

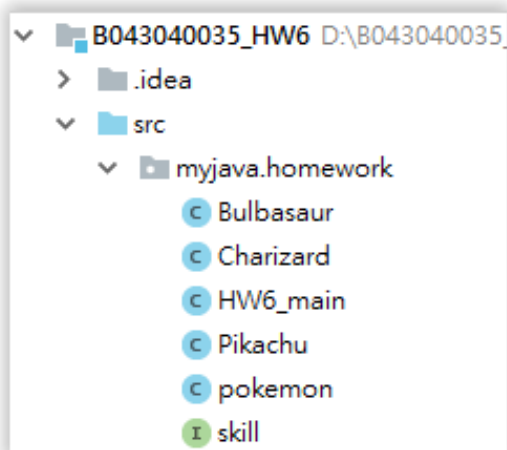
【2018 JAVA 物件導向程式設計 Homework 6】

● 注意事項

1. 請使用 JAVA 語言，配合 IntelliJ IDEA 寫本次作業並進行測試，並安裝、使用 JAVA SE Development Kit(JDK) 8 函式庫。
2. 請依據作業規定設定 IntelliJ IDEA 專案名稱與 package name，若未依照規定將根據狀況扣分。
3. 嚴禁抄襲其他同學作業，參與者(抄襲與被抄襲)均以零分計算。
4. 請對你的程式碼有深入瞭解，demo 時助教會問。
5. 對題目有問題可以寄信問助教群(java_ta@net.nsysu.edu.tw) 或是到實驗室 (EC5018)詢問，但不幫忙 debug。
6. 逾期以零分計算，不接受補交，有任何因素導致無法如期繳交，請事先告知；Demo 時間會另外通知。

