

← implements

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## Lab 04 (updated)

Group 6

### interface Character

- void showInfo(): แสดง stat ต่างๆ
- void attack(Character \_): โจมตี
- void beAttacked(double \_): ถูกโจมตี
- void equip(String \_): ใช้/ใส่ Accessory
- void unEquip(String \_): ถอด Accessory
- void upgrade(String \_): upgrade Accessory
- boolean isDead(): เช็คถ้าถูกตัวจะครีมนั้นตายหรือยัง
- String getName(): return name
- void setName(String \_): ตั้งชื่อตัวจะครีมนั้น
- void setType(String \_): กำหนดประเภทของตัวจะครีมนั้น
- int getLevel(): return level
- int getMoney(): return money
- void setMoney(int \_): update money
- int getMana(): return mana
- void setMana(int \_): update mana
- double getAtk(): return atk
- void setAtk(double \_): update atk
- double getDef(): return def
- void setDef(double \_): update def
- double getSpeed(): return speed
- void setSpeed(): update speed
- void getRing(): return ring
- void getBoots(): return boots

### class Characters

- instance variables
  - string: name, cType
  - int: level, money, hp, mana
  - double: atk, def, speed
  - Ring: ring
  - Boots: boots

### class Human

- instance variables
  - Sword: sword
  - boolean[]: humanAcc size = 4
  - Shield: shield
  - boolean: isStrengthAct
- instance method
  - void showInfo() **Override**
  - void equip(String-) **Override**
  - void unEquip(String-) **Override**
  - void upgrade(String-) **Override**
  - void strength(): เพิ่ม def 2x ถั่วหมู
  - void beAttacked(double-) **Override**

### class Elf

- instance variables
  - Bow: bow
  - boolean[]: humanAcc size = 4
  - Headband: headband
  - boolean: isStealthAct
- instance method
  - void showInfo() **Override**
  - void equip(String-) **Override**
  - void unEquip(String-) **Override**
  - void upgrade(String-) **Override**
  - void stealth(): เพิ่ม speed 1.5x ถั่วหมู + 20% ถั่วหมู 50%
  - void beAttacked(double) **Override**

### class Ring

- instance variable
  - int: boostMana
- instance methods
  - int getBoostMana(): return boostMana
  - void upgrade() **Override**

### class Sword

- instance variable
  - double: swordDmg
- instance methods
  - double getSwordDmg(): return swordDmg
  - void upgrade() **Override**

### class Bow

- instance variable
  - double: bowDmg
- instance methods
  - double getBowDmg(): return bowDmg
  - void upgrade() **Override**

### interface Accessory

- void upgrade(): upgrade Accessory
- int getLevel(): return level ของ Accessory
- int getUpgradePrice(): return ราคามิเตอร์ Accessory
- void setUpgradePrice(int \_): เพิ่มราคามิเตอร์ Accessory

### class Accessories

- instance variables
  - int: level, upgradePrice

### class Shield

- instance variable
  - double: shieldDef
- instance methods
  - double getShieldDef(): return shieldDef
  - void upgrade() **Override**

### class Boots

- instance variable
  - double: boostSpeed
- instance methods
  - double getBoostSpeed(): return boostSpeed
  - void upgrade() **Override**

### class Headband

- instance variable
  - double: hbDef
- instance methods
  - double getHbDef(): return hbDef
  - void upgrade() **Override**

## default values & formulas

<ul style="list-style-type: none"><li>• Human<ul style="list-style-type: none"><li>- cType = "Human"</li><li>- level = 1</li><li>- money = 1000</li><li>- hp = 100</li><li>- mana = 0</li><li>- atk = 10</li><li>- def = 5</li><li>- speed = 10</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Ring (Human &amp; Elf)<ul style="list-style-type: none"><li>- boostMana (base) = 1</li><li>- boostMana *= 2</li><li>- upgradePrice *= 2</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Sword (Human)<ul style="list-style-type: none"><li>- swordDmg (base) = 1</li><li>- swordDmg *= <math>1 + 0.2 * \text{level}</math></li><li>- upgradePrice *= 3</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Bow (Elf)<ul style="list-style-type: none"><li>- bowDmg (base) = 1.2</li><li>- bowDmg *= <math>1 + 0.1 * \text{level}</math></li><li>- upgradePrice *= 3</li></ul></li></ul>
<ul style="list-style-type: none"><li>• Elf<ul style="list-style-type: none"><li>- cType = "Elf"</li><li>- level = 1</li><li>- money = 1000</li><li>- hp = 100</li><li>- mana = 0</li><li>- atk = 12</li><li>- def = 3</li><li>- speed = 10</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Boots (Human &amp; Elf)<ul style="list-style-type: none"><li>- boostSpeed (base) = 1</li><li>- boostSpeed *= <math>1 + 0.1 * \text{level}</math></li><li>- upgradePrice *= 2</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Shield (Human)<ul style="list-style-type: none"><li>- shieldDef (base) = 1.5</li><li>- shieldDef *= <math>1 + 0.05 * \text{level}</math></li><li>- upgradePrice *= 3</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Headband (Elf)<ul style="list-style-type: none"><li>- hbDef (base) = 1.2</li><li>- hbDef *= <math>1 + 0.1 * \text{level}</math></li><li>- upgradePrice *= 3</li></ul></li></ul>