CSIR - Distributed Application Manager
Project Management Document

101 Solutions

October 31, 2013

Version 1.0

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Change Log

Date	Version	Description	Done by
12 Sept	Version 0.1	Document Created	Jaco
12 Sept	Version 0.2	Added member profiles	101Solutions
12 Sept	Version 0.3	Added burndown chart	Jaco
12 Sept	Version 0.4	Added issue management content	Henko
12 Sept	Version 0.5	Outstanding tasks / risks	Henko
12 Sept	Version 0.6	Additions to software development process	Henko
13 Sept	Version 0.7	Grammar check	Jaco
24 Oktober	Version 0.8	Updated new burndown chart	Jaco
24 Oktober	Version 0.9	Additions to document	Henko
24 Oktober	Version 1.0	Added work distribution	Henko

Contents

1 Overview

1.1 Background

The CSIR is actively developing a distributed simulation framework that ties in with various other real systems and is used to exchange information between them. The client has a number of configurations of this system depending on the requirements of the client which can involve various external applications as well.

One of the issues the client has is to quickly distribute the latest build or configuration files of their software over various computers that are needed for an experiment. In some cases the same computers may be used for other experiments which mean each of the computers may need to have various builds and configuration options.

Another issue they experience is the running, stopping and restarting of the complete simulation. During a simulation it may be determined that certain configuration options may need to be changed and distributed to the affected machines, in which case either all or some components will need to be restarted which can become tedious and time consuming.

1.2 Business opportunity

The goal of our project is to develop an application which is able to maintain various build versions of the simulation framework and distribute these builds to certain designated machines that may be required for an experiment. The application will monitor system statistics of the various machines attached to an experiment and will have the ability to execute applications on those machines which will have different configuration options.

The application will consist of a master and slave component where the master is used to control the distribution of slaves. From the master one will be able to start an experiment which will run the relevant applications on all the necessary machines.

2 Software development process

The software development process that we have opted for is an agile based approach by which we are able to continually improve on the current state that the project is in. We strive to always have a working project in version control(Git) to ensure that if we need to show our progress, it is there.

Our framework for project management that we are using is scrum methodology which we use to ensure that our project stays on track. Our sprints take place on a week to week basis where we meet in the beginning of each week or during the weekend. During these meetings we discuss the current progress and what is to be done for the next week. Daily we also have small meetings if neccessary where we discuss project related work and problems that occur.

Another reason for choosing the agile approach is the continous change that it allows us to incoroporate. This allows us to change when the client changes the requirements and allows us to more easily adapt to that change.

3 Work distribution

Weekly we will have a meeting in order to refine what work needs to be done during that week. During the week the work will be started and at the end of the week we discuss what has been done and what still needs to be done. After discussing the tasks that needs to be done during a week, we decide who does what by either selecting it or have a task given to someone.

4 Member Profiles

4.1 Francois Germishuizen

Skills:

- General
  - Web Development
  - Database Design
  - Software Design
  - Particular interest in computer networks
- Programming and Markup Languages
  - C++
  - C#
  - Java
  - PHP
  - MySQL
  - Microsoft SQL Server
  - XML
  - XSLT
  - HTML
  - CSS
  - Javascript
  - Qt, learn't during project

Responsibilities:

- Continuous work on the main project

4.2 Jaco Swanepoel

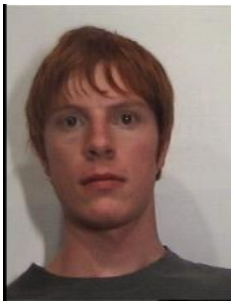
Skills:

- General
  - Organized
  - Detail Oriented
  - Reliable
  - Work well under pressure
- Programming Languages
  - C
  - C++
  - C#
  - Java
  - Basic Ruby
  - Delphi
  - Qt, learn't during project
- Web development
  - HTML5
  - CSS3
  - JavaScript
  - JSON
  - JQuery
  - Microsoft Sql Server
  - MySql
  - PHP
  - XML
  - Basic XSL
  - Basic DTD and Schema

Responsibilities:

- Continuous work on the main project
- Admin and client communications

4.3 Henko van Koesveld



Skills:

- General
  - Database Design and Setup as well as normalization
  - Software design with a focus on extensibility and maintenance
  - Experience in various programming languages
  - Hard working, dedicated
  - Patience in solving problems
  - Well experienced with HTML5 Web development
  - Past experience with Qt framework
- Programming and Markup Languages
  - C++
  - Qt
  - C#
  - Java
  - PHP
  - MySQL, Microsoft SQL Server
  - XML, XSLT, HTML, CSS, JSON, JQuery, Javascript
  - Knowledge in Assembly, Ruby and Delphi

Responsibilities:

- Continuous work on the main project
- Keep the team updated on some work that needs to be done

5 Project management tools

5.1 Qt Framework

The Qt framework allowed us to handle multiple project management issues. This allowed us to manage the project files much more easily if we had to do that ourself. A good example is the makefile which we did not have to write on our own since the qmake is able to do that for us.