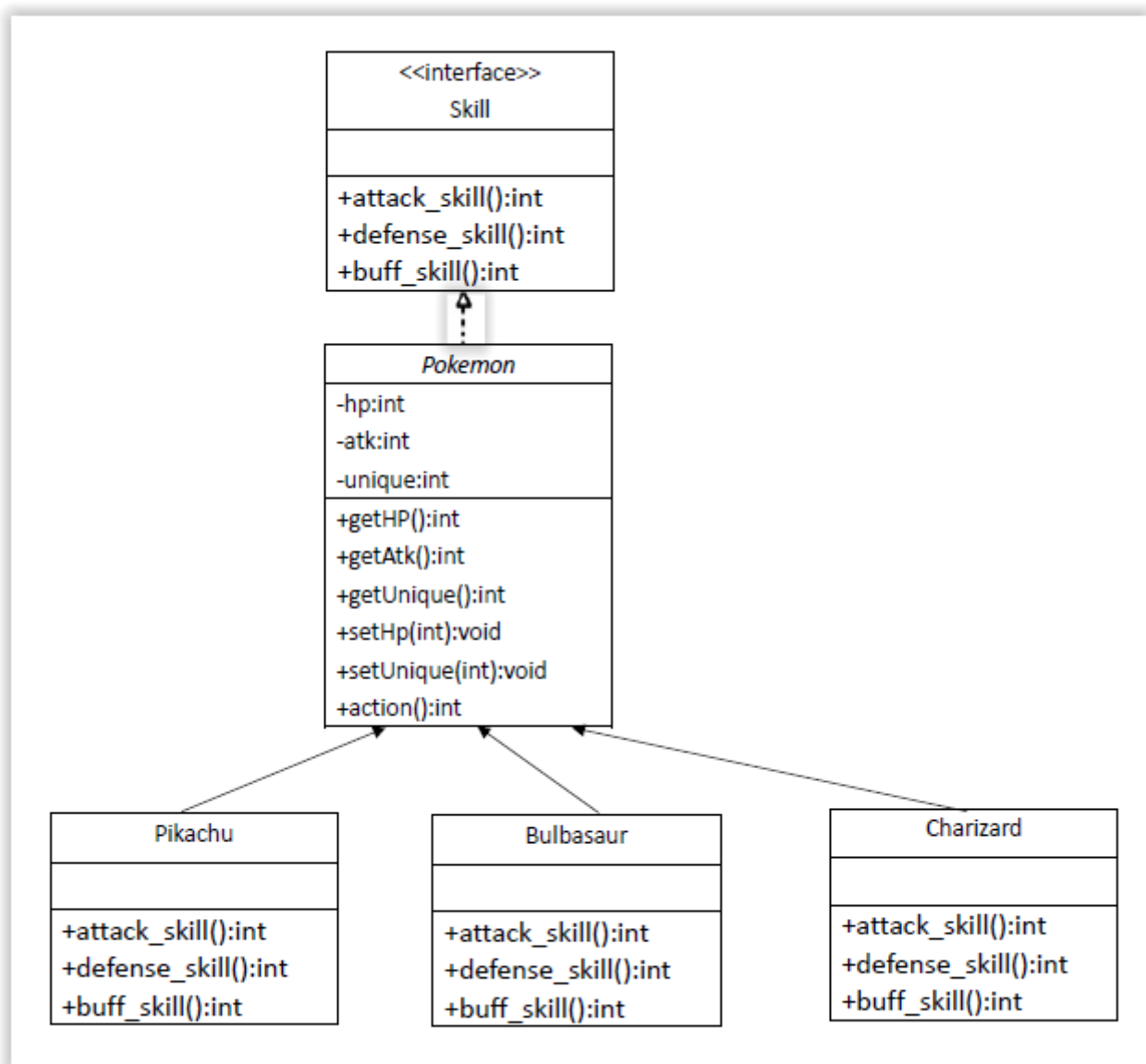
● 作業規定與上傳

1. IntelliJ IDEA 專案名稱:<學號>_HW6
2. Package path：myjava.homework
3. 作業請繳交專案之 tar 或 zip archive 並上傳至網路大學。
4. 請於 2018 年 4 月 22 日(週日) 23:59 前上傳完畢，逾期以零分計算，不接受補交，再次強調，有任何因素導致無法如期繳交，請事先告知，Demo 時間另外通知。
5. Example of package explorer(請根據作業規定修改):



- 提示：此次作業須參考 UML 圖完成，請注意 UML 圖中+,-,# etc.斜體字都是有意義的。

● 作業說明



1. 請依據上方 UML diagram 實作一個簡單的文字遊戲。
2. Pokemon 為抽象類別，其中含有一個抽象方法 `action()`，Skill 為 interface。
3. 底下三個類別：皮卡丘、妙娃種子、噴火龍，皆繼承 Pokemon。
4. `action()` 方法實作寶可夢的行動，皮卡丘可以攻擊、提高閃避、增加傷害，妙娃種子可以使用技能、防禦、治癒，噴火龍可以攻擊、反彈下次對方傷害、攻擊一定機率爆擊。

(1) 皮卡丘(Pikachu)：

- i. Thunder Shock(電擊)：產生 $ATK \sim (ATK + 10)$ 的傷害。
- ii. Double Team(影子分身)： $EVA * 2$ ，上限 100%。
- iii. Thunder(打雷)：雨天增加打雷的頻率，電擊傷害增加 $ATK * 2$
- iv. 皮卡丘被攻擊時由 EVA 機率決定是否迴避傷害，參考下面程式執行圖。

(2) 妙娃種子(Bulbasaur)：

- i. Razor Leaf(飛葉快刀)：產生 $(ATK * 4) \sim (ATK * 4 + 10)$ 的傷害。
- ii. Light Screen(光牆)：產生 $(ATK * 4) \sim (ATK * 4 + 10)$ 的護盾。(不能疊加)
- iii. Synthesis(光合作用)：回復 $(ATK * 2) \sim (ATK * 2 + 10)$ HP。(不能超過上限 HP)。
- iv. 妙娃種子被攻擊時由護盾吸收傷害，參考下面程式執行圖。

(3) 噴火龍(Charizard)：

- i. Flamethrower(噴射火焰)：產生 $ATK \sim (ATK + 10)$ 的傷害，爆擊時傷害*2
- ii. Parry(格擋)：反彈敵方傷害。。
- iii. Work Up(自我激勵)：CRI + 25%，上限 100%。
- iv. 格擋反彈傷害時，自己也會受到同等傷害。

- 5. `attack_skill()`、`defense_skill()` 和 `buff_skill()` 方法用來實作技能，以下為各角色行動與技能範例。
- 6. Unique 為各個寶可夢的特殊屬性，皮卡丘為 EVA、妙娃種子為 ES、噴火龍為 CRI。
- 7. 最後實作 Main 完成此程式，遊戲初始設定及流程請參考以下實作，在建立角色時，限制使用多型(Polymorphism)的方式建立，例如：`Pokemon h = new Pikachu();`

