

School of Computing

Team 4

Shares Tracker Android Application

Quality Assurance Report

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# Introduction

During this sprint the team has used various Agile techniques and methods to ensure the quality of the product being developed is of an acceptable standard to the development team as well as the customer.

# Team Standards

The team standards which were agreed for this sprint are:

Scrums will take place on a Monday, Tuesday,Wednesday and Friday morning at 9am.

We will use pair programming techniques whenever possible, to ensure specialist knowledge is not limited to one person and to ensure code is of the quality agreed at the start of this sprint.

When pair programming is not possible, any code which is written by a single person must be submitted to the Git repository where it must be reviewed by another team member.

Git hub will be used for version control and all edits must be submitted via Github.

Git hub will also be used to allow transparency on the progress the team is making, particularly on days where a scrum is not possible e.g Thursday.

In order to keep the format consistent throughout application we devised the following standards regarding code:

* All code must be indented correctly to easily show separate methods and loops
* Sensible and meaningful variable and method names should be used
* The opening curly bracket for a method should be on the line below the method declaration

# Record of Velocity

During the previous sprint the team agreed on a velocity of 6 due to a foreseeable team member absence bringing the team size down to three people. This velocity estimate proved to be accurate with the team achieving a velocity of 6. Due to this success and all four team members being available again, a velocity of 8 was agreed for this sprint.

**Update 7/11/12**

Due to severe technical issues the team no longer feels that a velocity of 8 can be achieved, and will seek a meeting with the client to discuss this. Very little progress can be made on the user stories until the technical issues are resolved.

**Update 9/11/12**

Technical issues have been resolved. The team agreed a more realistic velocity given the time remaining of this sprint is 2. This revised velocity has been accepted and agreed by the client, with the most important user story selected. If more progress than expected is made, one of the dropped user stories will be picked up and the velocity estimate increased.

# Refactoring

Before starting work on the user stories selected for this sprint, we refactored our code from the last sprint. The refactoring techniques that we used are (taken from <http://refactoring.com/catalog/index.html>) :

* Extract Class
* Extract Method
* Add Parameter
* Move Method
* Parameterize Method
* Rename Method
* Replace Parameter with Explicit Methods
* Substitute Algorithm
* Replace Data Value with Object

# Pair Programming

The team collectively decided to employ pair programming techniques as one method of quality assurance. By using pair programming techniques each pair is continually doing a peer review of their partners work and suggesting improvements.

We decided as a team that the continual peer review process involved in pair programming is a strong way to focus on the quality of the code being produced and a good way to remind each other of the standards we have set.

In practise we found that most of the time as pairs we were focusing on very small areas of our code. We decided that it would be beneficial to regularly take a moment to review our progress at a slightly wider level of scope (for example after writing a method, review how our method affects the code quality of the whole class).

Unfortunately within the team circumstances it hasn’t always proved practical to work in pairs all the time. There have been numerous technical difficulties as well as personal difficulties and as a team we had to look at alternative methods we could employ to make progress at times were team members were not available to work together.

In tackling these issues it was felt by all that using pair programming was the best practise where possible but that at times where it was not possible to work in pairs the next best thing we could do is perform peer review of each others work each time changes are made.

# Test Driven Development (TDD)

Where possible we took a TDD approach to the development during this sprint. However due to compatibility issues with JUnit and the Android development kit, we were unable to take a full TDD approach. When TDD was possible, the tests were written first and the code was then written to satisfy those tests. Where TDD could not be used, the code was written and then tests that could be were added in. Towards the end of the sprint after a review of test cases which were identified during black-box testing, a few tests were identified which were missing. These tests were then added in to improve the quality of the application by improving the reliability and robustness of the code.