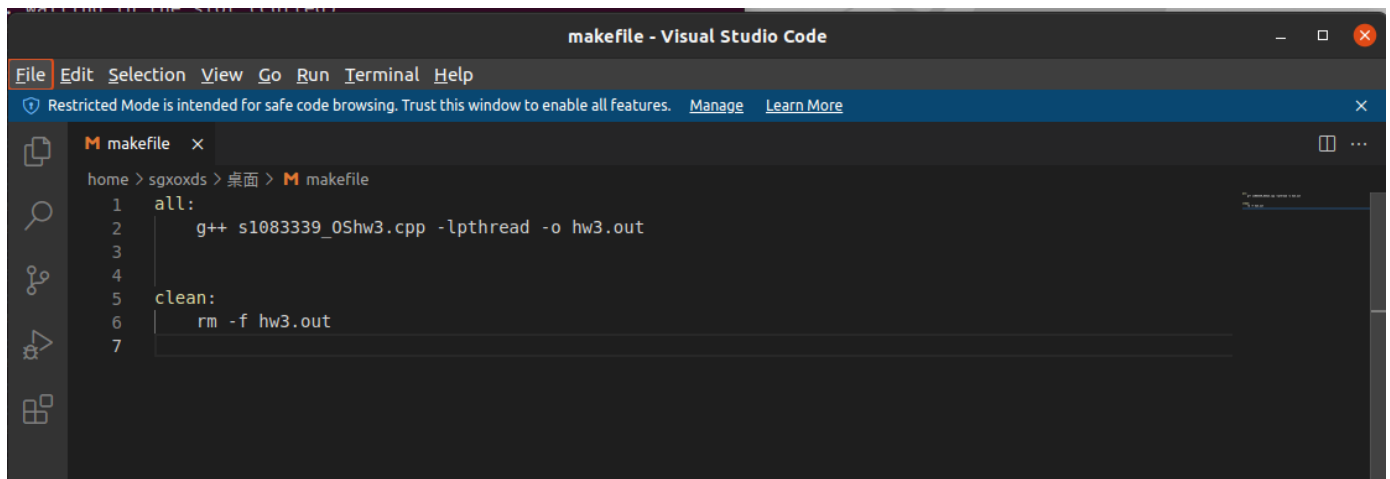


完成的功能列表

1. 使同個程式可以在不同數目的指令參數下皆可運作
2. 從 store 運送豬肉到 slot 或 freezer
3. 從 freezer 運送豬肉到 slot 或回 freezer 冷凍
4. 檢查在 slot 的豬肉是否壞掉 (BONUS 功能)
5. 從 slot 運送豬肉到 cutter 或 packer 加工
6. 豬肉全部處理完成的檢查機制
7. 時間流逝系統
8. 檢查是否還有子程序還在執行
9. 不可搶先的輸出系統
10. 是否達到最大冷凍時間 (BONUS 功能)
11. 可以調整的工廠數目 (BONUS 功能)
12. 用 thread 來模擬 cutter 與 packer
13. 工廠(cutter 與 packer)是否在工作檢查機制
14. 工廠詳細資料的 struct
15. 每塊豬肉資料的 struct
16. Monitor 機制
17. 作業中故事敘述到的諸多功能等

