**Weekly Report/Blog**

**Week 1 October 7-11th 2019**

We’ve meet with the supervisor and we discussed our potential project idea and the supervisor said that to do more research on the area that we are working for the group project.

Our Project idea would be network based camera surveillance systems and car plate recognition. The number plate recognition will be tricky as the steps are long but doable if I follow the steps carefully and take my time to go through the steps carefully. There are two ways to set up number plate recognition either with node red or without node red. OpenALPR needs to be installed if I chose either way to install. OpenALPR is an automatic number-plate recognition library written in C++. The software is distributed in both a commercial and open source version and scans the number plates using any cameras and shows the details on the screen. Once the OpenALPR is installed properly on the Pi then

We need a least two raspberry pi one for Camera Surveillance system and another with car plate recognition. We need at least 2 or more raspberry Pi cameras. Raspberry Pi v2 camera module for recognising car plate and webcam or Raspberry Pi V2 cameras for surveillance camera system.

When the camera surveillance is set up then we need to create a website to host the camera live footage then use a cloud services to host the website publicly so that the boss can see the footage while out of work.

**Number Plate Recognition Scenario**

When a car arrives at the gate, the raspberry pi will take a picture and load the picture of the number plate onto the screen and tell the car model, Number Plate, and the person who owns the car. Then the information can go to the Boss phone to notify that this person as arrived at the driveaway/carpark. Pushover API is used to push information from the raspberry pi to the someone’s/boss smartphone/sets notification on the phone. Our plan is to start on this number plate recognition after Christmas.

**Week 2 October 14th-18th 2019**

We meet up with our supervisor Veronica in the project room to discuss what equipment do we need for our project. Our group said that we need getting starting on the equipment such as routers and switches and build a basic network and expand on it. Our group said that we couldn’t do as much as research if we start building a basic network and do some add ons. Veronica said to list the equipment we need for the project. Sean wrote down the list of equipment we need for the project. And later that week the group went to the project and picked routers and switches we need for the project. When we got our routers, we noticed that the serial ports we’re missing on the two out of three routers and we emailed to lecturer Paul Flynn on the serial ports and he replied to us that he will sort out the serial ports. We also got one PC for our project.

**Week 3 October 21st – 25th 2019**

We held a meeting with Supervisor Veronica as the group discussed on when we will start on the project. Veronica said to get starting on the barebones on the project as soon as possible. Our group discussed the equipment we got from the project room last week. Our group said we need more equipment for our project such as RJ45 Blue console cables and ethernet cables. Our plan is to build a basic network and getting the surveillance camera up and running and show live feed of cameras on the website till December when we have our project meeting with the board. Oisin bought raspberry Pi camera module from Amazon. Valentas said that he will set up raspberry pi camera and make a website to show live feed of the camera. Our group decided to start working with the project around first week of November as we are having lots of assignments during this week and we have to order the equipment we need from amazon. We agreed to start our project when we come back from direct learning week (4th November come back to college) every Thursdays. Veronica said she will meet us on Thursdays to see the progress of the project.

**Week 4 November 4th – 8th 2019**

After the group came back from direct learning week. We emailed the list of equipment we still need for the project to supervisor veronica, then she passed this list of equipment needed to Paul Flynn. We got most of the equipment needed except for DVI-I to the VGA cable. We as a group had a look at the equipment, we got such as routers, PC and switches. We also checked what ports such as checking serial ports on the 3 routers which we can connect to another router as part of the frame relay switch. We also check the two PC that we got. Neither of the two PCs are not working. With one PC, the Ram was placed in the wrong slots and that’s why the one of the PC is not booting up. After we fixed the problem with the RAM slots, we decided to wipe all the operating systems that the two PCs had before and install fresh version of Windows Server 2016 r2 with one Pc and another PC with Windows 10 Pro. This process took a long time as it has to be downloaded, and the USB has to be converted to NTFS in order to turn the USB into a boot able flash drive allow the IOS image to be copied onto the PC. We installed windows server 2016 r2 on one PC and windows 10 pro on another PC. We completed reset the routers and switches using the Write erase and reload command using tera term software. We completely reset the 3 routers and 2 switches. When we on the routers and switches, it took around 6-8 minutes to boot up because the routers and switches hasn’t been started in a long time then the routers and switches went through a cold start. Valentas set up raspberry Pi camera to work with the raspberry pi. With our own money we purchased 5 ethernet cables, RJ45 console with USB in order to config routers and switches and USB camera for the PI. All together it cost us 55 euro.