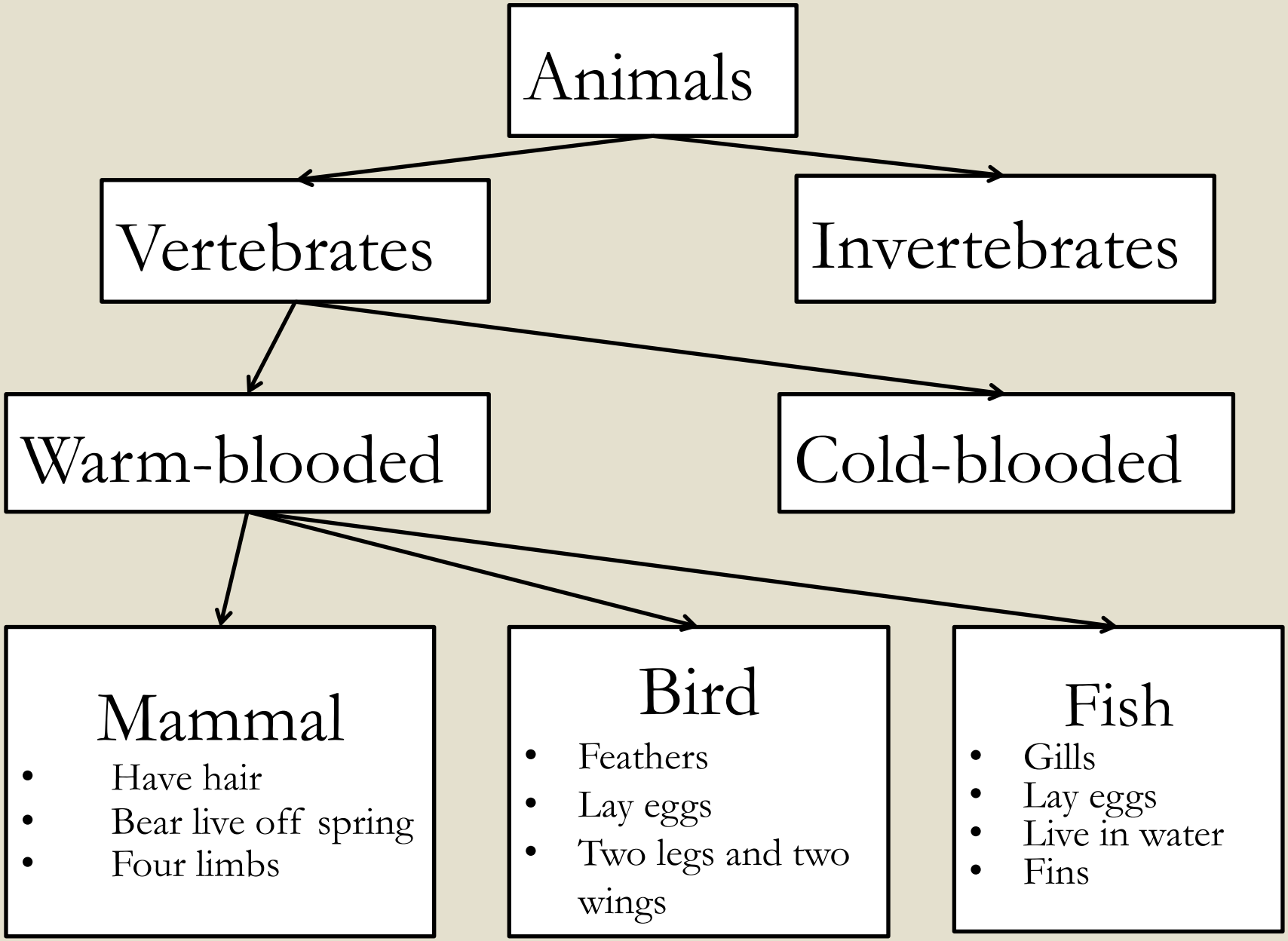
Inheritance – The process in which a new class is derived from an existing one.

Class – Establishes the behaviors and attributes of an object but reserves no memory space for these attributes.

Object – Actual embodiment/instance of the class.

Pros

1. Reuse of existing software
2. Development is a lot faster, cheaper and easier
3. Capitalize on the effort that went into designing and testing of existing code
4. Easier to maintain in long term


Animals
Vertebrates
Invertebrates
Warm-blooded
Cold-blooded
Mammal
Have hair
Bear live off spring
Four limbs
Bird
Feathers
Lay eggs
Two legs and two wings
Fish
Gills
Lay eggs
Live in water
Fins

Recap and Quiz

- Inheritance – The process in which a new class is derived from an existing one.
- Quiz
  - Write a class "WarmBlooded" which inherits from Vertebrate.
  - Write a toString() method to explain overriding and use of super keyword.
  - Declare an object "Dolphin" which is "WarmBlooded" in the zoo class

Answer

```
package com.zoo.model;

public class WarmBlooded extends Vertebrate {

    private int normalBodyTemp; // in Celsius

    public WarmBlooded(String scientificName, String habitat,
            float backboneLength, boolean hasEggs, int normalBodyTemp) {
        super(scientificName, habitat, backboneLength, hasEggs);
        this.normalBodyTemp = normalBodyTemp;
    }

    public WarmBlooded(String scientificName, float backboneLength,
            boolean hasEggs, int normalBodyTemp) {
        super(scientificName, backboneLength, hasEggs);
        this.normalBodyTemp = normalBodyTemp;
    }

    public String toString() {
        return super.toString() + "Normal Body Temp (Celcius): "
                + getNormalBodyTemp() + "\n";
    }

    protected int getNormalBodyTemp() {
        return normalBodyTemp;
    }

    public void setNormalBodyTemp(int normalBodyTemp) {
        this.normalBodyTemp = normalBodyTemp;
    }

}
```

Answer

WarmBlooded.jav | Mammal.java | Fish.java | Zoo.java

```
1  package com.zoo.controller;
2
3  import com.zoo.model.WarmBlooded;
4
5  public class Zoo {
6
7      public static void main(String args[]) {
8
9          // Quiz/Test Code
10         WarmBlooded Dolphin = new WarmBlooded("Delphinidae", "Water", 2f,
11                 false, 37);
12         System.out.println(Dolphin.toString());
13
14     }
15 }
16
```

Console

<terminated> Zoo [Java Application] /Library

```
Scientific Name: Delphinidae
Habitat: Water
Backbone Length (Meters): 2.0
Has Eggs: false
Normal Body Temp (Celcius): 37
```

Download the example of application Zoo from this link to practice further:

http://bit.ly/1V5m0EL