

Implementation detailed:

Movement: 一開始沒有想那麼多，就直接把整個地圖刻在 `handleMovement` 裡面，後來寫 `record` 的時候才想到可以把前後左右是 `null` 讓他 = -1 這個方式。若遇到怪物時選擇撤退，我會把他 `changeRoom` 到 `previous room`。

Showing status: 利用 `player` 的 `triggerEvent` 來達成，會 `cout` 出 `name`, `currentHealth`, `attack`, `defense` 還有 `current room index`。

Pick up items: 利用 `item` 的 `triggerEvent` 來達成，詢問 `player` 是否想要這個東西，確定玩家要裝備以後會 `cout` `item` 的技能(+health, +-attack, +-defense)，並使用 `addItem()`, `increaseStatus()` 兩個函式。

Combat system: 不管玩家是否願意，只要房間有 `monster` 就會跳到 `monster` 的 `triggerEvent`。玩家可選擇攻擊或者是撤退。決鬥方式：玩家先攻擊，再檢查怪獸是否死亡，若存活則換成怪獸攻擊玩家，檢查玩家是否死亡。將過程跑入迴圈，玩家死亡會印出 `GAMEOVER`，最終 `BOSS` 怪獸死亡會印出遊戲勝利。

NPC: 利用 `NPC` 的 `triggerEvent`，我的設定是遊戲中會有一個騙人的 `NPC` 和一個好的 `NPC`，若你選擇要相信該 `NPC`，就必須添加所有 `NPC` 擁有的道具(有可能會扣血或攻擊)。原本想要做成騙人的 `NPC` 會拿走你擁有的所有道具，但我在寫 `record` 的時候就發現這個想法太複雜了，沒有時間達成，趕完 `deadline` 以後有機會還是想要嘗試看看。

Game logic (win / lose): `checkGameLogic` 就是檢查玩家的血量，若小於零則 `return false`。有兩個地方會檢查 `game logic`，分別是 `run dungeon` 裡的迴圈以及 `monster` 的 `triggerevent` 之後。

Record System: 這個真的好難我大半的時間都在寫他。首先我先將 `player` 的資訊一次一行的存進“`p_record.txt`”這個檔案，再來是 `room` 的資訊，我用了三個迴圈才終於把 `npc` 的道具表也存進去(“`r_record.txt`”)。接著，我再一次一行的把她 `load` 回去，並且 `new` 了新的 `room`、`Item`、`monster`....之類的，等於是從頭刻了一個玩家和地圖。這個過程最困難的是存取玩家的 `current room` 和 `previous room`，和同學討論過後才發現可以先 `load rooms` 之後再把 `current`, `previous room` 的 `index` 值存回去 `rooms`，真的好厲害我自己一個人一定想不到。

Inheritance / Virtual:

