# Worksheet 4

An abstract class is a type of superclass. It represents an abstract concept. The reasoning behind abstract classes is that there is no good default code for a method and any subclass would override the method. In an abstract superclass, the method is a placeholder while the subclass contains the implementation.

In the case of the example file, there is an abstract class Lights that defines an abstract method animate().

1. **Search through the example file and describe each implementation of the abstract method animate for each respectively named subclass.**
2. **Theorize two more types of light animations that you think could be implemented in a subclass. Write down the ideas and how they relate to the abstract class.**

You may have noticed that the abstract class contains both instance variables and non-abstract methods. Additionally, the abstract class in the example had a constructor, although this is not required for abstract classes.

1. **In the main method of the example file, try to create an instance of the abstract class. What happens?**

Consider a theoretical abstract class and abstract methods relating to LocoXtreme driving.

1. **Describe what aspects would be contained in the abstract class and what method or methods would be declared as abstract.**
2. **In your theoretical abstract class example, theorize two types of classes that will extend the abstract class and each provide an implementation of the abstract method.**