

FOOP final project

資管三 B02705006 高偉立
資管三 B02705025 賴冠廷
資管三 B02705039 陳劭恩

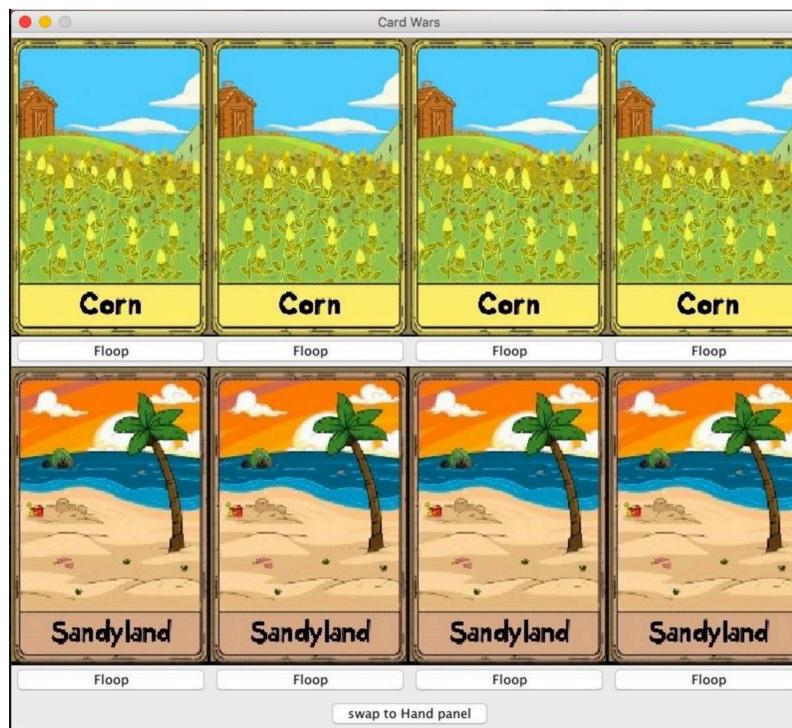
1. 如何分工

工作內容	負責人
主程式流程	高偉立
各種 component	賴冠廷
GUI	陳劭恩
遊戲內容討論與設計	高偉立、賴冠廷、陳劭恩

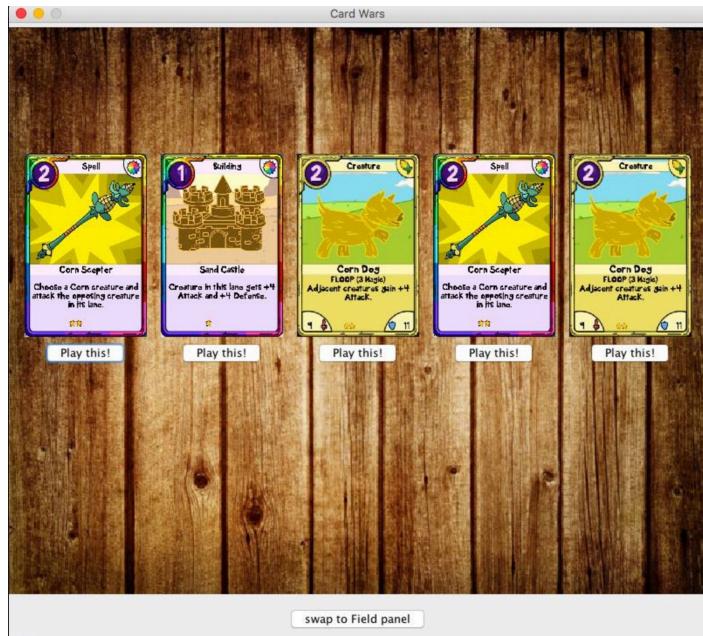
2. game introduction

這是一個出現在「探險活寶 Adventure Time」的回合式對戰桌遊，在現實中也有做成真正的卡牌桌遊，名為「Card Wars」。

我們把這個遊戲做成需要兩個人對戰的模式，因此需要輪流使用這個程式讓自己出牌。為了簡化遊戲複雜度，我們寫定了兩套固定的牌組“Corn”，“Sand”。



* battle field window



* Hand cards window

一開始會隨機擲骰子決定 0 或 1，如果擲到 0，player 0 得到 Hero Jake 以及 Corn set，player 1 得到 Princess_Bubblegum 以及 Sand set，反之則相反，每個玩家有四個 Field 可以使用。



