Problem 1. **[Data Structures]** For this problem, you will be given a list of students, represented as instances of a `Student` class. Each student has a first name, a last name, a gpa, and a class (classes are Freshman, Sophomore, Junior, Senior). In a method called `processStudents`, you will read `Student` objects from an input list and put each in a `HashMap`. Each *value* in the `HashMap` will be a `Student` object; the corresponding *key* for a `Student` object will be a `Key` object whose instance variables are `firstName` and `lastName`, representing the first and last names of this `Student`. For each `Student` object read from the list, you will create the `Key` object and insert the `Key,Student` pair into the `HashMap`.

Your `prob1` package contains a fully implemented `Student` class, and contains a partially implemented `Key` class. This `prob1` package also contains a class `Admin` containing the following unimplemented static method:

```
HashMap<Key,Student> processStudents(List<Student> students).
```

This method will carry out the steps described above: For each `student` object in the input list `students`, it will read `firstName` and `lastName`, and then use these to populate a new `Key` object `key`; it will then insert (`key, student`) as an entry in the `HashMap`. After the `students` list has been processed in this way, the `HashMap` is returned.

There is one additional class in the `prob1` package, called `Test`, which has already been fully implemented. The `Test` class has a `main` method that will provide sample data to test your `processStudents` method. The `main` method will output "pass" to the console if the test passes, but will output "fail" if it does not. In order to get full credit, the `main` method must (correctly) output "pass".

Your tasks for this problem are as follows:

(1) Add any necessary code to the `Key` class to ensure it may be used reliably as a key in a `HashMap`.
(2) Implement the `processStudents` method
(3) Run the `main` method in the `Test` class to verify that your solution works (and correct your code if it does not).

Requirements for this problem.

(A) You may not modify the `Student` class or change the instance variables provided in the `Key` class
(B) You are allowed to modify the `Test` class, but your code *must* pass the test that has been provided for you in the `main` method of this class.
(C) Appropriate changes must be made to the `Key` class (to follow best practices and to ensure that the `main` method will output "pass" to the console).
(D) There must be no compiler or runtime errors in your submitted code.