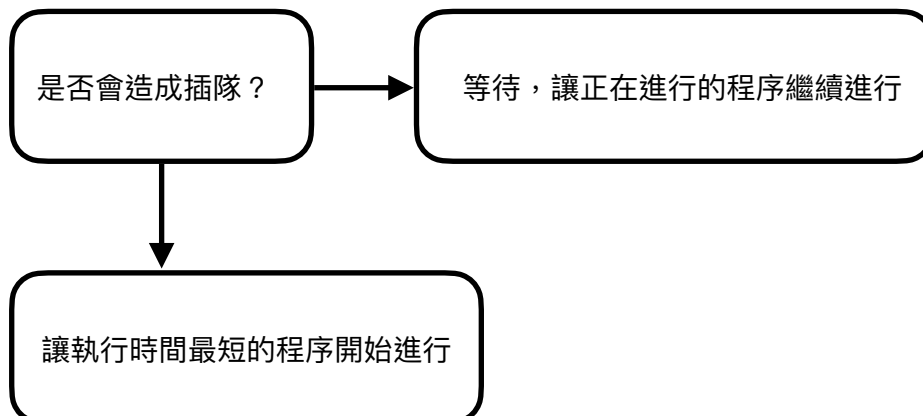
FIFO：



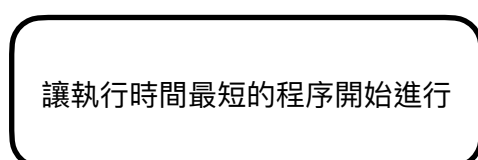
RR：



SJF：



PSJF：



新增的system call：

long long int sys_my_gettime(void)：取得現在的系統時間。

void sys_my_print(char* string)：printk傳入的訊息。

— 核心版本：Ubuntu, with Linux 4.14.25

(執行時需要sudo)

— 差異比較

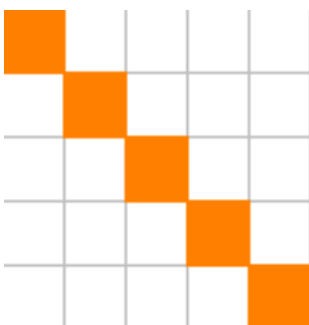
以Demo使用的Input為例。

Time Measurement：Unit time 0.79151286576 秒。

Input	Output
FIFO	P0 2638
10	P1 2639
P0 0 500	P2 2640
P1 1000 500	P3 2641
P2 2000 500	P4 2642
P3 3000 500	P5 2643
P4 4000 500	P6 2644
P5 5000 500	P7 2645
P6 6000 500	P8 2646
P7 7000 500	P9 2647
P8 8000 500	[2034.310357] [Project1] pid: 2638 1588165648.968094650 1588165649.769308027
P9 9000 500	[2035.899475] [Project1] pid: 2639 1588165650.569583823 1588165651.359242230
	[2037.434037] [Project1] pid: 2640 1588165652.104396841 1588165652.894568723
	[2039.019526] [Project1] pid: 2641 1588165653.689779654 1588165654.480853229
	[2040.595005] [Project1] pid: 2642 1588165655.256889232 1588165656.057116069
	[2042.210067] [Project1] pid: 2643 1588165656.824764269 1588165657.672986503
	[2043.808540] [Project1] pid: 2644 1588165658.478807464 1588165659.272260575
	[2045.405771] [Project1] pid: 2645 1588165660.047609976 1588165660.870288295
	[2046.992914] [Project1] pid: 2646 1588165661.660252743 1588165662.458227960
	[2048.540751] [Project1] pid: 2647 1588165663.226806407 1588165664.006839027

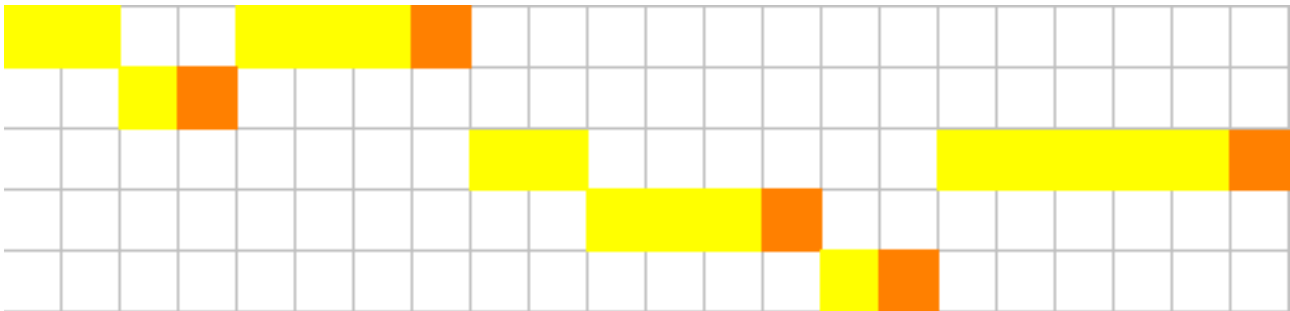
FIFO1：Total error +0.05098941456 secs. (5 unit times)

