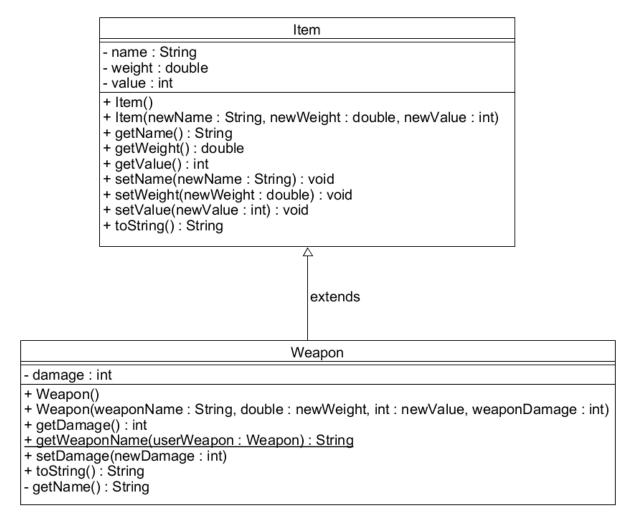
Louie Green CS 249
Homework 6 October 25, 2016

1. Given a superclass "Animal" and a subclass "Walrus", write the CODE for the class definition of "Walrus". It should contain NO data or methods; just show the class definition such that "Walrus" inherits from "Animal".

```
public class Walrus extends Animal {
}
```

- 2. Given the code below, what is this an example of? Animal a = new Walrus();
 - a. Upcasting
- 3. Is the code in the previous question legal? Briefly explain your answer.
 - a. It is allowed because a walrus is a type of animal.
- 4. Design and draw the UML diagrams for the following classes: Also draw the inheritance relationship!



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5. Modify the Player class and draw the new UML diagram for it (you do not need to draw any relationships here):

Player

playerPos: int[]

health: int

- weapon: Weapon

- inventory : ArrayList<Item>

+ Player(desiredPos: int[])

+ Player(desiredX: int, desiredY: int)

+ getPlayerPos(): int[]

+ getHealth(): int

+ getWeapon(): Weapon

+ getWeaponName(): String

+ printlnventory(): void

+ incrementPlayerX(): void

+ incrementPlayerY(): void

+ setPlayerPos(desiredPos: int[]): void

+ setPlayerHealth(desiredHealth: int): void

+ setWeapon(newWeapon: Weapon): void

+ addToInventory(userItem : Item) : void

+ removeFromInventory(item : int) : void

- 6. A child class inherits private methods from the superclass.
 - a. True but they are not accessible
- 7. In Java, a subclass may only extend ONE superclass.
 - False
- 8. A protected field in the superclass is accessible by a subclass, EVEN if the subclass is in a DIFFERENT package than the superclass.
 - a. False
- 9. What class is the ancestor of ALL other Java classes? (I.e., it is at the very top of the inheritance tree?)
 - a. Java.lang
- 10. What Java operator allows me to check what class a given object is?
 - a. Instanceof
- 11. When is the no-args **super()** constructor **implicitly** called?
 - a. Only if the current constructor does not explicitly make a call to another constructor or superclass constructor

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- 12. To **override** a method, what must be the same?
 - a. The signature