**FYP Abstract**

**Student Name:** Payam Ismaili

**Supervisor:** Manuel Caballero

**Project Title:** An exploratory study of the security for IoT devices

**Research Question:** what is the best security solution for IoT based smart homes?

**Project abstract:**

Internet of things (IoT) is one of the promising technologies that has attracted a lot of attention in the industrial field over the years. The number of Internet-connected devices that have a digital identity is increasing day by day. But the biggest concern after the entry of objects into private homes is the issue of privacy and information security. Data insecurity at all levels of the IoT model is the hottest research topic. Challenges are constantly increasing, and solutions must be constantly improving. The goal of this project is to analyse security and privacy issues within the IOT based smart home and come up with the security solutions data confidentiality, data integrity, and data availability.

This project’s core topic is about Critical Security Issues of the IoT based smart home, in order to implement a secure smart home, we will focus on the following on the steps:

* Identifying the hardware components security issues of IoT smart home (Physical Layer).
* Identifying the network side security issues of IoT smart home. (Transportation Layer).
* Identifying threats and issues related to the application layer.
* Identify IoT protocols and using strong encryption technology for secure communication within the IoT ecosystem.
* For the existing smart home, we can conduct an online survey to ask some questions from householders to determine how secure their smart home is.

**Technology used:**

Lora technology, Wi-Fi technology, Wireshark, Bluetooth technology, Sensors, GitHub, Jira, Visio,