Project Proposal document:

Title: smart fridge converter

Abstract: the idea is to make a normal fridge into a smart fridge using various IOT devices.

Introduction: there are various smart home devices and at one end of the spectrum is the smart fridge whilst not the most expensive device it is on the upper level of smart devices and with this I want to mock up and research ways of converting your standard fridge into a smart fridge using different sensors.

Context:

This is to see if there is a cost-effective way of converting your standard fridge into a smart fridge for convenience and modernizing your home to a smart system I am focusing in on one smart home item that I feel could easily be converted with a few modifications and additions.

What are you going to do?

Primary aims:

My primary aim is to use sensors to track and monitor the

contents of the fridge and allow for stock to be tracked via an app mainly using a weight sensor or possible simulation through Arduino or raspberry pi sensors working together

Secondary aims

My secondary aims are focused on the functionality of the app by implementing such features as recommending shopping list items based on time they are in the fridge and to have a in built shopping list so you can keep track of what you have in the fridge so you don’t over stock on something you haven’t used yet and lastly I might implement the logging of items into the fridge for scanning barcodes.

Deliverables:

Technologies:

Software/Hardware: Digital Load Cell Weight Sensor HX711, raspberry pi, ESP and Arduino

Cloud/SDK: python, java, android studio

Related work:

Based on some research there are various diy components that can be used to change your fridge into a smart one but there seems to be a lack of connectivity between them with them all seemingly providing individual support

Timeline:

Weight sensors and fridge stock by Christmas and app integration in second semester

Summary:

In summary I want to build a smart fridge system that can monitor the contents of a fridge and be interfaced with via an app that can act as a hub for the functionality and the lack of a fix all for a smart fridge and the price to buy one with all the bells and whistles is why I wanted to try and make a unified system that once built should be easy to apply and set up as the average person may not have the required knowledge to build a system from scratch or simply might just want to take the easiest route and use something that is already built and just need to be installed.