SenzerRoom Monitor (Working Title)

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# Declaration of Joint Authorship

# Approved Proposal

# Abstract

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# List of Illustrations

# Introduction

## The Technical Issue/Problem

## Why Solve It?

## Scope

## Objective

## Interesting Issue Discoveries

## Unique Approaches

# Project Description

## Requirements Specifications

### Software

There are a few different types of software required for the project. The programming languages we will be using are Java (Android), Python and C. For the operating system on the Raspberry Pi we will be using Raspbian included with programming IDEs compatible with python and C and XRDP for remote access. All the software and connections on the Raspberry Pi will be setup by Kyele. The programming aspect of retrieving data from each of the sensors will be done as follows; Kyele – AMG8833, Kogul – PCF8591, Samuel – BME280. To develop the android application the most recent version of Android Studio is required as well as emulators running multiple different versions of android, Kit-Kat (4.4) or higher. Most of the development work for the application will be completed by Kogul and Samuel. Lastly, a firebase database that is capable of holding records every 5 minutes, 24/7 for up to 1 month is required which will be designed, created, and maintained as a joint effort.

### Hardware

The hardware includes a few main aspects which are; 3 different breakout board sensors, a Raspberry pi 3 (the development platform), smartphone running Android Kit-Kat (4.4) or higher and a 3D printed enclosure. Some other hardware requirements are an 8GB or higher micro SD card, a micro USB power cable for use with Raspberry Pi 3, PCB materials for connecting the sensors to the development platform and wall mounting brackets. As per the hardware work breakdown, each member is responsible for their own sensor; Kyele – AMG8833, Kogul – PCF8591, Samuel – BME280. They each have to completely understand how it functions and how it interacts with the development platform. This includes how it sends data, how it is powered and maximum and minimum specifications it can handle. As per the rest of the hardware, Kyele is responsible for designing the PCB’s required for connecting the sensors to the development platform with the help Sam and Kogul with their knowledge of the other sensors. He is also responsible for maintaining the Raspbian OS installed on the Raspberry Pi 3, such as installing any newly introduced software and performing updates and security patches. Each team member will have complete access to the Raspbian Operating System as we will all need to work on the software connections to the sensors. Lastly, all team members will work together on designing the final 3D printed enclosure.

# Conclusion

# Recommendations

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