8. **PS：攻擊力- ATK、護盾- ES、迴避率- EVA、爆擊- CRI**

CRI

● **流程**

- 1. 程式執行時會隨機產生一個血量為 150~300，攻擊力 30~35 的寶可夢。
- 2. 你可以選擇三種職業
 - (1) 皮卡丘：攻擊力 40，HP 80，迴避率 20
 - (2) 妙娃種子：攻擊力 20，HP 40，光牆護盾 0
 - (3) 噴火龍：攻擊力 60，HP 200，爆擊率 30
- 3. 進入戰鬥採寶可夢先行攻擊制，怪物會隨機造成 $ATK \sim (ATK + 10)$ 的傷害。
- 4. 在戰鬥時 訓練師可以選擇收服敵方寶可夢，收服機率為 已損失生命值/初始生命值。
- 5. 結局：當有一方生命值為 0 時或敵方寶可夢被收服時要結束。

● Sample Output 1

```
(1) Pikachu (2) Bulbasaur (3)Charizard
Choose your pokemon (By default (1)) :ii
[Wild pokemon appeared!]
-----Pokemon-----      ----Wild Pokemon-----
HP:80              HP: 293
ATK:40             ATK: 33
EVA:10
-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball
you did not catch the wild pokemon
[Wild Pokemon]: 34 damage.
[Pikachu]: HP - 34 points.
-----Pokemon-----      ----Wild Pokemon-----
HP:46              HP: 293
ATK:40             ATK: 33
EVA:10
-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball
you did not catch the wild pokemon
[Wild Pokemon]: 34 damage.
[Pikachu]: HP - 34 points.
-----Pokemon-----      ----Wild Pokemon-----
HP:12              HP: 293
ATK:40             ATK: 33
EVA:10
-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball
you did not catch the wild pokemon
[Wild Pokemon]: 36 damage.
[Pikachu]: HP - 36 points.
-----Pokemon-----      ----Wild Pokemon-----
HP:0               HP: 293
ATK:40             ATK: 33
EVA:10
-----
You dead.
```

● Sample Output 2

```

(1) Pikachu (2) Bulbasaur (3) Charizard
Choose your pokemon (By default (1)) :1
[Wild pokemon appeared!]
-----Pokemon-----      -----Wild Pokemon-----
HP:80                      HP: 239
ATK:40                     ATK: 33
EVA:20

-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))2
[Double Team]: EVA +20 points
[Wild Pokemon]: 37 damage.
Evasion Succeed
-----Pokemon-----      -----Wild Pokemon-----
HP:80                      HP: 239
ATK:40                     ATK: 33
EVA:40

-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))2
[Double Team]: EVA +40 points
[Wild Pokemon]: 33 damage.
Evasion Succeed
-----Pokemon-----      -----Wild Pokemon-----
HP:80                      HP: 239
ATK:40                     ATK: 33
EVA:80

-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))2
[Double Team]: EVA +80 points
[Wild Pokemon]: 33 damage.
Evasion Succeed
-----Pokemon-----      -----Wild Pokemon-----
HP:80                      HP: 239
ATK:40                     ATK: 33
EVA:160

-----
(1)Thunder Shock (2)Double Team (3) Thunder (4)Catch
Action: (By default: (1))=
[Thunder Shock]: 44 damage
[Wild Pokemon]: 37 damage.
Evasion Succeed

```

```

----Pokemon-----      ----Wild Pokemon-----
HP:80                  HP: 195
ATK:40                 ATK: 33
EVA:160

-----
(1)Thunder Shock  (2)Double Team  (3) Thunder  (4)Catch
Action: (By default: (1))3
[Thunder]: ATK +40 damage
[Wild Pokemon]: 36 damage.
Evasion Succeed

----Pokemon-----      ----Wild Pokemon-----
HP:80                  HP: 195
ATK:80                 ATK: 33
EVA:160

-----
(1)Thunder Shock  (2)Double Team  (3) Thunder  (4)Catch
Action: (By default: (1))3
[Thunder]: ATK +80 damage
[Wild Pokemon]: 36 damage.
Evasion Succeed

----Pokemon-----      ----Wild Pokemon-----
HP:80                  HP: 195
ATK:160                ATK: 33
EVA:160

-----
(1)Thunder Shock  (2)Double Team  (3) Thunder  (4)Catch
Action: (By default: (1))1
[Thunder Shock]: 169 damage
[Wild Pokemon]: 36 damage.
Evasion Succeed

----Pokemon-----      ----Wild Pokemon-----
HP:80                  HP: 26
ATK:160                ATK: 33
EVA:160

-----
(1)Thunder Shock  (2)Double Team  (3) Thunder  (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball

-----
you caught the wild pokemon