如何編譯我的程式



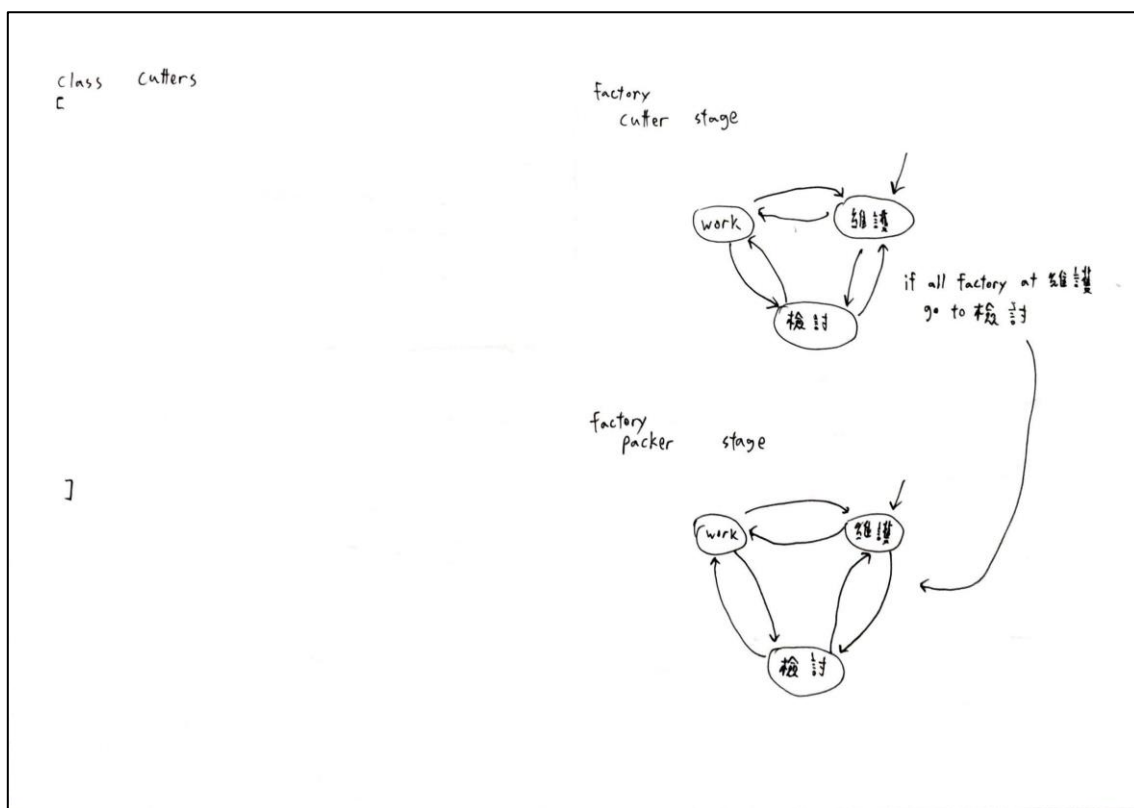
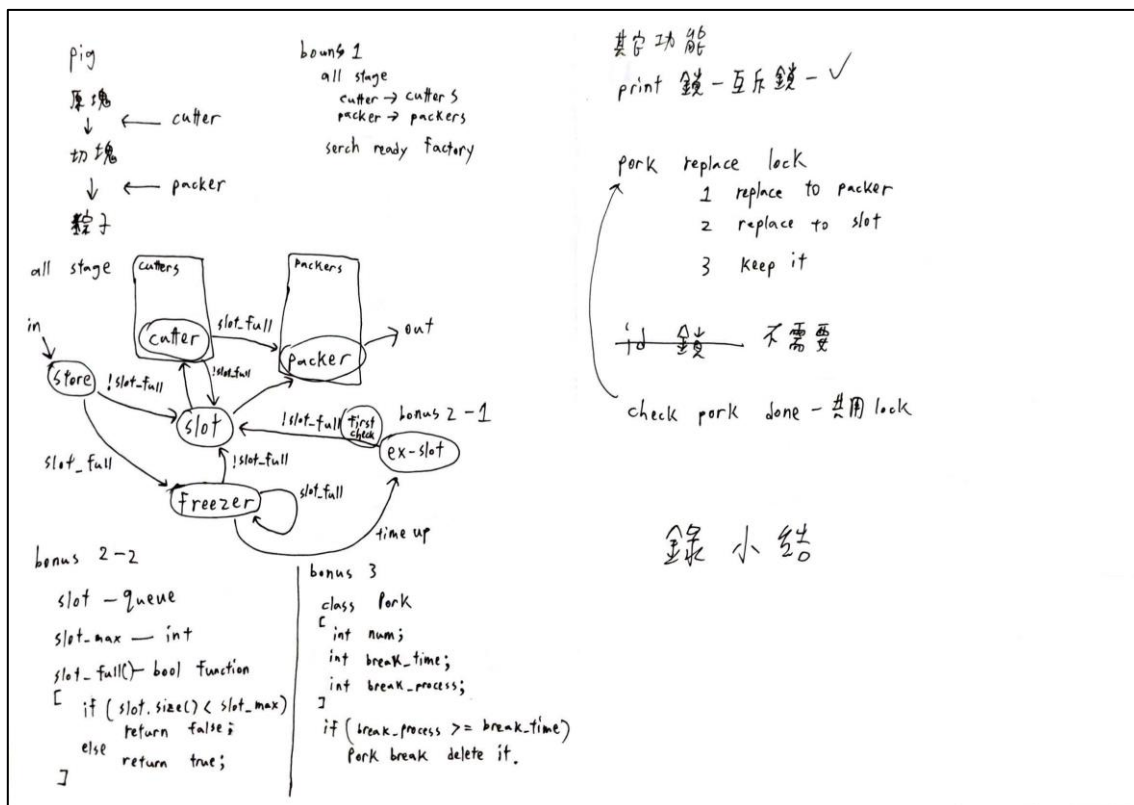
The screenshot shows the Visual Studio Code editor with a file named 'makefile' open. The editor's interface includes a menu bar (File, Edit, Selection, View, Go, Run, Terminal, Help), a status bar at the bottom, and a sidebar on the left with icons for Explorer, Search, Source Control, Run and Debug, and Extensions. The main editor area displays the following Makefile content:

```
home > sgxoxds > 桌面 > M makefile
1 all:
2     g++ s1083339_0Shw3.cpp -lpthread -o hw3.out
3
4
5 clean:
6     rm -f hw3.out
7
```