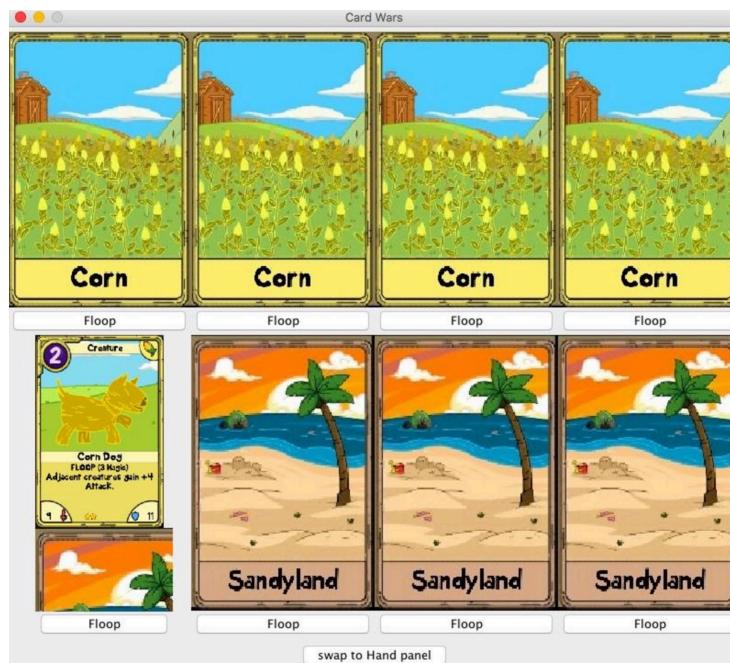
在每一個回合中，會有一次攻擊機會及一次則需要防守，攻擊機會可以放置 Creature Card, Building Card 或是使用 Spell Card，每使用一張卡也會有對應所需消耗的水晶數量。左上角為水晶消耗數量，左下角為攻擊力，右下角為防禦力（血量）。



回合一開始會隨著回合得到水晶數量（第一回合 2，第二回合 3...），接著便可以選擇 1. 發動 Spell Card, 2. 放置 Creature Card (並選擇放置的位置), 3. 發動 Spell Card，直到水晶數量不夠發動任何卡片或是卡片數量不足便可以結束該回合並且發動攻擊。

攻擊模式：此玩家的每一格 creature 攻擊對方對面的 creature，若是對面沒有 creature 則直接攻擊對方 Hero 的血量。

輪流攻擊，防守（被攻擊）直到其中一方 Hero 血量變為 0 則結束遊戲。



* place card on field

3. the class we design

- **Card**: 儲存每一張卡片基本資訊 (cost, ...)
 - **Creature Card**: 殺怪卡，faction 分為 Corn, Sand，每張卡都有 floop ability
 - ◆ Corn_Dog
 - ◆ Farmer
 - ◆ etc 我們設計了 25 種 creature

- Spell Card：魔法卡，每種都有特殊效果、能力
 - ◆ Corn_Scepter
 - ◆ Etc 我們設計了 4 種 spell card
- Building Card：建築卡，可以對該 Field 增加 Buff 能力
 - ◆ Sand_Castle
 - ◆ Silo_of_Truth
- Player：儲存、操作 player 手牌資訊、Hero 資訊、水晶資訊，並且擁有 draw_cards、play_card 等等 method
- Hero：儲存英雄資訊，包含血量、ability 等等
 - Jake
 - Princess_Bubblegum
- Land：儲存整個場地資訊，field[2][4]
- Field：儲存單一格資訊：是否有 creature, building，並儲存 current 攻擊力、防禦力、Buff
- Battle：控制整個遊戲流程

4. advantage of our design

- 將每個遊戲需用到的元件細細分的很清楚，實現物件導向的概念。
- 將 class 內的 member 幾乎使用 private 儲存，保護內部資訊不被隨意更改。
- class Card 被 Creature Card, Building Card, Spell Card 繼承，這三種又被每個特定的卡繼承，垂直架構細細分明。

5. disadvantage of our design

- 沒有使用 java 的 database，因此一開始便等先 new 好所有 instance，等候接下來被使用到，不能隨 call 隨產。

6. other package we use

- We code this project word by word, using no other package.

