Exercises - Classes:

Questions 1 & 3 are the assessed question in this set.

1. Use the **`Coin`** class provided in the file **`coin_module.py`**. You will edit the tester program called **`coinprog.py`** so that it is able to produce input / output as follows:

```
Type:
      f - to flip the coin
      q - to quit

Enter selection: f
The result was H

Type:
      f - to flip the coin
      q - to quit

Enter selection: f
The result was T

Type:
      t - to flip the coin
      q - to quit

Enter selection: q
```

2. Write an adaption of the **`Coin`** class called **`Dice`**. "**`Dice`**" should represent a dice that can be thrown (with six faces) rather than a coin that can be flipped. There should be:
    - a **`cast()`** method (in place of **`Coin`**'s **`flip()`** method)
    - a **`get_face()`** method which should return an integer representing the value of the dice when it is thrown.
    - a static constant which is a dictionary that can be used to convert the face value to a word.

   The new class should be compatible with a test program **`diceprog.py`**, (which you should also write) so that **`diceprog.py`** is able to produce input/output such as:

```
Type:
      t - to cast the dice
      q - to quit

Enter selection: t
The result was five

 Type:
      t - to cast the dice
      q - to quit
Enter selection: q
```

3. Use the **`Coin`** class provided. You will write a tester program called **`coinlistprog.py`** which fills a list with 20 **`Coin`** objects and prints the percentages of heads and tails. **`coinlistprog.py`** should produce output as follows:

```
Coins: T T H T H H T T T T T H H T T T T H H H

Heads:  40.00%
Tails:  60.00%
```

These problems are adapted from a course at UCL in the Department of Information Studies, Programming 1.

Further practice problems can be found in Think Like a Computer Scientist or in any Python textbook.