`g++ s1083339_0Shw3.cpp -lpthread -o hw3.out`

程式是如何運作

設計草圖：



設計技巧：

先找出豬肉的處理流程

再去找出 **cutter** 與 **packer** 的工作流程

然後轉換流程圖為狀態機

定義好每種狀態轉換時的條件與事件 再去寫程式

如何運用 Pthread/ mutex/ semaphore 機制：

透過 **Monitor** 技巧 簡單的設計一個 **class** 去混用 **mutex** 與 **semaphore** 來達成

BONUS 功能

BONUS 1、2、3 我都設計出來了

BONUS 1：

就...把工廠物件化即可

透過 **vector** 去儲存工廠群的資料

再一個一個呼叫

BONUS 2：

在豬肉上新增冷凍時間的標記

在冷凍庫的豬肉的冷凍時間會不斷流逝

達到最大冷凍時間時 強制放到 **slot**

BONUS 3：

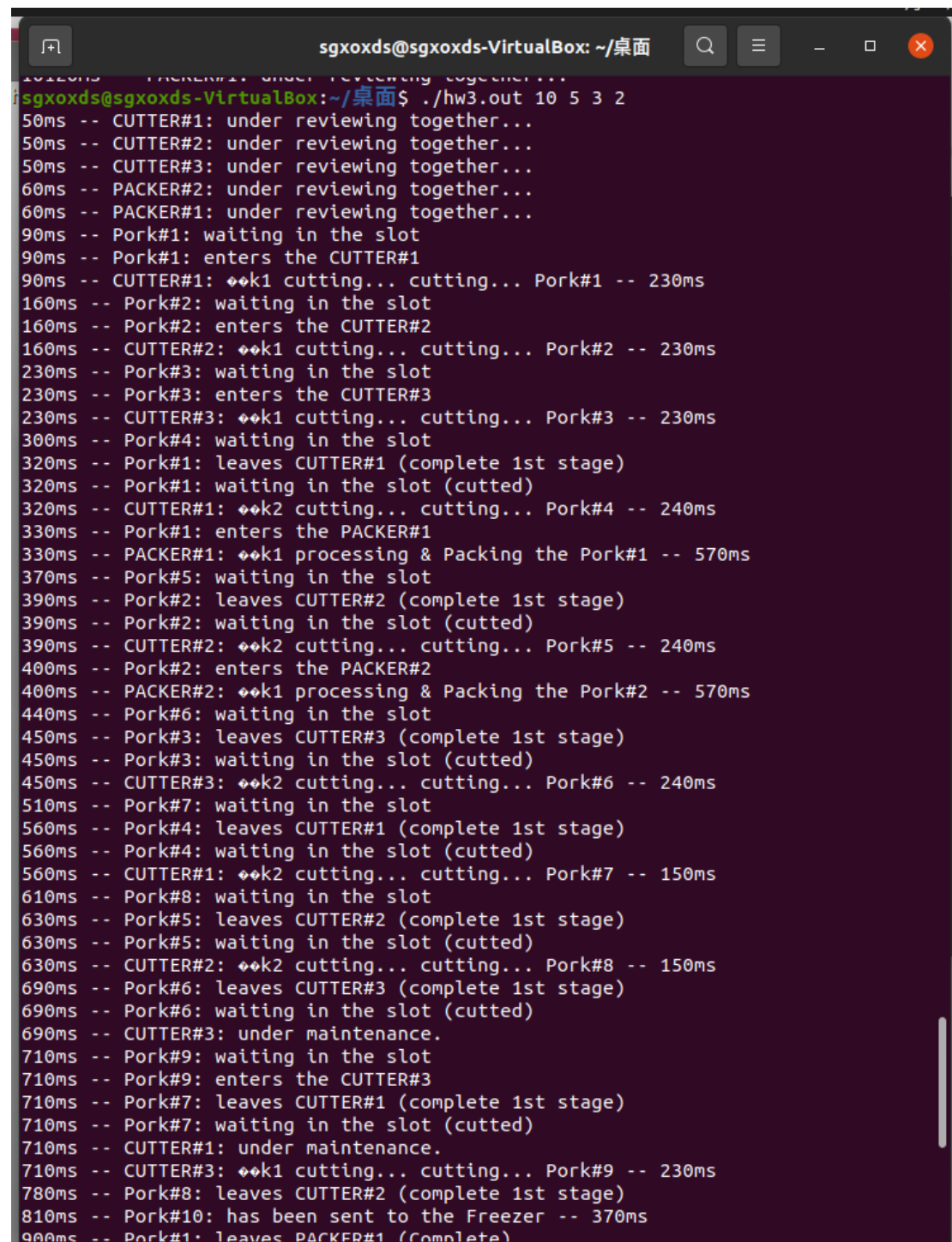
在豬肉上新增壞掉時間的標記

在 **slot** 的豬肉的壞掉時間會不斷流逝

達到最大壞掉時間時 移除該豬肉

測試範例（過程與截圖）：

BONUS 1：



```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
sgxoxds@sgxoxds-VirtualBox:~/桌面$ ./hw3.out 10 5 3 2
50ms -- CUTTER#1: under reviewing together...
50ms -- CUTTER#2: under reviewing together...
50ms -- CUTTER#3: under reviewing together...
60ms -- PACKER#2: under reviewing together...
60ms -- PACKER#1: under reviewing together...
90ms -- Pork#1: waiting in the slot
90ms -- Pork#1: enters the CUTTER#1
90ms -- CUTTER#1: ♠k1 cutting... cutting... Pork#1 -- 230ms
160ms -- Pork#2: waiting in the slot
160ms -- Pork#2: enters the CUTTER#2
160ms -- CUTTER#2: ♠k1 cutting... cutting... Pork#2 -- 230ms
230ms -- Pork#3: waiting in the slot
230ms -- Pork#3: enters the CUTTER#3
230ms -- CUTTER#3: ♠k1 cutting... cutting... Pork#3 -- 230ms
300ms -- Pork#4: waiting in the slot
320ms -- Pork#1: leaves CUTTER#1 (complete 1st stage)
320ms -- Pork#1: waiting in the slot (cutted)
320ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#4 -- 240ms
330ms -- Pork#1: enters the PACKER#1
330ms -- PACKER#1: ♠k1 processing & Packing the Pork#1 -- 570ms
370ms -- Pork#5: waiting in the slot
390ms -- Pork#2: leaves CUTTER#2 (complete 1st stage)
390ms -- Pork#2: waiting in the slot (cutted)
390ms -- CUTTER#2: ♠k2 cutting... cutting... Pork#5 -- 240ms
400ms -- Pork#2: enters the PACKER#2
400ms -- PACKER#2: ♠k1 processing & Packing the Pork#2 -- 570ms
440ms -- Pork#6: waiting in the slot
450ms -- Pork#3: leaves CUTTER#3 (complete 1st stage)
450ms -- Pork#3: waiting in the slot (cutted)
450ms -- CUTTER#3: ♠k2 cutting... cutting... Pork#6 -- 240ms
510ms -- Pork#7: waiting in the slot
560ms -- Pork#4: leaves CUTTER#1 (complete 1st stage)
560ms -- Pork#4: waiting in the slot (cutted)
560ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#7 -- 150ms
610ms -- Pork#8: waiting in the slot
630ms -- Pork#5: leaves CUTTER#2 (complete 1st stage)
630ms -- Pork#5: waiting in the slot (cutted)
630ms -- CUTTER#2: ♠k2 cutting... cutting... Pork#8 -- 150ms
690ms -- Pork#6: leaves CUTTER#3 (complete 1st stage)
690ms -- Pork#6: waiting in the slot (cutted)
690ms -- CUTTER#3: under maintenance.
710ms -- Pork#9: waiting in the slot
710ms -- Pork#9: enters the CUTTER#3
710ms -- Pork#7: leaves CUTTER#1 (complete 1st stage)
710ms -- Pork#7: waiting in the slot (cutted)
710ms -- CUTTER#1: under maintenance.
