1 Theory

(a) It is a set of classes.

(b) It is a way of organizing the program and it allow the use of the protected declaration.

(c) Shadowing is the concept of using the same name for two variables. The variable with the lower level scope will "overshadow" the one with higher level.

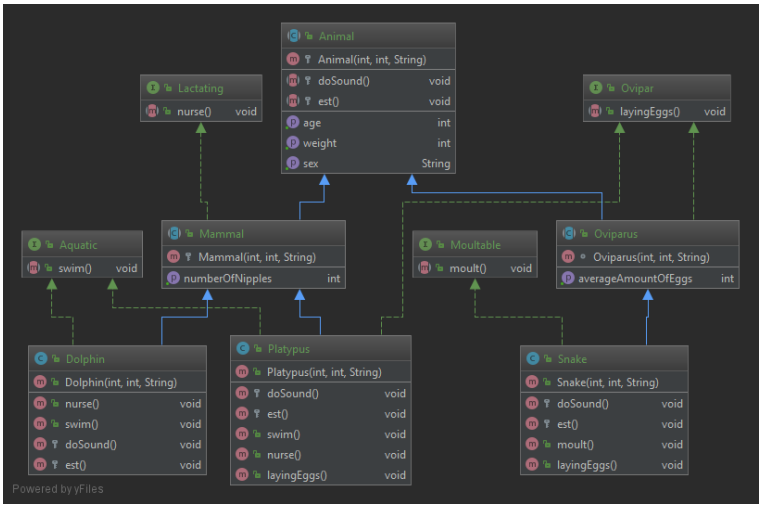
(d) ???

(e) The default visibility is one that allow all classes of the same package to use the variable. For example, if we need a variable in another class of the package we could let it default or use the protected declaration.

(f) Private members are only visible within the class, protected members are visible to the whole package.

(g) If we do not need any other class of the package it seems like a waste or resource to import the entire package.

2 Implementation



(a) The difference is that their properties are not the same as well as they do not implement the same interface.

(b) The other way would be to create Platypus as an extension of Oviparus and let it implement Aquatic and Lactating.

3 Debugging

1. ```
   Error:(4, 12) java: package core does not exist
   ```

   This is due to the fact that PrettyPrinter isn't in the core package.

   ```
   Error:(8, 31) java: constructor Character in class java.lang.Character c
       required: char
       found: java.lang.String,java.lang.String,int
       reason: actual and formal argument lists differ in length
   ```

   The constructor for Character did not receive the proper arguments (this is due to the fact that we imported the wrong class, the one from java.lang)

   ```
   Error:(10, 28) java: cannot find symbol
       symbol:   variable PrettyPrinter
       location: class week_5.ex3.Main
   ```

   Since we didn't import the class PrettyPrinter successfully, the method printCharacter does not exist

   ```
   Error:(4, 42) java: cannot find symbol
       symbol:   variable bookTitle
       location: variable character of type java.lang.Character
   ```

   ```
   Error:(5, 39) java: cannot find symbol
       symbol:   variable name
       location: variable character of type java.lang.Character
   ```

   ```
   Error:(6, 37) java: cannot find symbol
       symbol:   variable age
       location: variable character of type java.lang.Character
   ```

   All these errors are linked to the fact that PrettyPrinter isn't in the core package, so the compiler thinks we are talking about the java.lang Character and not ours.
   ```

2. These outputs are different because the println prints the object while printCharacter print is a defined method that explicitly outputs the fields' names and values. The number after core.Character is a hex number that represents the address in memory of the object Character.