This lab is designed to demonstrate a fundamental of object-orientation: polymorphism.

1. In Eclipse, create a Lab4 project and add class files called: TestBikes.java, Bicycle.java, MountainBike.java and RoadBike.java

2. The labcode.txt file on Blackboard contains the starting code you will need to put into your java class files (except RoadBike.java, which you'll need to add yourself later)

3. There is something wrong with the class *Bicycle*, fix it.

4. Override the method *applyBrake* in *MountainBike* to change the new speed to be: speed = speed-decrement*2.

5. Write a new class called *RoadBike* that extends *Bicycle.* Because road bikes have skinny tires, add an attribute to track the tire width, and write *getTireWidth* and *setTireWidth* to get and set the values of tire width. The constructor of *RoadBike* also should have an argument to pass the tire width. **Note: You don't need to write this class from scratch. RoadBike is almost identical to MountainBike, but deals with tireWidth rather than suspension**

6. Uncomment the two lines in Main() which create and add RoadBikes to the ArrayList

7. Complete printList in TestBikes to iterate over the ArrayList, and check the type of the bike that is passed using *instanceof.* If the bike is of type MountainBike, it should print: "This is a MountainBike" and then it should call printDescription. If the bike is of type RoadBike, it should print: "This is a RoadBike" and then it should call printDescription.

   Helpful hint: You can get the size of an ArrayList using *size(),* and retrieve an item in an ArrayList using *get(i)* where *i* is the position in the list

8. Run TestBikes.java to make sure your program works