710ms -- CUTTER#3: ♠k1 cutting... cutting... Pork#9 -- 230ms
780ms -- Pork#8: leaves CUTTER#2 (complete 1st stage)
810ms -- Pork#10: has been sent to the Freezer -- 370ms
900ms -- Pork#1: leaves PACKER#1 (complete)
```

```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
560ms -- Pork#4: waiting in the slot (cutted)
560ms -- CUTTER#1: ♦♦k2 cutting... cutting... Pork#7 -- 150ms
610ms -- Pork#8: waiting in the slot
630ms -- Pork#5: leaves CUTTER#2 (complete 1st stage)
630ms -- Pork#5: waiting in the slot (cutted)
630ms -- CUTTER#2: ♦♦k2 cutting... cutting... Pork#8 -- 150ms
690ms -- Pork#6: leaves CUTTER#3 (complete 1st stage)
690ms -- Pork#6: waiting in the slot (cutted)
690ms -- CUTTER#3: under maintenance.
710ms -- Pork#9: waiting in the slot
710ms -- Pork#9: enters the CUTTER#3
710ms -- Pork#7: leaves CUTTER#1 (complete 1st stage)
710ms -- Pork#7: waiting in the slot (cutted)
710ms -- CUTTER#1: under maintenance.
710ms -- CUTTER#3: ♦♦k1 cutting... cutting... Pork#9 -- 230ms
780ms -- Pork#8: leaves CUTTER#2 (complete 1st stage)
810ms -- Pork#10: has been sent to the Freezer -- 370ms
900ms -- Pork#1: leaves PACKER#1 (Complete)
900ms -- PACKER#1: ♦♦k2 processing & Packing the Pork#3 -- 910ms
900ms -- Pork#8: waiting in the slot (cutted)
900ms -- CUTTER#2: under maintenance.
940ms -- Pork#9: leaves CUTTER#3 (complete 1st stage)
970ms -- Pork#2: leaves PACKER#2 (Complete)
970ms -- PACKER#2: ♦♦k2 processing & Packing the Pork#4 -- 830ms
980ms -- Pork#9: waiting in the slot (cutted)
980ms -- CUTTER#3: under maintenance.
1180ms -- Pork#10: has been sent to the Freezer -- 500ms
1680ms -- Pork#10: has been sent to the Freezer -- 350ms
1800ms -- Pork#4: leaves PACKER#2 (Complete)
1800ms -- PACKER#2: ♦♦k2 processing & Packing the Pork#5 -- 750ms
1810ms -- Pork#3: leaves PACKER#1 (Complete)
1810ms -- PACKER#1: ♦♦k2 processing & Packing the Pork#6 -- 880ms
2030ms -- Pork#10: waiting in the slot
2030ms -- Pork#10: enters the CUTTER#1
2030ms -- CUTTER#1: ♦♦k1 cutting... cutting... Pork#10 -- 230ms
2260ms -- Pork#10: leaves CUTTER#1 (complete 1st stage)
2260ms -- Pork#10: waiting in the slot (cutted)
2260ms -- CUTTER#1: under maintenance.
2550ms -- Pork#5: leaves PACKER#2 (Complete)
2550ms -- PACKER#2: ♦♦k2 processing & Packing the Pork#7 -- 630ms
2690ms -- Pork#6: leaves PACKER#1 (Complete)
2690ms -- PACKER#1: ♦♦k2 processing & Packing the Pork#8 -- 880ms
3180ms -- Pork#7: leaves PACKER#2 (Complete)
3180ms -- PACKER#2: ♦♦k2 processing & Packing the Pork#9 -- 910ms
3570ms -- Pork#8: leaves PACKER#1 (Complete)
3570ms -- PACKER#1: ♦♦k2 processing & Packing the Pork#10 -- 830ms
4090ms -- Pork#9: leaves PACKER#2 (Complete)
4090ms -- PACKER#2: under maintenance.
4400ms -- Pork#10: leaves PACKER#1 (Complete)
4410ms -- PACKER#1: under reviewing together...
sgxoxds@sgxoxds-VirtualBox:~/桌面$
```