7. how to play

這是一個讓兩個人對戰的遊戲，歡迎助教找人一起玩，或是一個人扮演兩個 player 了

```
12:11:53 > java CardWars
Welcome to Card Wars !!
Setting game decks...
Player 0 gets the corn deck~
Player 1 gets the sand deck~
Player 0 gets hero Jake~
Player 1 gets hero Princess Bubblegum~
Setting up the corn field and sand field
Each player begins with one mana
Each player begins with 5 cards
Round 1 :
Player 0's turn!
Player 0 is given one more mana, he/she starts the round with 2 mana
Player 0 draws a card
Player 0 currently has 6 cards
Please enter the action you wish to perform
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, and -1 to finish the round
```

- (1) 開始執行程式後，會自動抽籤讓 Player 0 獲得 Jake & Corn deck 或是 Princess Bubblegum，Player 1 獲得另一組。
- (2) 起始回合會擁有 1 顆水晶以及 5 張牌，接下來輪到自己的回合時可獲得多一顆水晶以及抽一張卡。
- (3) 進入自己的回合後有三個選擇可以做
 - a. enter 1 : 在 hero ability 的冷卻過去後可以使用 hero ability
 - b. enter 2 : 從手牌中出牌到 battle field 上
 - c. enter 3 : 發動已經在 field 上的 creature 的 floop ability

```
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, and -1 to finish the round
1
Hero ability not ready!
```

* 如果選擇 1，且冷卻回合還沒過則會顯示 Hero ability not ready!

```
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, and -1 to finish the round
3
Please enter the the position of the creature you wish to floop - 0, 1, 2, or 3
0
Creature doesn't exist on that field, you may only floop creatures that exist!
```

* 如果選擇 3，且選擇的 field 上並沒有 creature 則會回傳錯誤

```
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, 4 to print card/field information, and -1 to finish the round
Player 0 currently has 2 mana
4
Enter 0 to print your hand and 1 to print field information
0
0. Creature name: Corn_Dog    Cost: 2    Attack: 9    Defense: 11    Floop cost: 3    Floop ability: Adjacent creatures gain +4 attack
1. Creature name: Travelin_Farmer    Cost: 1    Attack: 5    Defense: 5    Floop cost: 1    Floop ability: Get +1 attack for each adjacent empty lane
2. Creature name: Travelin_Farmer    Cost: 1    Attack: 5    Defense: 5    Floop cost: 1    Floop ability: Get +1 attack for each adjacent empty lane
3. Creature name: Ethan_Allfire    Cost: 1    Attack: 5    Defense: 1    Floop cost: 1    Floop ability: Lower attack of opposing creature by 3 and kill itself
4. Building name: Silo_Of_Truth    Building cost: 1    Building ability: Creature in this lane gain +2 attack for each card in your opponent's hand
5. Creature name: Corn_Dog    Cost: 2    Attack: 9    Defense: 11    Floop cost: 3    Floop ability: Adjacent creatures gain +4 attack
Please enter the action you wish to perform
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, 4 to print card/field information, and -1 to finish the round
Player 0 currently has 2 mana
```

* 選擇 4，再選擇 0，顯示手牌

```
Please enter the action you wish to perform
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures, 4 to print card/field information, and -1 to finish the round
Player 0 currently has 2 mana
4
Enter 0 to print your hand and 1 to print field information
1
No creature on this field /    No building on this field
No creature on this field /    No building on this field
No creature on this field /    No building on this field
No creature on this field /    No building on this field

No creature on this field /    No building on this field
No creature on this field /    No building on this field
No creature on this field /    No building on this field
No creature on this field /    No building on this field
```

* 選擇 4，再選擇 1，顯示場上的狀況

* 選擇-1 表示結束自己的這個回合，場上的 creature 便會自動對對方發動攻擊（以自己的攻擊力扣對方的防禦力，若對方無 creature 直接對對方 Hero 發動攻擊）

```
Round 23 :
Player 0's turn!
Player 0 is given one more mana, he/she starts the round with 13 mana
Player 0 draws a card
Player 0 currently has 16 cards
Please enter the action you wish to perform
Enter 1 to activate hero ability, 2 to play a card, 3 to activate the floop ability of one of your creatures
formation, and -1 to finish the round
Player 0 currently has 13 mana
-1
Player 1 dies!
Player 0 wins!
GAME OVER
```

* 經過 n 個回合，一方的血量歸零時便會結束遊戲。