Student Name : Cathal Henchy

Project Repo URL : <https://github.com/cathalohinse/Caonach>

Video (Overview 1) : <https://www.youtube.com/watch?v=EbL4rYfTio8>

Video (Overview 2) : <https://www.youtube.com/watch?v=qDTBP574RAE>

Video (Simulation) : <https://www.youtube.com/watch?v=zWSEbet7TJ8>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Grade Band | Combined Knowledge | Networking Technologies | IoT Solution | Communication |
| Base | Successful connection between RPI sensehat and a Smart Plug, demonstrates a basic understanding of Computer Networks. The inclusion of code that can perform calculations on the data gathered by the sensehat, demonstrates a basic understanding of Programming. | This solution includes the communication via WiFi, between a RPI and a Smart Plug (with a few intermediary devices in between). | An atmospheric sensor device (Sensehat) is used to measure temperature & humidity, and send commands to a smart plug based on calculation of the data measured. | [GitHub Repository](https://github.com/cathalohinse/Caonach) contains a descriptive Readme file, and I have also made two videos that provides an overview of the system, and a [video](https://www.youtube.com/watch?v=zWSEbet7TJ8) that demonstrates a simulation of the system. |
| Good | The Glitch app that I had began to set up used knowledge gained from ICT Skills I. The calculations performed on the data gathered in the monitor.py file in the RPI, utilised the skills attained from the Programming Fundamentals module. Several commands in the monitor.py file were learned from the Computer Systems portion of this module. | Communication takes place between the RPI and the smart plug, via my home WiFi router, which uses the 802.11g protocol (on the physical layer), and ip on the network layer (DHCP applies static ip addresses – with a very annoyingly short lease time – to both end devices). The data (application layer) is transported via http (which is encapsulated using TCP on the transport layer). The failed Firebase aspect, would have used websockets on the application layer, and probably udp on the transport layer. | An atmospheric sensor device (Sensehat) is used to measure temperature & humidity, and send commands to a smart plug based on calculation of the data measured. | [GitHub Repository](https://github.com/cathalohinse/Caonach) contains a descriptive Readme file, Powerpoint presentations and notpad versions of all attempted code that was written on my RPI and VM. And I have also made two videos that provides an overview of the system, and a [video](https://www.youtube.com/watch?v=zWSEbet7TJ8) that demonstrates a simulation of the system. |
| Excellent | I never got to demonstrate a deep knowledge in practise, throughout this project attempt. | Communication between the RPI and the Smart Plug via Wifi. The recording of real time data from a low level atmospheric sensor device (Sensehat) , to the cloud (firebase). | An atmospheric sensor device (Sensehat) is used to measure temperature & humidity, and send commands to a smart plug based on calculation of the data measured. | The excel file that outlines how the Device Trigger data was calculated is included in the [GitHub Repository](https://github.com/cathalohinse/Caonach). |
| Outstanding | I did not achieve this. | As per explanation outlined in ‘Good’. | This solution – even if fully realised – is not up to the standard of warranting a job offer. However, it is certainly a novel solution, as there is no such system in place that I’ve ever heard of, that is focused on maintaining vacant buildings in this manner. | I never got as far as writing a platform for this. I had wanted to have a very simple web app, that could have been very quickly and easily written up. I almost got a glitch app running that could be used to view the data gathered, but this is as close as I got. |