BONUS 2、3：

```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
sgxoxds@sgxoxds-VirtualBox:~/桌面$ ./hw3.out 20 2
50ms -- CUTTER#1: under reviewing together...
60ms -- PACKER#1: under reviewing together...
90ms -- Pork#1: waiting in the slot
90ms -- Pork#1: enters the CUTTER#1
100ms -- CUTTER#1: ♦♦k1 cutting... cutting... Pork#1 -- 230ms
160ms -- Pork#2: waiting in the slot
230ms -- Pork#3: waiting in the slot
280ms -- Pork#4: has been sent to the Freezer -- 500ms
340ms -- Pork#1: leaves CUTTER#1 (complete 1st stage)
340ms -- Pork#1: : enters to the factory (PACKER#1)
340ms -- CUTTER#1: ♦♦k2 cutting... cutting... Pork#2 -- 260ms
340ms -- PACKER#1: ♦♦k1 processing & Packing the Pork#1 -- 570ms
380ms -- Pork#5: waiting in the slot
450ms -- Pork#6: has been sent to the Freezer -- 440ms
500ms -- Pork#7: has been sent to the Freezer -- 500ms
600ms -- Pork#8: has been sent to the Freezer -- 460ms
600ms -- Pork#2: leaves CUTTER#1 (complete 1st stage)
700ms -- Pork#9: has been sent to the Freezer -- 350ms
780ms -- Pork#4: has been sent to the Freezer -- 380ms
800ms -- Pork#10: has been sent to the Freezer -- 390ms
880ms -- Pork#11: has been sent to the Freezer -- 410ms
890ms -- Pork#6: has been sent to the Freezer -- 480ms
910ms -- Pork#1: leaves PACKER#1 (Complete)
910ms -- PACKER#1: under maintenance.
910ms -- Pork#2: : enters to the factory (PACKER#1)
910ms -- CUTTER#1: ♦♦k2 cutting... cutting... Pork#3 -- 170ms
910ms -- PACKER#1: ♦♦k1 processing & Packing the Pork#2 -- 570ms
940ms -- Pork#12: waiting in the slot
1000ms -- Pork#7: has been sent to the Freezer -- 440ms
1010ms -- Pork#13: has been sent to the Freezer -- 300ms
1050ms -- Pork#9: has been sent to the Freezer -- 350ms
1060ms -- Pork#8: has been sent to the Freezer -- 460ms
1080ms -- Pork#3: leaves CUTTER#1 (complete 1st stage)
1110ms -- Pork#14: has been sent to the Freezer -- 350ms
1160ms -- Pork#4: has been sent to the Freezer -- 410ms
1190ms -- Pork#10: has been sent to the Freezer -- 380ms
1210ms -- Pork#15: has been sent to the Freezer -- 390ms
1290ms -- Pork#16: has been sent to the Freezer -- 410ms
1290ms -- Pork#11: has been sent to the Freezer -- 480ms
1310ms -- Pork#13: has been sent to the Freezer -- 370ms
1350ms -- Pork#17: has been sent to the Freezer -- 320ms
1370ms -- Pork#6: has been sent to the Freezer -- 390ms
1400ms -- Pork#18: has been sent to the Freezer -- 400ms
1400ms -- Pork#9: has been sent to the Freezer -- 430ms
1440ms -- Pork#7: has been sent to the Freezer -- 370ms
1460ms -- Pork#19: has been sent to the Freezer -- 440ms
1460ms -- Pork#14: has been sent to the Freezer -- 370ms
1480ms -- Pork#2: leaves PACKER#1 (Complete)
1480ms -- PACKER#1: under maintenance.
1480ms -- Pork#3: : enters to the factory (PACKER#1)
```



```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
1480ms -- Pork#2: leaves PACKER#1 (Complete)
1480ms -- PACKER#1: under maintenance.
1480ms -- Pork#3: : enters to the factory (PACKER#1)
1480ms -- CUTTER#1: ♦♦k2 cutting... cutting... Pork#5 -- 200ms
1480ms -- PACKER#1: ♦♦k1 processing & Packing the Pork#3 -- 570ms
1520ms -- Pork#8: waiting in the slot
1550ms -- Pork#20: has been sent to the Freezer -- 370ms
1570ms -- Pork#4: has been sent to the Freezer -- 440ms
1570ms -- Pork#10: has been sent to the Freezer -- 300ms
1600ms -- Pork#15: has been sent to the Freezer -- 500ms
1670ms -- Pork#17: has been sent to the Freezer -- 350ms
1680ms -- Pork#13: has been sent to the Freezer -- 460ms
1680ms -- Pork#5: leaves CUTTER#1 (complete 1st stage)
1700ms -- Pork#16: has been sent to the Freezer -- 350ms
1760ms -- Pork#6: has been sent to the Freezer -- 350ms
1770ms -- Pork#11: has been sent to the Freezer -- 410ms
1800ms -- Pork#18: has been sent to the Freezer -- 380ms
1810ms -- Pork#7: has been sent to the Freezer -- 390ms
1830ms -- Pork#9: has been sent to the Freezer -- 420ms
1830ms -- Pork#14: has been sent to the Freezer -- 410ms
1870ms -- Pork#10: has been sent to the Freezer -- 370ms
1900ms -- Pork#19: has been sent to the Freezer -- 480ms
1920ms -- Pork#20: has been sent to the Freezer -- 370ms
2010ms -- Pork#4: has been sent to the Freezer -- 320ms
2020ms -- Pork#17: has been sent to the Freezer -- 330ms
2050ms -- Pork#16: has been sent to the Freezer -- 390ms
2050ms -- Pork#3: leaves PACKER#1 (Complete)
2060ms -- PACKER#1: under maintenance.
2060ms -- Pork#5: : enters to the factory (PACKER#1)
2060ms -- CUTTER#1: ♦♦k2 cutting... cutting... Pork#12 -- 200ms
2060ms -- PACKER#1: ♦♦k1 processing & Packing the Pork#5 -- 570ms
2100ms -- Pork#15: waiting in the slot
2110ms -- Pork#6: has been sent to the Freezer -- 370ms
2140ms -- Pork#13: has been sent to the Freezer -- 350ms
2180ms -- Pork#11: has been sent to the Freezer -- 440ms
