University of Strathclyde Glasgow

Python: Unit tests

These exercises assume that the "Python: Classes" and "Python: Input/output" exercises have been completed.

1. Write a unit test to verify that the percentage electric charge is calculated correctly by the member function of the `ElectricCar` class. (The `ElectricCar` class is described in the "Python: Classes" examples.)
2. Write a unit test to verify that the total power is calculated correctly by the member function of the `SolarArray` class. (The `SolarArray` class is described in the "Python: Classes" examples.)
3. Write unit tests to validate that the functions in the `Customer` and `Purchase` class work as expected. (The `Customer` and `Purchase` class are discussed in the "Python: Input/output" examples.)
4. Create a file that matches the Python code given in Listing 1. This file assumes that the `Species` and `Site` class from the "Python: Input/output" exercises are in a file named `air_quality.py` in the present working directory. Replace the `pass` commands with unit test code that verifies that the `__repr__`, `load_from_json` and `average_air_quality_index` function work correctly.

Listing 1: Initial unit test code.

```
1  from air_quality import Species, Site
2  import unittest
3
4
5  class TestSpecies(unittest.TestCase):
6      def test_repr(self):
7          pass
8
9      def test_load_from_json(self):
10         pass
11
12
13 class TestSite(unittest.TestCase):
14     def test_repr(self):
15         pass
16
17     def test_load_from_json(self):
18         pass
19
20     def test_average_air_quality_index(self):
21         pass
22
23
24 if __name__ == "__main__":
25     unittest.main()
```