

Exercises: Classes

Part A

Write a Python module providing classes for drawing “ASCII art” – i.e. pictures drawn using only characters from the ASCII character set. The module should have classes supporting the drawing of rectangles, squares and triangles. There should also (of course!) be a unit test program. In fact, you might want to follow test-driven development properly and write the tests first!

Part B

Write a Python module providing classes for drawing shapes using the *turtle* module. The module should have classes supporting the drawing of rectangles, squares and triangles.

Part C

Write a Python module providing classes for modelling a filing system. There should be support for plain files, symbolic links and directories comprising plain files, symbolic links and other directories.

Write a function for traversing the graph looking for cycles that could cause operations on the filing system to enter infinite loops.

Part D

Write a Python module providing a class *Matrix*. All appropriate operators should be defined so that variables of type *Matrix* can be used in expressions.