**Research Diary**

Some of the knowledge involving web development and other topics was already know through previous projects and school classes, this is why the research diary doesn’t cover all topics equally.

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| **Date** | **Observations, events, research** | **Reflections** | **Actions and next steps** |
| 4/7/17 | https://lifehacker.com/build-an-entire-home-automation-system-with-a-raspberry-1640844965 | Someone had made a home automation system to monitor if he has received mail, this wasn’t useful for my project but was the initial inspiration for me to look into home automation as a potential project. | I will look into home automation as a topic and see if I can find a project that interests me. |
| 4/7/17 | https://openhomeautomation.net/build-your-own-home-automation-system-technologies | This was a technical site that I found when looking for topics which influenced me to look into web controlled automation. | I will look into controlling the device via web apps. |
| 9/7/17 | https://www.pinterest.co.uk/pin/365847169701834629/ | These are simply some images of a channel relay that was controlled by a raspberry pi. | I will use a channel relay in my project as after seeing these I feel they fit the project well. I might want to automate curtains or something similar as this looks really exciting and futuristic in iron man. |
| 11/7/17 | http://www.instructables.com/id/Web-Controlled-8-Channel-Powerstrip/ | This was a technical tutorial on how to configure the Pi with the channel relay. | I will save this tutorial for when I start the build. |
| 19/7/17 | https://www.ebay.co.uk/itm/5V-or-12V-1-2-4-8-16-Channel-Relay-Module-Arduino-Raspberry-PI-ARM-AVR-DSP-PIC/262722739443?hash=item3d2b7edcf3:m:mewvpRdfNf5lyx157fF9xGQ | Relay module used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/RASPBERRY-Pi-3-Model-B-Plus-1-4GHz-Quad-Core-64Bit-1GB-RAM-2018-Model/173228876068?epid=6017169412&hash=item28553ee124:g:UhEAAOSwXXJatOGM | The actual Pi used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/Solderless-Prototype-Breadboard-Various-Sizes-Optional-65x-Jumper-Wires/121353347660?hash=item1c4139224c:m:mCCAPb8yb1A8x8AAWw8gnVw | Breadboard used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/100-x-5mm-WHITE-LED-Clear-Casing-ideal-for-breadboard-prototyping/252324359966?epid=2101043343&hash=item3abfb42f1e:g:ERMAAOSwiBJZ6PQX | Leds used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/1280pcs-Metal-Film-Resistors-Assortment-Kit-Set-64-Values-1-10M-ohm-1-4W-UK/182762475877?hash=item2a8d7e1165:g:M4YAAOSwPgxVSHyp | Resistors used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/Adjustable-4W-LED-Reading-Desk-Lamp-Black-White-Office-Lighting-Touch-Dimmer/372257190075?epid=1538832546&hash=item56ac41f0bb:m:mSzqycSsL7mrf566bF3tLIw | A lamp used in build |  |
| 19/7/17 | https://www.ebay.co.uk/itm/45-in-1-Precision-Torx-Screw-Driver-Set-Repair-Tweezers-Phone-Laptop-Tools-Kit/202028002439?epid=2193048672&hash=item2f09ceac87:g:oXQAAOSw0HFZmbuZ | A screwdriver set used in build |  |
| 2/8/17 | https://www.youtube.com/watch?v=oaf\_zQcrg7g | A step by step tutorial for setting up the relay with the Pi, in video form | Look to create the pi script |
| 2/8/17 | https://www.youtube.com/watch?v=xc1daIb1LVc | An interesting video on the scalability of my project, this was a relay being used to control a campus security system. | Not particularly relevant but was motivating to see it had real life uses. |
| 2/8/17 | https://www.youtube.com/watch?v=m83UdW67hVY | Again, like above. Someone configured 32 relays to automate power going to machinery. | Not particularly relevant but was motivating to see it had real life uses. |
| 2/8/17 | https://www.youtube.com/watch?v=TFt480sxNWg | An introduction into SSH, this was new to me and I found it interesting to see how I could remotely access the Pi | I will look into Putty |
| 5/8/17 | https://pinout.xyz/ | This is a website that shows what to connect to each GPIO pin on the Pi. | I will use this when connecting and building the device. |
| 5/8/17 | https://www.raspberrypi.org/documentation/usage/gpio/ | GPIO documentation when researching what resistors I would need to use. | I will now move onto the build phase. |
| 9/8/17 | https://stackoverflow.com/questions/29872830/accessing-wamp-server-from-external-ip-address | I followed this tutorial as it allowed me to give access to my website from anywhere in the world by hosting a site on my laptop and not having to pay for web hosting. | Move onto next stage in Gantt chart. |
| 16/8/17 | https://www.youtube.com/watch?v=QSIPNhOiMoE | This is a video explaining IoT and its benefits, concepts and potential issues. | This will be used in my writeup when explaining IoT |
| 16/8/17 | https://www.youtube.com/watch?v=QaTIt1C5R-M | Ted talk by an industry professional. Mostly explaining the severe consequences of rushing into an IoT world. | This will be used in my writeup when explaining IoT |
| 16/8/17 | https://www.youtube.com/watch?v=QL-6PdiDTeo | Top 10 IoT projects, helpful for inspiring ‘future improvements’ | This will be used in my writeup when explaining IoT |

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| 16/8/17 | https://portforward.com/virgin-media/hub-3.0/ | A tutorial I followed to allow access to the site from anywhere in the world | I will follow it and then write up how I did it in the report |
| 13/9/17 | https://stackoverflow.com/questions/4115719/easy-way-to-password-protect-php-page/4230885 | This is a tutorial I followed when password protecting my website | I will write up how I made the site and why it was important to protect the site. |
| 26/1/18 | http://wittcom.com/how-to-plan-a-technical-presentation/ | As I have never presented before, I had to research what makes a good presentation. Especially one that the audience will not understand very easily. | I will keep this handy when creating the presentation, so I can refer to it as I write. |
| 12/7/17 | https://www.smartsheet.com/blog/gantt-chart-excel | This was a Gantt chart tutorial to make a chart in excel. | I will now create the Gantt chart. |
| 25/10/17 | https://shaunakelly.com/word/layout/glossary.html | As it was a technical subject and the marker would be non-specialist I looked up a glossary formatting guide for use when writing a glossary. | I will use this when creating the glossary, this is my next step. |
| 27/10/17 | http://www.sussex.ac.uk/ei/internal/forstudents/engineeringdesign/studyguides/techreportwriting | This is another guide on how to write a report for a technical subject. | I will now make improvements to the report. |
| 26/1/17 | https://www.quickbase.com/blog/6-ways-to-clearly-communicate-complex-information | This is a guide that outlines the 6 main ways you can communicate a complex topic to a non-specialist audience effectively. | I will use this when making improvements to my presentation. |