Manouba University

National School of Computer Science

End of Study Project Specifications

Subject

Web Application for Audit Automation of the IoT Standards
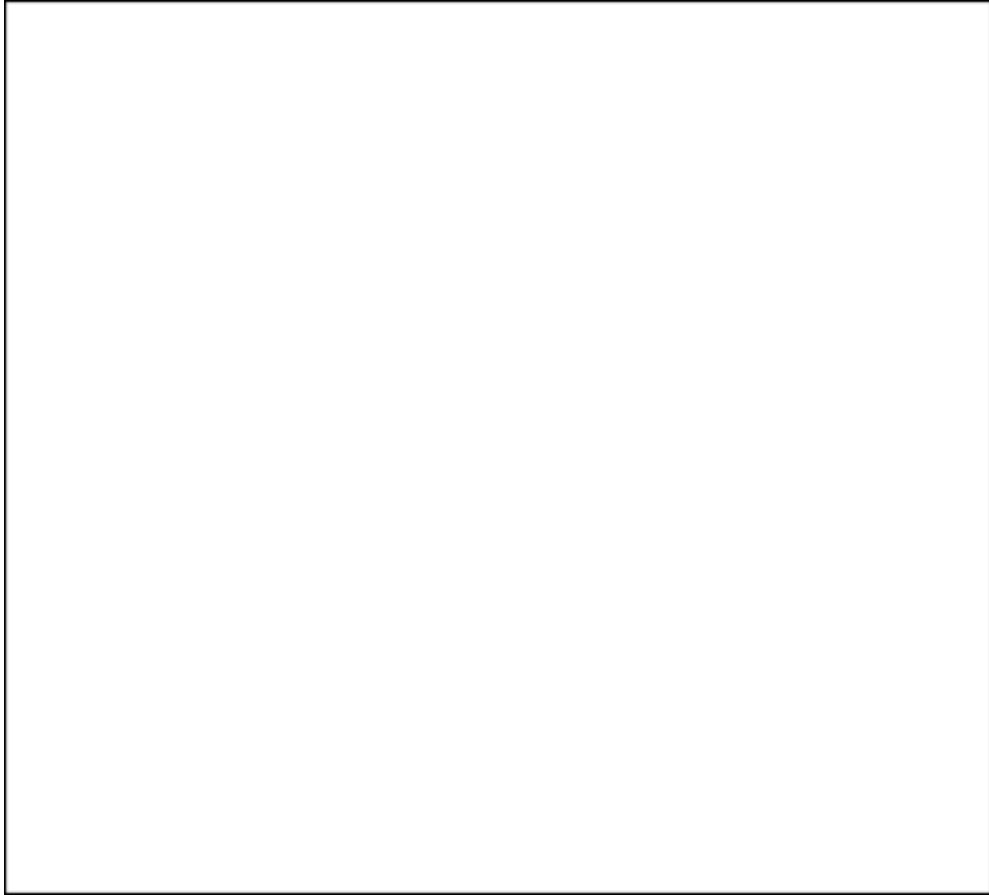
Produced by :

MHAMDI Eya

Supervised by:

Mr.Hamza Ben Ammar

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SIGNATURE OF SUPERVISOR:

Specifications

1. General framework of the project :

With so many benefits of technology, it can be hard to believe that potential threats lurk behind every device and platform. Yet, despite society's positive perception of modern advances, the cybersecurity threats presented by modern technology are a real danger.
The steady increase in cybercrime highlights the flaws in the devices and services we have become dependent on. This concern forces us to ask ourselves how we can be protected from attacks , why it is essential and what we need to learn about it.
In this topic we are going to create a web application to automate the audit of IoT standards to ensure the security of a device.

2. Problematic:

Do you spend sleepless nights worrying about your company's security ? Are you worried that your devices and networks are exposed to threats ? Do you want to know more about IoT attacks ?

Many business owners wonder what an IoT attack is, businesses are becoming more and more reliant on technology.

An IoT attack is a compromise of an Internet of Things (IoT) system. This can include devices, networks, data and users. A cybercriminal can launch an IoT attack to steal information. They can take control of an automated or IoT system, and disable it. So our problem here is how to minimize the risk of attack as much as possible.

3. Objective :

My work consists of developing a web application that will allow a user to automate the security audit based on IoT standards,by providing him a questionnaire to collect all sorts of information about the device, to test and ensure the maximum possible security level of a device. This application will allow users to generate the security test result report and consult the compliance to the applied standards.

4. Functional Requirements :

- the application shall allow the user to audit his device

- the application shall allow the user to consult reached security level

- the application shall allow the user to consult the finding and the recommendations related to it

- the application shall allow the user to understand an consult the test description

- the application shall allow the user to generate report for his project

- the application shall allow the user to export report with a specific format

- the application shall allow the user to create new project

- the application shall allow the user to enter device information and choose the standard to use

- the application shall allow the user to edit his projects

- the application shall allow the user to display his informations

- the application shall allow the user to change his password

- the application shall allow the user to consult his projects

- the application shall allow the admin to manage users (add, delete, …)

5. Non-Functional Requirements :

- Availability : " When do you want to be able to utilize this process?",it describes how likely the system is accessible for a user at a given point in time.

- Performance : "How many times you will use this process per hour?" ,set out the numerical indications measuring the maximum or optimum possibilities of a hardware, software, system or technical process to perform a given task.

- Security : "The system must run safely by applying reasonable security requirements.",encompasses all facets of accessing information assets. From authentication, to software updates, anti-virus protection, and modifications - security is a key component to a device operating at its optimum.

- Possibility of evolution : it is interesting that the application ensures a power of evolution, of development and improvement over time according to the needs of the user.

6. Work environment :

➔ Hardware environment :

PC Brand :	RAM :	Hard Disk :	Processor :
HP	12Go	1To	Intel(R) Core(TM) i5-8300H CPU @ 2.30GHz 2.30 GHz

➔ Software environment :

React JS as a Front-end library, which allows the creation of Web applications using HTML,JavaScript and CSS.

ReactJS is extremely intuitive to work with and provides interactivity to the layout of any UI. Plus, it enables fast and quality assured application development that in turn saves tome for both - clients and developers.

Node JS , that might be the best choice for Back-end development as it has all the above features which is very great in delivering excellent performance. It is built on a single-threaded, non-blocking event loop, Google V8 engine and low-level API.

Express JS ,Express. js is a free and open-source web application framework for Node. js. It is used for designing and building web applications quickly and easily.

MongoDB, is a document database used to build highly available and scalable internet applications. With its flexible schema approach, it's popular with development teams using agile methodologies.

7.Organizational chart