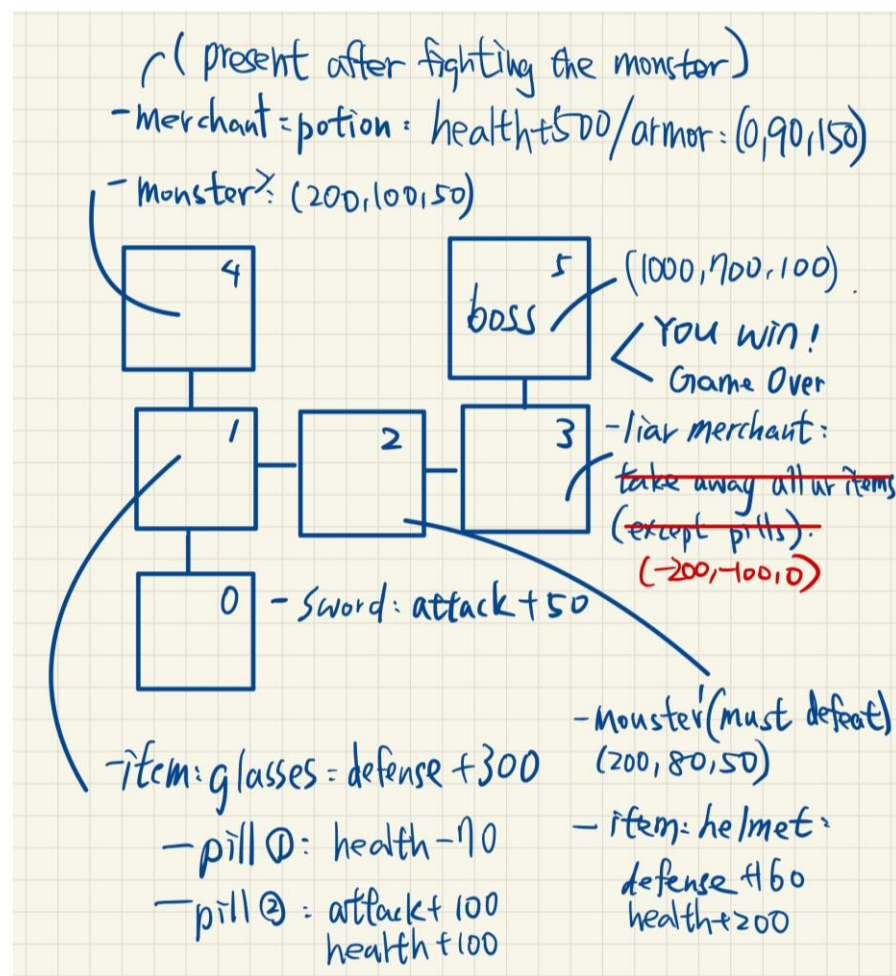
Inheritance: 完全參照之前助教給的流程圖，所以先跳過。

Virtual:在 `handleEvent` 裡面先分辨它是屬於甚麼屬性(monster, item, npc)，進而與物件互動，所以在 `object` 設一個 `pure virtual function (triggerEvent)`，並且在每一個 `monster, item` 和 `npc` 的 `class` 中用 `triggerEvent` 定義如何與玩家互動。這個部分我學到最多的是 `dynamic_cast` 的運用，我以前都不太清楚何時會用到它，現在終於搞懂了。

Optional Enhancement:

1. 在 `create player` 的部分新增了一些角色選項，讓初始結果(attack, defense)不盡相同，增加遊戲趣味性。
2. 上述 NPC 的部分。
3. 我 `include <windows.h>` 中的 `Sleep()` 功能，讓畫面在 `exit` 前多停留幾秒，這樣可以讓玩家看清楚勝負和 `cout` 的話。
4. 最後是我精心的設計了遊戲物件的數值，有些壞東西(item, NPC)會騙你的數值，增加遊戲難度。並且在與怪獸對決前會先印出怪獸的資訊，讓玩家可以計算自己是否有勝算打贏。

Result:



→ 遊戲結束 (勝利)

← 遊戲開始的畫面

C:\Users\chuch\Desktop\Dungeon\Dungeon

Enter your name: Chuchun

choose a game character:

1. Gina Lee
2. Rose flower
3. Jenny sun

1

choose your action:

1. move to another room.
2. show your status.
3. save game and logout
4. pick up sword

1

your moving choice:

1. go up

1

choose your action:

1. move to another room.
2. show your status.
3. save game and logout
4. pick up glasses
5. pick up crazy_pill
6. pick up happy_pill

4

Do you want the glasses?

1. yes
2. no way:(

1

Here's glasses(0,0,300)

choose your action:

1. move to another room.
2. show your status.
3. save game and logout
4. pick up crazy_pill
5. pick up happy_pill

C:\Users\chuch\Desktop\Dungeon\Dungeon\bin\Debug\Dungeon.exe

Do you want to meet crazy_merchant?

(Note: There are decent and liar merchant in this game. Do you want

1. yes pleassssse
2. no, good luck and good bye crazy_merchant

2

choose your action:

1. move to another room.
2. show your status.
3. save game and logout
4. interact with NPC.

1

your moving choice:

1. go left
2. go up

2

Do you want to fight with TISSUE BOSS MONSTER(1000,700,100)?

1. yes
2. no, retreat, back to previous room
3. check my status

3

Hi, Chuchun: This is your current status.
Your current health is 2070
Your attack is 240
Your defense is 810
Your current room is 5

Do you want to fight with TISSUE BOSS MONSTER(1000,700,100)?