```

● Sample Output 3

```
(1) Pikachu (2) Bulbasaur (3)Charizard
Choose your pokemon (By default (1)) :2
[Wild pokemon appeared!]
-----Pokemon-----      -----Wild Pokemon-----
    HP:40                HP: 215
    ATK:20                ATK: 31
    LS:0

-----
(1)Leaf Razor  (2) Light Shield  (3) Synthesis  (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball
you did not catch the wild pokemon
[Wild Pokemon]: 35 damage.
[Light  Shield]: Shield -0 damage.
[Bulbasaur]: HP -35 points.
-----Pokemon-----      -----Wild Pokemon-----
    HP:5                HP: 215
    ATK:20                ATK: 31
    LS:0

-----
(1)Leaf Razor  (2) Light Shield  (3) Synthesis  (4)Catch
Action: (By default: (1))3
[Synthesis]: HP +49 points
[Wild Pokemon]: 31 damage.
[Light  Shield]: Shield -0 damage.
[Bulbasaur]: HP -31 points.
-----Pokemon-----      -----Wild Pokemon-----
    HP:9                HP: 215
    ATK:20                ATK: 31
    LS:0

-----
(1)Leaf Razor  (2) Light Shield  (3) Synthesis  (4)Catch
Action: (By default: (1))2
[Light Screen]: Shield +83 points
[Wild Pokemon]: 31 damage.
[Light  Shield]: Shield-31 damage.
```

```
-----Pokemon-----      -----Wild Pokemon-----
    HP:9                HP: 215
    ATK:20                ATK: 31
    LS:52

-----
(1)Leaf Razor  (2) Light Shield  (3) Synthesis  (4)Catch
Action: (By default: (1))1
[Razor Leaf]: 84 damage
[Wild Pokemon]: 34 damage.
[Light  Shield]: Shield-34 damage.
-----Pokemon-----      -----Wild Pokemon-----
    HP:9                HP: 131
    ATK:20                ATK: 31
    LS:18

-----
(1)Leaf Razor  (2) Light Shield  (3) Synthesis  (4)Catch
Action: (By default: (1))4
[catch]: Throw the Poké Ball
-----
you caught the wild pokemon
```

● Sample Output 4

```
(1) Pikachu (2) Bulbasaur (3)Charizard
Choose your pokemon (By default (1)) :3
[Wild pokemon appeared!]
----Pokemon-----      ----Wild Pokemon-----
  HP:200              HP: 183
  ATK:60              ATK: 30
  CRI:30
-----
(1)Flamethrower (2) Parry (3)Work Up (4)Catch
Action: (By default: (1))3
[Work Up]: CRI 55%
[Wild Pokemon]: 33 damage.
[Charizard]: HP - 33 points.
----Pokemon-----      ----Wild Pokemon-----
  HP:167              HP: 183
  ATK:60              ATK: 30
  CRI:55
-----
(1)Flamethrower (2) Parry (3)Work Up (4)Catch
Action: (By default: (1))=
[Flamethrower]: 67 damage
[Wild Pokemon]: 33 damage.
[Charizard]: HP - 33 points.
----Pokemon-----      ----Wild Pokemon-----
  HP:134              HP: 116
  ATK:60              ATK: 30
  CRI:55
-----
(1)Flamethrower (2) Parry (3)Work Up (4)Catch
Action: (By default: (1))2
[Parry]: return next damage
[Wild Pokemon]: 34 damage.
[Charizard]: HP - 34 points.
----Pokemon-----      ----Wild Pokemon-----
  HP:100              HP: 82
  ATK:60              ATK: 30
  CRI:55
-----
(1)Flamethrower (2) Parry (3)Work Up (4)Catch
Action: (By default: (1))=
[Flamethrower]: 126 damage
----Pokemon-----      ----Wild Pokemon-----
  HP:100              HP: 0
  ATK:60              ATK: 30
  CRI:55
-----
You win...
```