

# Report for the Course on Cyber-Physical Systems and IoT Security

## *Authentication of IoT Device and IoT Server Using Secure Vaults*

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### 1. Objective

### 2. System Setup

This project aims to implement the authentication protocol. The decision on the programming language to use to implement the simulator was based on some observations. We don't need the efficiency of C in such simulation. IoT devices offer low computational power, and although a real implementation would require a fast and versatile programming language (with direct access to the memory), for the sake of the demonstration we can use a modern language, although with limited memory management. The choice was then to adopt Kotlin, because it offers modern commodities and features, and it is 100% compatible with the well established Java Runtime Environment.

### 3. Experiments

An IoT system is composed by three classes of devices:

- IoT device: its purpose is to collect data from sensors, and send them to the server;
- Server: collects data from all the devices;
- user interface: provides the user a configurable environment to interact with the system.

The simulator is developed as follows.

### 4. Results and Discussion

### 5. Conclusions

### Bibliography