1. yes
2. no, retreat, back to previous room
3. check my status

1

YOU WINNNNNN THIS GAME !!!!!!!!!!!!!!!!

your moving choice:

1. go left
2. go up

2

Do you want to fight with TISSUE BOSS MONSTER(1000,700,100)?

1. yes
2. no, retreat, back to previous room
3. check my status

3

玩家可由數據推斷可否擊敗怪獸

Hi, HE: This is your current status.

Your current health is 300

Your attack is 300

Your defense is 0

Your current room is 5

Do you want to fight with TISSUE BOSS MONSTER(1000,700,100)?

1. yes
2. no, retreat, back to previous room
3. check my status

1

YOU ARE DEFEATED BY TISSUE BOSS MONSTER
GAMEOVER!

→ 遊戲結束 (失敗)

C:\Users\chuch\Desktop\Dungeon\Dungeon\bin\Debug\Dungeon.exe

```
1
Do you want to fight with COFFEE monster(200,100,50)?
1. yes
2. no, retreat, back to previous room
3. check my status
1
you defeat COFFEE monster
choose your action:
1. move to another room.
2. show your status.
3. save game and logout
4. interact with NPC.
4

Do you want to meet merchant_wahaha?
(Note: There are decent and liar merchant in this game. Do you want to believe him?)
1. yes pleasssssse
2. no, good luck and good bye merchant_wahaha
1
WaHaHa, lucky chicken.enjoy your present!
Here's my item, potion_wahaha(500,0,0)
armor(0,90,150)
you have to take them.
1.OK
1
Hi, Chuchun: This is your current status.
Your current health is 900
Your attack is 400
Your defense is 300
Your current room is 4

Hi, Chuchun: This is your current status.
Your current health is 900
Your attack is 490
Your defense is 450
Your current room is 4
```

小怪之一

好的商人

C:\Users\chuch\Desktop\Dungeon\Dungeon\bin\Debug\Dungeon.exe

```
2. no way:(
1
Here's helmet(200,0,160)
this room is empty, just move!
your moving choice:
1. go left
2. go right
2
choose your action:
1. move to another room.
2. show your status.
3. save game and logout
4. interact with NPC.
4

Do you want to meet crazy_merchant?
(Note: There are decent and liar merchant in this game. Do you want to believe him?)
1. yes pleasssssse
2. no, good luck and good bye crazy_merchant
1
HEHEHE, you fool,don't trust stranger easily.
Here's my item, crazy_potion(-200,-100,0)
you have to take them.
1.OK
1
Hi, Chuchun: This is your current status.
Your current health is 900
Your attack is 240
Your defense is 710
Your current room is 3

this room is empty, just move!
your moving choice:
1. go left
2. go up
2
```

騙子商人

Discussion:

前期遇到的問題包括我想不通 **trigger event** 裡面的參數要放啥，最後竟然想通是該放 **player**，豁然開朗，突然覺得整個邏輯好厲害。

再來是整個 **choose action** 也讓我絞盡腦汁，我想要先讓 **monster** 跳出來，然後再跑 **objects** 的 **vector**，我的好朋友還教我說，可以先讓他 **input action** 後，再跑 **handleEvent(objects[action-4])**，好聰明欸！我原本一直為如何存取 **objects** 的 **index** 煩惱呢！

最後開始 **run** 之後最大的問題是整個程式一直跑不出某一個迴圈，我真的 **debug** 了超久，**de** 到最後竟然發現我的程式碼有一行直接消失(那行是一個 **while**)，好像是被隱藏還怎樣，我真的超傻眼欸從來沒看過這種東西，重點是消失的那行不管怎麼叫都叫不出來，這個問題後來輕易的被解決了，但我還是很生氣，所以要打上來給助教們笑笑。

Conclusion:

可能是太晚開始寫了讓我整個過程變得十分倉促，有很多應該可以修得更完美的地方沒有做好，例如介面設計和更多房間及選擇，但整體而言還是覺得以自己的能力可以寫出這樣子的遊戲，已經是在寫程式階段的一大進展，我對於成果也十分自豪。