2180ms -- Pork#18: has been sent to the Freezer -- 300ms
2200ms -- Pork#7: has been sent to the Freezer -- 500ms
2240ms -- Pork#14: has been sent to the Freezer -- 350ms
2240ms -- Pork#10: has been sent to the Freezer -- 460ms
2250ms -- Pork#9: has been sent to the Freezer -- 350ms
2260ms -- Pork#12: leaves CUTTER#1 (complete 1st stage)
2290ms -- Pork#20: has been sent to the Freezer -- 350ms
2330ms -- Pork#4: has been sent to the Freezer -- 410ms
2350ms -- Pork#17: has been sent to the Freezer -- 380ms
2380ms -- Pork#19: has been sent to the Freezer -- 390ms
2440ms -- Pork#16: has been sent to the Freezer -- 420ms
2480ms -- Pork#6: has been sent to the Freezer -- 410ms
2480ms -- Pork#18: has been sent to the Freezer -- 370ms
2490ms -- Pork#13: has been sent to the Freezer -- 480ms
2590ms -- Pork#14: has been sent to the Freezer -- 370ms
2600ms -- Pork#9: has been sent to the Freezer -- 320ms
```

```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
2490ms -- Pork#13: has been sent to the Freezer -- 480ms
2590ms -- Pork#14: has been sent to the Freezer -- 370ms
2600ms -- Pork#9: has been sent to the Freezer -- 320ms
2620ms -- Pork#11: has been sent to the Freezer -- 330ms
2630ms -- Pork#5: leaves PACKER#1 (Complete)
2630ms -- PACKER#1: under maintenance.
2630ms -- Pork#12: : enters to the factory (PACKER#1)
2630ms -- CUTTER#1: ♣♣k2 cutting... cutting... Pork#8 -- 190ms
2630ms -- PACKER#1: ♣♣k1 processing & Packing the Pork#12 -- 570ms
2640ms -- Pork#20: waiting in the slot
2700ms -- Pork#7: has been sent to the Freezer -- 370ms
2700ms -- Pork#10: has been sent to the Freezer -- 350ms
2730ms -- Pork#17: has been sent to the Freezer -- 440ms
2740ms -- Pork#4: has been sent to the Freezer -- 300ms
2770ms -- Pork#19: has been sent to the Freezer -- 500ms
2820ms -- Pork#8: leaves CUTTER#1 (complete 1st stage)
2850ms -- Pork#18: has been sent to the Freezer -- 350ms
2860ms -- Pork#16: has been sent to the Freezer -- 460ms
2890ms -- Pork#6: has been sent to the Freezer -- 350ms
2920ms -- Pork#9: has been sent to the Freezer -- 350ms
2950ms -- Pork#11: has been sent to the Freezer -- 410ms
2960ms -- Pork#14: has been sent to the Freezer -- 380ms
2970ms -- Pork#13: has been sent to the Freezer -- 390ms
3040ms -- Pork#4: has been sent to the Freezer -- 420ms
3050ms -- Pork#10: has been sent to the Freezer -- 410ms
3070ms -- Pork#7: has been sent to the Freezer -- 370ms
3170ms -- Pork#17: has been sent to the Freezer -- 480ms
3200ms -- Pork#18: has been sent to the Freezer -- 370ms
3210ms -- Pork#12: leaves PACKER#1 (Complete)
3210ms -- PACKER#1: under maintenance.
3210ms -- Pork#8: : enters to the factory (PACKER#1)
3210ms -- CUTTER#1: ♣♣k2 cutting... cutting... Pork#15 -- 120ms
3210ms -- PACKER#1: ♣♣k1 processing & Packing the Pork#8 -- 570ms
3240ms -- Pork#6: waiting in the slot
3270ms -- Pork#19: has been sent to the Freezer -- 370ms
3270ms -- Pork#9: has been sent to the Freezer -- 350ms
3320ms -- Pork#16: has been sent to the Freezer -- 440ms
3320ms -- Pork#15: leaves CUTTER#1 (complete 1st stage)
3340ms -- Pork#14: has been sent to the Freezer -- 300ms
3360ms -- Pork#11: has been sent to the Freezer -- 500ms
3360ms -- Pork#13: has been sent to the Freezer -- 350ms
3440ms -- Pork#7: has been sent to the Freezer -- 460ms
3460ms -- Pork#4: has been sent to the Freezer -- 350ms
3460ms -- Pork#10: has been sent to the Freezer -- 350ms
3570ms -- Pork#18: has been sent to the Freezer -- 410ms
3620ms -- Pork#9: has been sent to the Freezer -- 380ms
3640ms -- Pork#19: has been sent to the Freezer -- 390ms
3640ms -- Pork#14: has been sent to the Freezer -- 420ms
3650ms -- Pork#17: has been sent to the Freezer -- 410ms
3710ms -- Pork#13: has been sent to the Freezer -- 370ms
3760ms -- Pork#16: has been sent to the Freezer -- 480ms
```



```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
3710ms -- Pork#13: has been sent to the Freezer -- 370ms
3760ms -- Pork#16: has been sent to the Freezer -- 480ms
3770ms -- Pork#8: leaves PACKER#1 (Complete)
3770ms -- PACKER#1: under maintenance.
3770ms -- Pork#15: : enters to the factory (PACKER#1)
3770ms -- CUTTER#1: ♣♣k2 cutting... cutting... Pork#20 -- 170ms
3770ms -- PACKER#1: ♣♣k1 processing & Packing the Pork#15 -- 570ms
3810ms -- Pork#4: waiting in the slot
3810ms -- Pork#10: has been sent to the Freezer -- 370ms
3860ms -- Pork#11: has been sent to the Freezer -- 350ms
3900ms -- Pork#7: has been sent to the Freezer -- 440ms
3940ms -- Pork#20: leaves CUTTER#1 (complete 1st stage)
3980ms -- Pork#18: has been sent to the Freezer -- 300ms
4000ms -- Pork#9: has been sent to the Freezer -- 500ms
4030ms -- Pork#19: has been sent to the Freezer -- 350ms
4060ms -- Pork#14: has been sent to the Freezer -- 460ms
