

the FIRMA / Turku University of Applied Sciences

Requirements Specification

Tag system for hours tracking with a UI

theFIRMA



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2-13-2020

SPECIFICATION DOCUMENT

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1. Introduction

In theFIRMA, all interns and students mark their hours done weekly in an excel sheet. Which in this case, supervisors in the firm can't really check if those students/interns are being honest about their hours.

While thinking for an idea for my Bachelor's thesis, I came out with the idea of having an NFC system that counts the total hours for interns and students in theFIRMA.

This will be a tag in and out system that count automatically the hours done per day for each intern/student, and the sum of those hours will be calculated automatically in database and saved in a table.

2. Purpose of the project

This project will be made for the accuracy and the reliability of the hours tracking in theFIRMA.

As technology has been developed and made to serve human, thinking about tracking hours in an excel sheet sound basic, not safe and most importantly not accurate. That is why a system will be a good idea to replace the excel sheet method.

3. User Stories

- As a System Admin I can add each time a new intern/student so that the tag system can recognize the person.
- As an intern/student I should always carry with me my tag reader so I can be able to mark my sign in and out in the system.
- As a System Admin I should always help the firma members in case they faced difficulties with the system.

4. Non Functional Requirements

System requirement (SR):

- The system shall be running with an NFC model in Raspberry Pi 4.
- NFC tag ID for each user shall be added to the database.

Functional requirement (FR):

- LCD display shall show the current status of the tag while user sign in/out from the system.
- The system will turn ON green LED while user sign in with his tag.
- The system will turn ON red LED while user sign in with his tag.
- The system shall not let you log in/out only 10seconds after the previous action.
- The system shall identify the user by the tag ID.
- The system shall throw error message on LCD while tag ID not recognized.
- The system will turn ON yellow LED while tag ID not recognized.
- Any chagement in database data shall be reported and saved in a file.

Non-functional requirement (NFR):

- The system shall show green LED on when user sign in.
- The system shall show red LED on when user sign out.
- Any problem occurs in the system; the yellow LED shall be on.
- The system admin shall sign out users manually if they forgot to.
- The system admin shall correct sign out time manually if user forgot to sign out.
- The local server shall always be started for the system to fully work.