

COMP241-07A

Software Engineering Development

Assignment 1

1 Assignment Goals

Testing is an integral part of software development. It has been recognised as good practice to develop good sets of test cases and implement them even before the software to be tested is written. The objective of this assignment is to introduce you to the idea of test-driven software development.

2 The ImageOrganizer library

On the course homepage you will find an archive that contains specification and reference Java implementation of a library for organizing and viewing digital images. You will use this library in this and following assignments. The archive contains the following packages and files:

```
docs/
imageorg/
    |--Annotation.{java,class}
    |--FileElement.{java,class}
    |--Folder.{java,class}
    |--Image.{java,class}
    |--ImageOrganizer.{java,class}
imageviewer/
    |--ImageViewer.{java,class}
    |--ImageViewerTest.{java,class}
implementation/
    |--MarksAnnotation.class
    |--MarksFileElement.class
    |--MarksFolder.class
    |--MarksImage.class
    |--MarksImageorganizer.class
testcases
    |--AbstractFixture.{java,class}
pictures.jar
```

The ImageOrganizer specification (see the docs) requires an implementation to provide the following functionality:

- Import images and folders containing images into a central repository

- Create sub-folders within the repository
- Move images and folders within the repository
- Copy images and folders within the repository
- Delete images and folders from the repository
- Add (searchable) annotations to folders and images within the repository
- Search for images and folders within the repository

It is envisioned that an implementation of the ImageOrganizer specification could be used as a “back-end” for a GUI photo organizer application (like iPhoto or Picasa).

3 Your Task

Your task is to write a set of JUnit tests cases for the methods defined in `Image` class and its superclass `FileElement`. Start by reading the JavaDocs for these two classes (and supporting docs for the `ImageOrganizer` class). The JavaDocs specify the behaviour of the methods you will be testing. You can assume—for the purpose of testing `Image` and `FileElement`—that the implementation of the methods defined in `Folder` are bug-free. Create your JUnit test classes in the `testcase` directory by extending the `AbstractFixture` class.

There are bonus marks for finding any bugs in the provided reference implementation!

This assignment may be completed individually or in pairs.

4 Submission Procedure

Your complete submission should include:

- The compiled code of your application, ready to run from an *executable* JAR archive.
- The well written and documented source code of your test cases.
- A written report explaining the test cases that you have chosen, and a discussion of the test results.

Please create a `.tar.gz` archive containing all your files and send it by e-Mail to the address `mhall@cs.waikato.ac.nz`. In addition, please hand a hardcopy of your report in to the computer science office **G1.15**.

Due date: Friday, 23rd March 2007: 5 P.M