|  |
| --- |
| Report  GROUP 6 |

Class: I02

Date: November 2021

Version: 1.3

Student Number: 4538528

|  |
| --- |
|  |
|  |

**Vasile Mihai Glodici**

**https://git.fhict.nl/I485522/ieo-group-6.git**



**Revision Table**

|  |  |
| --- | --- |
| **Version**  **1** | **Created layout and design** |
| **Version 1.1** | **Added text in each paragraph** |
| **Version 1.2** | **Changed hardware specs of the router**  **Removed inactive group members** |
| **Version 1.3** | **Fixed some Typos and added Group 8 to the Developer’s Section** |
| **Version 1.4** |  |
| **Version 1.5** |  |

**T****able of contents**

[**Revision Table** 2.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077492)

[**Introduction** 4.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077493)

[**Project Definition** 4.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077494)

[**Hardware Used 7**.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077495)

[**Hardware Specification 7**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077496)

[**Project Background** 5.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077497)

[**Problem Definition** 5.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077498)

[**Project Goal** 5.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077499)

[**Expected Result 6**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077500)

[**Way of working 6**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077502)

[**Scope** 6.](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077503)

[**Project Structure 8**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077504)

[**Development Team 8**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077505)

[**Tutor 9**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077506)

[**Risk Assessment 9**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077507)

[**Deliverables 10**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077508)

[**Planning 11**](file:///C:\Users\vasil\Downloads\Project_Plan_Group_1.docx#_Toc89077509)

**Introduction**

I am Group 6 from class I02 and Vasile Mihai Glodici is my name. I am a cyber security enthusiast, looking to practice my infrastructure skills. I think that the group project will provide me with the networking information needed to pursue a career in this field.

**Project Definition**

Student Complex is the name of the project, and our team oversees setting up the network for my flat.

All the other networks of other residences, including mine, will be linked together.

**Project Background**

Each apartment in the complex will have its own private network and router, which will be accessible to renters via cable, and all apartments will be connected so that residents may connect to one another.

**Problem Definition**

- Setting up a successful and completely operational link with other residences.

- Enabling students in other “rooms” to visit our website.

**Project Goal**

Our goal is to create a scalable, and user-friendly network while also improving our networking skills.

**Expected Result**

Every apartment should have its own LAN (Local Area Network), which contains a router and nodes who are wired into the router. An apartment's network should have its own representative webserver, which hosts a very simple website with the tenants' information and all the network's available services. There must be an ad blocker installed. Every apartment should be able to communicate with one another and view one other's websites. Because there is only one internet connection for the entire complex, all the flats must share it. The infrastructure's security must be assessed and certified. This means that the network must be scalable and that additional services can be added to the network.

**Way of working**

There is a theory session once a week, and we are supposed to apply what we learn in the project. There will also be meetings between our group on a weekly basis. These tutor meetings will help us with unsolved difficulties and will be a way to measure our group’s progress.

**Scope**

This project has several different scopes. This is what is included in the project's scope. The implementation of the requested solution, as well as the delivery of all project documents.

**Hardware**

A router from TP-link is being used as the hardware. The model number is TL-WR841N, and the details are provided below. For the client devices, we're using a Raspberry Pi 4 with the Raspberry Pi OS operating system. We have 5x Ethernet cables as well as power supply for both the router and the Raspberry Pi 4.

**Hardware Specification**

**Router:**

* *Processor Single-Core CPU*
* *Ethernet Ports 1× 10/100 Mbps WAN Port*
* *4× 10/100 Mbps LAN Ports*
* *Power 9 V ⎓ 0.6 A*

**Client Device:**

* *Software*
* *-Raspberry pi OS.*
* *Memory*
* *2 GB LPDDR4-3200 SDRAM.*
* *CPU*
* *-Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit 1.5 GHz.*
* *Wi-Fi chipset:*
* *-2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0.*
* *Graphics chipset*
* *-OpenGL ES*
* *-H.265 (4kp60 decode), H264 (1080p60 decode, 1080p30 encode)*
* *-2 x micro-HDMI ports (up to 4kp60 supported)*

**Cables:**

* *Type*
* *-Cat 5*
* *Bandwidth*
* *100MHz*
* *Speed*
* *Range from 10Mbps to a maximum of 100Mbps.*
* *Size (3M)*

**Power Supply**

* *Router power supply*
* *-Ac adaptor*
* *-Input: 200-240V ~50/60Hz 0.4 A*
* *Device power supply*
* *-Ac adaptor*
* *-Input: 100-240 ~ 50/60Hz 0.5 A*

**Project Structure**

Our group will receive assistance and will report to a higher authority, the tutor.

On a weekly basis, the tutor will guide us and check our projects.

**Development Team**

I, Mihai, am working alone on this project. However, I can work alongside Group 8, as agreed with the teacher.

**Tutor**

Our instructor will assist our group with the assignment by holding weekly sessions and being accessible to answer any questions we may have.

**Risk Assessment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Risks:** | **Notes:** | **Priority:** | **Risk Level:** |
| Not able to connect to other apartments | Other apartments can have conflicting settings | High | High |
| DHCP issues | Inexperience in setting it up | Medium | Low |
| Not having enough time | Inexperience with group work | Low | High |

**Deliverables**

On this page, the deliverables will be specified in a table:

|  |  |
| --- | --- |
| **Week:** | **Deliverables:** |
| 13 | Project Plan V1  5x2m Network Cable  Prepared GIT repository |
| 14 | Project Plan Final Version  Design Document V1  Raspberry Pi (With adblocker using Pi-hole)  LAN with internal configuration |
| 15 | Design Document V2  Local webserver setup and configurations  LAN with internal and external configurations |
| 16 | Design Document Final Version  Hosted website on the local server  IoT service |
| 17 | Test Report  Extra Services |
| 18 | Demo  Presentation |

**Planning**

This will be our planning for the upcoming weeks.

|  |  |  |  |
| --- | --- | --- | --- |
| **Week:** | **Task name:** | **Est. duration in minutes:** | **Deadline:** |
| 13 | Make the project plan and investigate required hardware and software | 150 | 3-12-2021 |
| 14 | Start on the Design Document | 120 | 10-12-2021 |
| Finalize Project Plan | 75 |
| Start building the network (LAN with internal configurations) | 240 |
| 15 | Finalize the Design Document | 90 | 17-12-2021 |
| Local Webserver setup | 120 |
| Expand the LAN with external configurations | 120 |
| 16 | Finalize Design Document | 90 | 24-12-2021 |
| Hosted website on the local server | 120 |
| IoT Service | 90 |
| 17 | Make the test report | 160 | 14-01-2021 |
| Extra services | 45 |
| 18 | Demo & Presentation | 45 | 21-01-2021 |