Initial Plan

Android gym application utilizing near field communications (NFC)

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Module: CM0343 – 40 Credits

Project Description

I have been an avid gym user for many years and keeping track of progress is integral for ensuring my long term fitness goals are achieved. So I have chosen to create a lightweight gym application for android that is more efficient for keeping track of gym progress than current applications available utilizing near field communication technology (NFC).

Having used a variety of different gym applications on android to keep track of fitness goals and achievements I have noticed that during a lengthy workout the amount of time I spend either searching on the application for the exercise that I have completed or creating my own exercise on the app greatly Increases my time in the gym. I want to make using the app as seamless as possible to the end user so the time spent on the app has minimal impact on their routine. So I have proposed a new way to recording gym activity through the use of NFC. This proof of concept will ultimately have a gym where each piece of equipment will have its own individual NFC tag. Where a user can have the application running on their android NFC enabled phone and simply swipe next to the NFC tag on the equipment to add this as an entry to their gym diary. This means that the user would not need to search for the exercise on the application, as the NFC tag would provide the application with all the required information.

I will be using my knowledge of Java and MySQL to produce a proof of concept showing how an efficient android gym application utilizing NFC can be made.

Project Aims and Objectives

I will be breaking down this project into 4 key areas Research, Design, Implementation and Evaluation. This will ensure that the project is created with adequate research carried out beforehand. With a design phase to fully establish how the application should be developed.

Research

- Research existing gym applications, learn how they benefit the end user. Decide what needs to also be included into the gym application.
- Survey gym users to determine what they think should be included within an ideal gym application, this will help to show if there is a common item users feel that is missing from a gym application.
- Survey Gym instructors find out from a professional perspective what should be included.
- Research near field communication technology discover the best way to implement this.
- Research phones using NFC and NFC tag programming.
- How to implement databases MySQL in and android application.
- To gain a thorough understanding of android programming.

Design

- Establish Key functional requirements and non-key functional requirements.
- Produce the application with a user centered design approach.
- Design various ideas of how the application could look and present them to the end user. Keeping the end users involved throughout the process will ensure that the application fits key user requirements. Focus will be on Usability and Visibility.
- Produce paper prototypes to see how users react in a test environment.
- Use UML diagrams to show how the functionality within the application is intended to work.
- Ongoing user feedback will allow for design to be adjusted accordingly.
  Decide on all the features that the application will feature.

Interim Report 25%

The interim report will summarize the back ground study research and results found and give a detailed analysis of how I will approach the problem at hand using NFC. Here I will also investigate NFC tags to decide how they can be used I will be turning the research carried out into a viable design plan. Which will be kept in check with the end users contribution through the use of constant feedback to determine what features I should use for the design phase.

- Carrying out research on current applications.
- Surveying current gym users and staff.
- Research on NFC technology.
- Implementing databases MySQL within java.
- Begin design phase.
- Use story boards to get realistic feedback on what I would like to implement.
- Paper prototypes to determine colors to be used and how the application should look.

Final report 75%

Implementation – This will focus on implementing the design plan.

- Creation Of application.
- Database management.
- Adding new exercises.
- Creating features.
- Error checking.
- NFC integration.
- NFC tag programing.
- Production of working Prototype.
- Showcasing final product.

Evaluation- This will determine if my application fits my initial user requirements

- Accessing how the app works.
- How it fits user requirements.
- Evaluating its features.
- Pros and cons of using NFC technology.
- Problems within the project.
- Ideas on where the application could be expanded.
- Extended write up on the entire project.

Work Plan

My work plan shows a complete breakdown of the mile stones I have set myself for this project, I have not set work to be done during the holidays as I will allow this time to be used if the project is running behind schedule. Please see attached Gantt chart