GNG1103 Group 9 : Deliverable G Prototyping Plan

1. **Purpose of the test**

   The purpose of this prototype and test is more or less the same as last week being to ensure that a number of fundamental components are functional before proceeding. A working raspberry pi with the appropriate libraries installed, a Ross user interface for future porting with the system, a working screen-portable camera intended for QR code scanning.

   The main focus for this week was going to be to practice with Ross software, so that for prototype 3 we have the background and knowledge with Ross to implement a working dashboard, and to swap the Pi zero to a newer Pi, as the Pi zero was lacking the computer power needed to run smoothly.

2. **Description of Test Objectives**

- Ensure that camera works and QR scanning still works with the new Pi
- Port ROSS interface with system, providing ability to manipulate camera remotely (ON/OFF)
- Through Ross Dashboard email SD card users upon late return

What exactly is being learned or communicated with the prototype

- How to use Ross dashboard
- How to store and recall data
- How to send automated emails

Expected possible results

- Fully functioning camera and QR Code reading ability still working
- More Ross knowledge
- Successful data storage and recall

How will these results be used to make decisions in the project

Criteria for test failure and success

Success: the camera is able to read the QR code and the Ross Dashboard general U.I is well received.

Failure: the camera is unable to detect or read the QR code, device malfunctions or has unexpected issues like overheating, or the U.I is received poorly.

3. **<u>Describe Prototype (Comprehensive or focused) and reason for selection of prototype method</u>**

   The current prototype is mostly comprehensive due to the number of components involved and general outlook of the test. The current prototype is almost the final representation of the project, as most of the work will be on the Ross Dashboard U.I.

   Explain testing process in detail to allow replication of test

   Position QR code in front of the camera, if camera successfully detects QR code, proceed to scan another QR code. In addition for the database to be tested it will be allowed to store and recall data, the reliability of this will be monitored for failure

   What information is being measured

   If the camera is able to read a QR code and can send the information to the ross dashboard for it to be accurately displayed on the user interface. The data that will be stored in the database will be monitored to ensure the database will continue to function.

   What modeling and research is required

   Continue to research how to use the ross software and how to connect it to the data being collected through the pi. Research is also needed on optimizing the pi to reduce the chances of failure.

   Next steps for the next prototype:

- Continue optimizing the Dashboard
- Continue working to optimize the text file database
- Improve reliability and make it user friendly
- Create a visually appealing and well laid out UI

In conclusion, with the second prototype we were unable to reach all of our goals for this week because other deadlines for different classes proved to be more important and time consuming. However, we feel better for the next few weeks because said classes are beginning to slow down, allowing us to focus on finishing the project for Design Day. The goal for prototype 3 is to have the new Pi scanner working with Ross dashboard as the bare minimum. We will achieve this goal by spending the next lab sections working from 7 to 10, as well as additional meetings if we needed.