5.2 File management

All files was handled by making use of a .pro file which is used in QT to use for building process. The files names are inside the .pro file under the respective title such as headers, source files, etc.

5.3 QT Creator

QT creator 2.7 allows one to make use of various version control systems including github.

5.4 Code quality

The Qt project management allows one to make use of a template which describes some of the code consistency that must be followed in order to keep the coding style similar. We followed the same coding style throughout the project and also documented thoroughly.

5.5 Version control system

We made use of GitHub as our version control system and that allowed us to ensure that there exist a single repository with our project. We always ensured that the project that is currently there is able to run.

6 Issue Management

This section describes how we report issues with the current software as it is and how we will go about resolving those issues.

6.1 Priorities

Each issue is assigned a priority whereby it is handled as such.

6.2 Tools

We first opted for a document based bug tracking software. We then later changed bugtracking to an online available form. We have changed to making use of FogBugz which allows us to have a 45 day free period where we can file any.

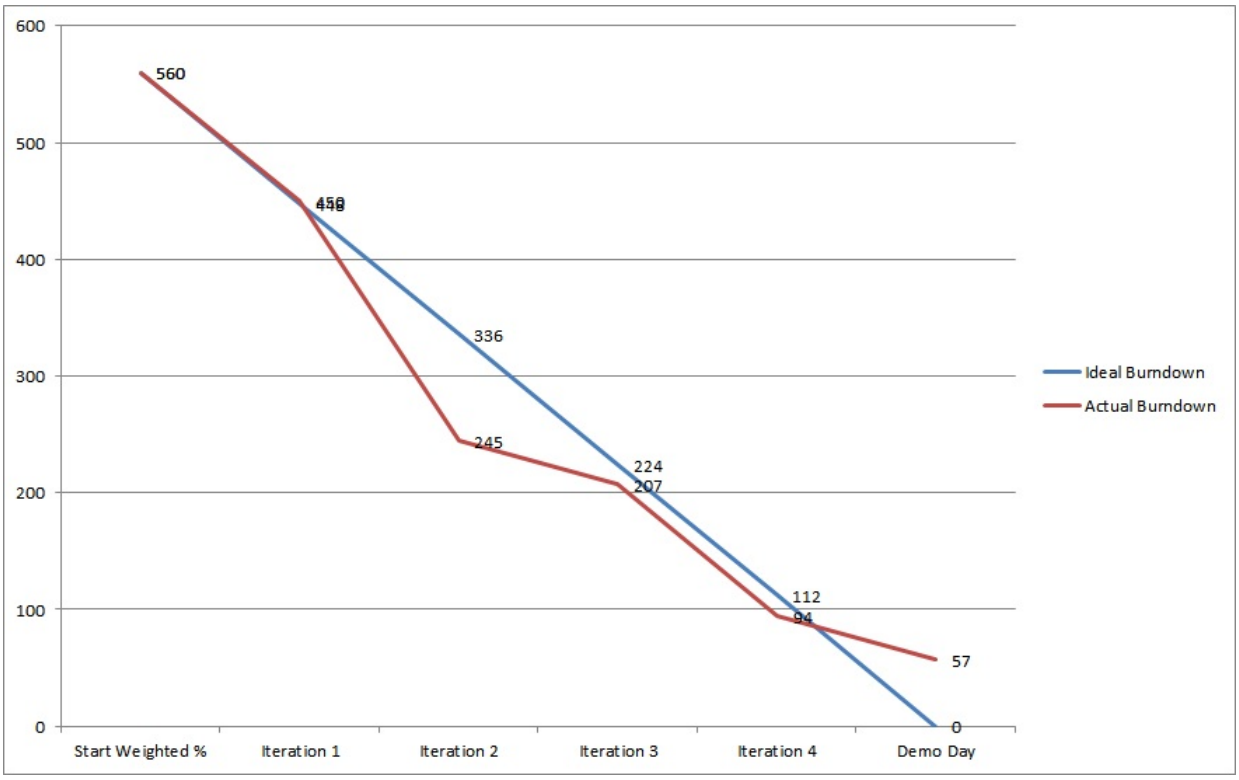
FogBugz allows us to set certain tasks that are to be done. One can set the priority of the task such as, scale from 4 to 6 for "Fix if time" where one can be able to fix it if there is time, and a scale of 1 to 3 for "Must Fix" where it must be fixed. The last one is 7 which means that it does not have to be fixed.

This website is not however only meant for the use in errors in code, but also things that must be changed and work that needs to be done. Work such as features that is still misssing, or even work that is still to be done. Other features that are used are the dates where we set out dates in which we believe that item should be done and handled.

Our link to the bug tracking and handling site is appman.fogbugz.com. That is where the majority of bug tracking and job tasks are tracked and handled. The goals we set out are prioritized according to how important that is. Thus we can easily see what is more important than other tasks.

7 Burndown Chart

Burndown chart as at Friday 6 September, iteration 3 demo



8 Outstanding tasks / risks

We are currently still working on the following things:

- Delete a simulation
- Edit simulation information