Input	Output
FIFO	P1 2386
5	P2 2387
P1 0 500	P3 2388
P2 0 500	P4 2389
P3 0 500	P5 2390
P4 0 500	[944.183929] [Project1] pid: 2386 1588164558.263338461 1588164559.097811832
P5 0 500	[944.973064] [Project1] pid: 2387 1588164559.097859940 1588164559.887370132
	[945.780041] [Project1] pid: 2388 1588164559.887388829 1588164560.694752027
	[946.567449] [Project1] pid: 2389 1588164560.694767962 1588164561.482552871
	[947.356394] [Project1] pid: 2390 1588164561.482567479 1588164562.271892196



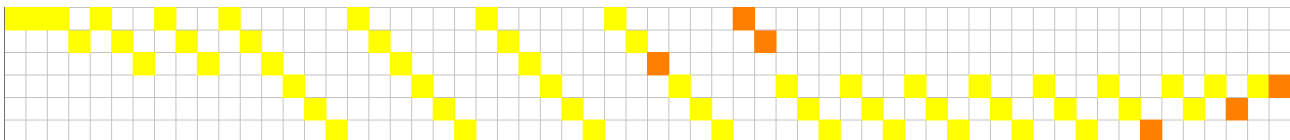
PSJF2 : Total error +0.12727004623 secs. (22 unit times)

Input	Output
PSJF	P1 2474
5	P2 2475
P1 0 3000	P3 2476
P2 1000 1000	P4 2477
P3 2000 4000	P5 2478
P4 5000 2000	[1408.311678] [Project1] pid: 2475 1588165021.918156706 1588165023.457625014
P5 7000 1000	[1411.554459] [Project1] pid: 2474 1588165020.374676515 1588165026.702040866
	[1416.510958] [Project1] pid: 2477 1588165028.385664419 1588165031.661024269
	[1418.102546] [Project1] pid: 2478 1588165031.661120046 1588165033.253413332
	[1422.762027] [Project1] pid: 2476 1588165026.702073628 1588165037.915229466



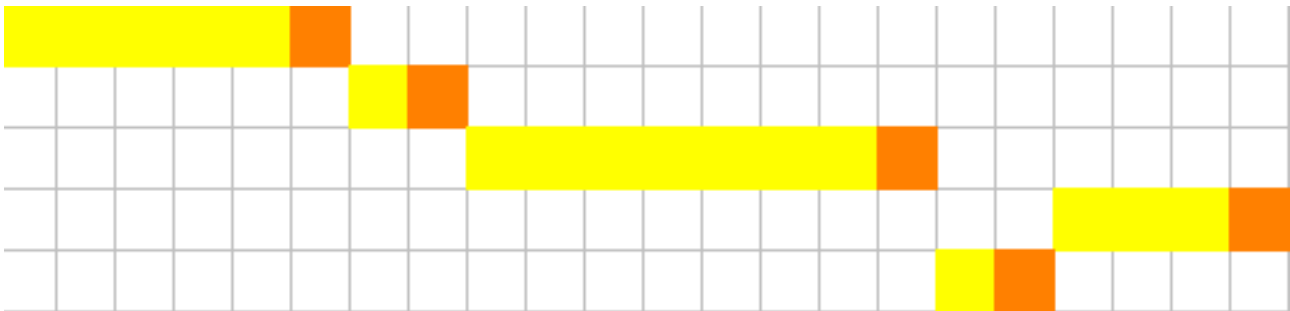
RR3 : Total error -1.23397940028 secs. (60 unit times)

Input	Output
RR	P1 2606
6	P2 2607
P1 1200 5000	P3 2608
P2 2400 4000	P4 2609
P3 3600 3000	P5 2610
P4 4800 7000	P6 2611
P5 5200 6000	[1904.242736] [Project1] pid: 2608 1588165498.425782578 1588165519.636656495
P6 5800 5000	[1905.409469] [Project1] pid: 2606 1588165493.868357890 1588165520.803993736
	[1906.157035] [Project1] pid: 2607 1588165496.121312640 1588165521.551933495
	[1919.669351] [Project1] pid: 2611 1588165503.000777719 1588165535.071005354
	[1922.959688] [Project1] pid: 2610 1588165502.260760219 1588165538.362987886
	[1924.720969] [Project1] pid: 2609 1588165501.533555491 1588165540.125150353



SJF4 : Total error +0.19272023773 secs. (22 unit times)

Input	Output
SJF	P1 2555
5	P2 2556
P1 0 3000	P3 2557
P2 1000 1000	P4 2558
P3 2000 4000	P5 2559
P4 5000 2000	[1697.791948] [Project1] pid: 2555 1588165308.281119638 1588165313.082642311
P5 7000 1000	[1699.405145] [Project1] pid: 2556 1588165313.082676721 1588165314.696668157
	[1705.745106] [Project1] pid: 2557 1588165314.696681578 1588165321.039791140
	[1707.367846] [Project1] pid: 2559 1588165321.039815956 1588165322.663350669
	[1710.590007] [Project1] pid: 2558 1588165322.663363990 1588165325.887122811



可能造成差異的原因：

- Context Switch的成本；
- 在決定下一個程序時的計算成本；
- 每次用迴圈跑出單位時間時的微小差異；
- 電腦上有其他程序造成未被計算到的Context Switch；
- Time measurement也只是參考數值，不一定準確。