**Quality Management Plan**

PieChecker

Team Fruitcakes

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### 1. Scope and Purpose

This plan will provide a foundation for managing our software quality assurance activities for the course of the Pi Checker project. This document also identifies the QA responsibilities of our project team. The purpose of the quality plan document is to state the quality standard that the project should follow in order to meet the requirement specifications and be delivered on time.

### 2. Reference Documents

# Refer to the Project: Systems development course, the project’s quality plan has to follow the following reference document:

1. Design document, <http://bit.ly/1cKqNEL>

2. Trello task management, <https://trello.com/b/fEFTmiHm/team-fruitcakes>

3. User requirements document, <http://bit.ly/1cKsRfZ>

4. Bug Tracking System, [www.hostedredmine.com](http://www.hostedredmine.com)

### 3.Management

### 3.1 Organisation

The project is organised using scrum methodologies. The scrum members are seven first year students from Göteborg University. The product owner is a second year supervisor and the project course lecturer is a stakeholder. The group uses sprints of 14 days. The group meets on alternating Wednesdays to carry out the sprint review, sprint retrospective and sprint planning. The scrum members are responsible for evaluating and monitoring the the quality of the software, verifying problem solutions and producing documentation. The scrum members are also responsible for preparing and maintaining the SQAP.

### 3.2 Tasks

This SQAP covers the planning, implementation and test phases of the software lifecycle.

The tasks to be performed are allocated to the scrum members at the sprint planning meetings. The tasks to be performed can be found on a Trello board [here](https://trello.com/b/fEFTmiHm/team-fruitcakes). The acceptance criteria for each task can be found on the Trello board on the individual task cards. The Trello board also holds information on previous sprints, the product backlog and technical debt.

### 3.3 Roles and Responsibilities

The product owner is responsible for controlling the backlog and allocating tasks. They are also responsible for assessing whether a task is completed.

The scrum master is responsible for removing impediments for the members and maintaining the burndown charts.

The scrum members are responsible their individual tasks as allocated by the product owner at sprint planning.

### 4. Documentation

## 4.1 Minimum documentation requirements:

* Design document: The software requirements governing the development of our software products.
* User requirement: This document describes the requirements of the user.

## 4.2 Software requirements description:

PI checker, the essential product with the basic functionalities of users login, online broadcasting and photos taking for cooker. It can send constantly changed image through home internet to specific equipment such as a TV, computer or mobile phone.

The Pi should be able to:

* Sending a captured image every 5 seconds to the server, which the user then sees on either their computer screen, tablet, or mobile phone. It should also be able to send timestamps with images.
* Getting input via a probe which is connected to the raspberry pi.
* Setting a timer that signals when the food is ready, this timer is displayed on the screen.

The website should have:

* A login screen for the users.
* Homepage with a collage of images received from users. This would act as a “running” collage created by a gif creator, which allows many images to be displayed over time.
* Registration for users and their devices, allowing them to sign in and see the stream of their selected Pie Checker.
* The function to display captured images, temperature, and timers. The images and temperature comes from the connection from the server to the pi. While the timers will be set by the users, whom are alarmed when the timer countdown is finished.

### 5. Standards

* All testing will be carried out by persons that did not produce the item being tested. It will follow the requirements stated in the acceptance criteria.
* The documentation is based on the IEEE Standard document.
* The scrum methodology is used in development. The project is planned by using the sprint method, all tasks have to be divided into each sprint. The sprint review is done every 2 weeks and uses Burndown charts to see the overview of the time spent on our tasks in each sprint.

### 6. Software reviews and audits

We will be ensuring the quality of our software by following pre-determined acceptance criteria which is defined during each sprint. After a specific software module is completed a member of the group who was not involved in the development of the module will conduct testing.

### 7. Testing

The testing is done in 3 parts that follow the diagram in the design document. First, the network and hardware will be tested for faults. The server part has to be tested so that it gets the correct input from the pi through the network and our database also needs to be tested. The client part contains an interface in android and webpage, the webpage and android app have to show the data which is retrieved from the server. The data shown in the interface must display the quality as defined in the requirement specification document in part 4, reference document.

### 8. Problem reporting and corrective action

Impediments are reported at the daily scrum meetings to the scrum master. Problems and issues are reported and discussed at the sprint review and added to the backlog with the relevant priority. During sprints we can refer to the burndown chart to get an overview of the time spent on each task in the project and progress of the sprint.

In software development process and application always has bugs. The important thing, we have to track and fix them. We use Hosted Redmine bug tracking system as a tool to report bug, by creating an account in [www.hostedredmine.com](http://www.hostedredmine.com) .

### 9. Tools, techniques and methodologies

* Testing of the Android application will be carried out in Eclipse using an emulator and on a physical device.
* Each piece of software will be tested to ensure it complies with the acceptance criteria specified at the start of the sprint. Testing results are added to the relevant card on the Trello board.
* The Hosted Redmine homepage is used to tracks bugs.
* Within our project we make use of web technologies to communicate between our major components. We use UDP streams for our live video feeds, and TCP for our text communication.

**10. Media control**

Currently, our group has managed the documentation by using the google drive function where it is easy for all team members to access our documentation and where every member is able to edit the documentation if there is need. After the document is done and all members agree on the document, the pdf file is created and saved in a dropbox folder. Github is used to contain the code for the project, it is the tool that the team’s members can use to reach the other members code and submit their own part. To protect our code from unauthorized access, the documents and code are only shared to the team’s members. We have also chosen to use trello as secondary source of documentation, this is where our backlog and sprints are located.

**11.** **Records collection, maintenance, and retention**

The SQA document is maintained during the whole project period in our teams google drive folder. Having our document online prevents accidental deletion or corruption efficiently protecting our document.

### 12. Risk management

The scrum master is a person who manages the project’s risk. The burndown chart is used to manage the time spent on each task which means tasks that are not on schedule are easily spotted. To manage the risk, the scrum master has to update the sprint overview and manage to finish all tasks on time. The scrum master also manages and solves problems which may cause the project to fail. Testing is needed during the project development to make sure that the project reaches quality according to the requirements.

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