Additional practice

1. The file `AirQuality.json` contains a series of data values. Create a function to read the JSON file into a list, using the `json` module.

2. Create three classes to hold the data values that are given in `AirQuality.json`. These classes should be defined as:

   - A `Species` class that contains a code and air quality index.
   - A `Site` class that contains a name, latitude, longitude and a list of `Species` objects.
   - A `LocalAuthority` class that contains a name and a list of `Site` objects.

3. Write `__repr__` functions for the three classes. These functions should return a text string that contains the data member names and their values, for each of the classes.

4. Add a `loadFromJson` function to the `LocalAuthority` class. This function should contain the code that is given in Listing 6.

Listing 6: A function to load values from JSON

```
1     def loadFromJson(self, jsonData):
2         self.name = jsonData["name"]
3         del self.sites[:]
4         for jsonSite in jsonData["sites"]:
5             site = Site()
6             site.loadFromJson(jsonSite)
7             self.sites += [ site ]
```

5. Write a `loadFromJson` function for the `Site` and `Species` class. This function should be similar to Listing 6, where the `Species` version does not include a `for` loop.

6. A function to the `Site` class to return the average air quality index of a site. The function should calculate the average using the air quality index from each species object.