4060ms -- Pork#17: has been sent to the Freezer -- 350ms
4080ms -- Pork#13: has been sent to the Freezer -- 350ms
4180ms -- Pork#10: has been sent to the Freezer -- 410ms
4210ms -- Pork#11: has been sent to the Freezer -- 380ms
4240ms -- Pork#16: has been sent to the Freezer -- 390ms
4280ms -- Pork#18: has been sent to the Freezer -- 420ms
4340ms -- Pork#7: has been sent to the Freezer -- 410ms
4340ms -- Pork#15: leaves PACKER#1 (Complete)
4350ms -- PACKER#1: under maintenance.
4350ms -- Pork#20: : enters to the factory (PACKER#1)
4350ms -- CUTTER#1: ♣♣k2 cutting... cutting... Pork#6 -- 170ms
4350ms -- PACKER#1: ♣♣k1 processing & Packing the Pork#20 -- 570ms
4380ms -- Pork#19: waiting in the slot
4410ms -- Pork#17: has been sent to the Freezer -- 370ms
4430ms -- Pork#13: has been sent to the Freezer -- 350ms
4500ms -- Pork#9: has been sent to the Freezer -- 440ms
4520ms -- Pork#14: has been sent to the Freezer -- 300ms
4520ms -- Pork#6: leaves CUTTER#1 (complete 1st stage)
4590ms -- Pork#10: has been sent to the Freezer -- 500ms
4590ms -- Pork#11: has been sent to the Freezer -- 350ms
4630ms -- Pork#16: has been sent to the Freezer -- 460ms
4700ms -- Pork#18: has been sent to the Freezer -- 350ms
4750ms -- Pork#7: has been sent to the Freezer -- 350ms
4780ms -- Pork#17: has been sent to the Freezer -- 410ms
4780ms -- Pork#13: has been sent to the Freezer -- 380ms
4820ms -- Pork#14: has been sent to the Freezer -- 390ms
4930ms -- Pork#20: leaves PACKER#1 (Complete)
4930ms -- PACKER#1: under maintenance.
4930ms -- Pork#6: : enters to the factory (PACKER#1)
4930ms -- CUTTER#1: ♣♣k2 cutting... cutting... Pork#4 -- 220ms
4930ms -- PACKER#1: ♣♣k1 processing & Packing the Pork#6 -- 570ms
4940ms -- Pork#9: waiting in the slot
4940ms -- Pork#11: has been sent to the Freezer -- 370ms
5050ms -- Pork#18: has been sent to the Freezer -- 350ms
5090ms -- Pork#10: has been sent to the Freezer -- 440ms
```

```
sgxoxds@sgxoxds-VirtualBox: ~/桌面
4930ms -- PACKER#1: 🍖k1 processing & Packing the Pork#6 -- 570ms
4940ms -- Pork#9: waiting in the slot
4940ms -- Pork#11: has been sent to the Freezer -- 370ms
5050ms -- Pork#18: has been sent to the Freezer -- 350ms
5090ms -- Pork#10: has been sent to the Freezer -- 440ms
5090ms -- Pork#16: has been sent to the Freezer -- 300ms
5100ms -- Pork#7: has been sent to the Freezer -- 500ms
5140ms -- Pork#4: leaves CUTTER#1 (complete 1st stage)
5160ms -- Pork#13: has been sent to the Freezer -- 350ms
5190ms -- Pork#17: has been sent to the Freezer -- 460ms
5210ms -- Pork#14: has been sent to the Freezer -- 350ms
5310ms -- Pork#11: has been sent to the Freezer -- 350ms
5390ms -- Pork#16: has been sent to the Freezer -- 410ms
5400ms -- Pork#18: has been sent to the Freezer -- 380ms
5490ms -- Pork#6: leaves PACKER#1 (Complete)
5490ms -- PACKER#1: under maintenance.
5490ms -- Pork#4: : enters to the factory (PACKER#1)
5490ms -- CUTTER#1: 🍖k2 cutting... cutting... Pork#19 -- 190ms
5490ms -- PACKER#1: 🍖k1 processing & Packing the Pork#4 -- 570ms
5510ms -- Pork#13: waiting in the slot
5530ms -- Pork#10: has been sent to the Freezer -- 370ms
5560ms -- Pork#14: has been sent to the Freezer -- 350ms
5600ms -- Pork#7: waiting in the slot(freezer time up)
5650ms -- Pork#17: has been sent to the Freezer -- 440ms
5660ms -- Pork#11: has been sent to the Freezer -- 300ms
5680ms -- Pork#19: leaves CUTTER#1 (complete 1st stage)
5780ms -- Pork#18: has been sent to the Freezer -- 500ms
5800ms -- Pork#16: has been sent to the Freezer -- 350ms
5900ms -- Pork#10: waiting in the slot(freezer time up)
5910ms -- Pork#14: has been sent to the Freezer -- 460ms
5960ms -- Pork#11: waiting in the slot(freezer time up)
6060ms -- Pork#4: leaves PACKER#1 (Complete)
6060ms -- PACKER#1: under maintenance.
6060ms -- Pork#19: : enters to the factory (PACKER#1)
6060ms -- CUTTER#1: 🍖k2 cutting... cutting... Pork#9 -- 150ms
6060ms -- PACKER#1: 🍖k1 processing & Packing the Pork#19 -- 570ms
6090ms -- Pork#17: has been sent to the Freezer -- 370ms
6150ms -- Pork#16: has been sent to the Freezer -- 350ms
6210ms -- Pork#9: leaves CUTTER#1 (complete 1st stage)
6280ms -- Pork#18: has been sent to the Freezer -- 440ms
6370ms -- Pork#14: waiting in the slot(freezer time up)
6460ms -- Pork#17: waiting in the slot(freezer time up)
6500ms -- Pork#16: waiting in the slot(freezer time up)
6630ms -- Pork#19: leaves PACKER#1 (Complete)
6630ms -- PACKER#1: under maintenance.
6630ms -- Pork#9: : enters to the factory (PACKER#1)
6630ms -- CUTTER#1: 🍖k2 cutting... cutting... Pork#13 -- 100ms
6630ms -- PACKER#1: 🍖k1 processing & Packing the Pork#9 -- 570ms
6720ms -- Pork#18: waiting in the slot(freezer time up)
6740ms -- Pork#13: leaves CUTTER#1 (complete 1st stage)
7200ms -- Pork#9: leaves PACKER#1 (Complete)
-----
```

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sgxoxds@sgxoxds-VirtualBox: ~/桌面
6060ms -- Pork#19: : enters to the factory (PACKER#1)
6060ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#9 -- 150ms
6060ms -- PACKER#1: ♠k1 processing & Packing the Pork#19 -- 570ms
6090ms -- Pork#17: has been sent to the Freezer -- 370ms
6150ms -- Pork#16: has been sent to the Freezer -- 350ms
6210ms -- Pork#9: leaves CUTTER#1 (complete 1st stage)
6280ms -- Pork#18: has been sent to the Freezer -- 440ms
6370ms -- Pork#14: waiting in the slot(freezer time up)
6460ms -- Pork#17: waiting in the slot(freezer time up)
6500ms -- Pork#16: waiting in the slot(freezer time up)
6630ms -- Pork#19: leaves PACKER#1 (Complete)
6630ms -- PACKER#1: under maintenance.
6630ms -- Pork#9: : enters to the factory (PACKER#1)
6630ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#13 -- 100ms
6630ms -- PACKER#1: ♠k1 processing & Packing the Pork#9 -- 570ms
6720ms -- Pork#18: waiting in the slot(freezer time up)
6740ms -- Pork#13: leaves CUTTER#1 (complete 1st stage)
7200ms -- Pork#9: leaves PACKER#1 (Complete)
7200ms -- PACKER#1: under maintenance.
7200ms -- Pork#13: : enters to the factory (PACKER#1)
7200ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#7 -- 170ms
7200ms -- PACKER#1: ♠k1 processing & Packing the Pork#13 -- 570ms
7370ms -- Pork#7: leaves CUTTER#1 (complete 1st stage)
7770ms -- Pork#13: leaves PACKER#1 (Complete)
7770ms -- PACKER#1: under maintenance.
7770ms -- Pork#7: : enters to the factory (PACKER#1)
7770ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#10 -- 170ms
7770ms -- PACKER#1: ♠k1 processing & Packing the Pork#7 -- 570ms
7940ms -- Pork#10: leaves CUTTER#1 (complete 1st stage)
8340ms -- Pork#7: leaves PACKER#1 (Complete)
8340ms -- PACKER#1: under maintenance.
8340ms -- Pork#10: : enters to the factory (PACKER#1)
8340ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#11 -- 170ms
8340ms -- PACKER#1: ♠k1 processing & Packing the Pork#10 -- 570ms
8460ms -- Pork#17: spoiled(♠a♠♠)
8510ms -- Pork#11: leaves CUTTER#1 (complete 1st stage)
8700ms -- Pork#16: spoiled(♠a♠♠)
8910ms -- Pork#10: leaves PACKER#1 (Complete)
8910ms -- PACKER#1: under maintenance.
8910ms -- Pork#11: : enters to the factory (PACKER#1)
8910ms -- CUTTER#1: ♠k2 cutting... cutting... Pork#18 -- 170ms
8910ms -- PACKER#1: ♠k1 processing & Packing the Pork#11 -- 570ms
8970ms -- Pork#14: spoiled(♠a♠♠)
9080ms -- Pork#18: leaves CUTTER#1 (complete 1st stage)
9080ms -- Pork#18: waiting in the slot (cutted)
9080ms -- CUTTER#1: under maintenance.
9480ms -- Pork#11: leaves PACKER#1 (Complete)
9480ms -- PACKER#1: ♠k2 processing & Packing the Pork#18 -- 630ms
10110ms -- Pork#18: leaves PACKER#1 (Complete)
10120ms -- PACKER#1: under reviewing together...
sgxoxds@sgxoxds-VirtualBox:~/桌面$
```