Near East University

Yakın Doğu Üniversitesi, Lefkoşa KKTC

Near East University

Department of Computer Engineering

Department of Engineering

Summer Training II

COM 300

Summer Practice Report

(2017-2018) SUMMER

Submitted To:

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Name and Surname of Student

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Year and Number

$4^{th} year$, 20144708

Practice (COM300)

Name and Address of Firm or Organization

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Start date and End date of Practice

3/7/2017 – 11/8/2017

Submission Date of Report

30/10/2017

Report Graded by

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Total Working Days:

20 days

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1. INTRODUCTION

The summer practice in the working field has many purposes and it was so much beneficial for me and carried out a lot of new information and I was able there to translate what I learned in the university courses in working field, combining this knowledge in the field makes the student realize that numbers and field are correlated.

My training was about 20 working days in GIS Company working and helping and I gain experience in networking connection and servers.

Most of the work I did summarized by site work part 100%. In site work, I learn how to connect 3M wires and make local network connection and add/fix patch panel and add CISCO rand and servers and I learn how to add wireless connection between two building and setup cabin network. This type of work gives me a partial experience I can develop it.

This work shows me how the working will be in future and what I need to learn, also let me select which field I like to study and work with it in future. I am grateful to Near East University and GIS Company that give me this opportunity to tanning before graduate.

In this report, I'll talk about all the works that I have done in the 20 days during internship summer practice.

2. GLOBAL INTEGRATED SOLUTIONS CO. LTD

2.1. COMPANY OVERVIEW

Through its partnerships with international leading industry leader vendors such as HP, Toshiba, Microsoft, Nod32, Kaspersky, Invo. Networks, these partnerships make GIS a leader in providing the latest IT turnkey solutions.

2.2. MISSION

To provide state of the art IT solutions and fulfill today’s largest enterprise needs in security and Quality of Service IT Infrastructures.

2.3. LOCATION AND FACILITIES

Global Integrated Solutions office is located in Saida, Al Makased Bld., 8th Floor.

2.4. BUSINESS SOLUTIONS AND STRATEGY

GIS has incorporated the following four business strategies:

- Design, setup, manage and maintain wired, wireless and Broadband over power IP networks.
- Provide turnkey bandwidth management and Quality of Service solutions to local and wide area networks.
- Setup, manage and maintain IT security solutions for local and wide area networks as well as provide risk and vulnerability assessment.
- Design and implement IP wireless and BoPL (Broadband over power LAN) networks.

2.5. ACCOMPLISHED PROJECTS

Here some of GIS finished and delivered projects:

Networking Projects:

- 6 UNRWA Schools project: Network infrastructure (Cables installation, Termination, Testing, Labeling) including fiber optic backbone, CISCO Voice over IP Call Manager Express using PoE Technology.
- UNRWA North Health Center Project: Network infrastructure (Cables installation, Termination, Testing, Labeling) including fiber optic backbone.
- Jieh Hospital: Network infrastructure (Cables installation, Termination, Testing, Labeling), Server and Domain Controller setup and installation.
- Lebanese German University (Tyre): Network infrastructure (Cables installation, Termination, Testing, Labeling), Server and Domain Controller setup and installation.
- Warba Inc. (Beirut, Downtown): Two Servers setup and installation including Active Directory, DNS, DHCP with VPN Connection to Iraq Branch.
- Palestine Today TV Station: Servers, Active Directory, DNS, DHCP, Staff Training, CISCO Firewall System.
- Software and Systems:

- National Evangelical Institute for Girls and Boys School: School Management System.
- Daher Mall: Stock Management System.
- Unite Lebanon Youth Project (ULYP): Student Scholarship Management System.
- Palestinian Embassy (PESSMS): Student Scholarship Management System.
- Afal Aluminum Systems Co. Ltd. (KSA): Accounting and Stock Management System.

Figure (1): Logo of GIS Company

2.6. COMPETITIVE ADVANTAGES

GIS's principal competitive strengths are:

- Integration: Strong ability to integrate different solutions from various manufacturers in order to provide a customized state of the art turnkey IT solution.
- Advanced technology: Partnerships with multinational IT leading companies that allow the team to be always up to date with the latest technologies.
- Flexibility: The ability and flexibility to develop any customized non-existing solution in order to fulfill the needs of any existing project.
- Strong company culture: GIS has a strong and vibrant service-oriented company culture which is built around its five key-values: team work, integrity, fun, passion and employee rewarding.
- Expert Management team: GIS management team will be composed of individuals that have significant professional experience in their relevant fields.

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3. ADD A NETWORK CABLE CONNECTION

During my training days we setup many network points (around 80 network point) since, it basic thing in networking field and same process in all building and company's (offices). But the ways of setting up the network cable change as customer demands, and it may be fast as taking few minutes or it can be complicated and take long time.

In my first day at work, the technical workers in GIS company and me, faced difficulty in setup the network cable connection for company offices. Since, owner demands to pass the cables throw old wood cable box in corner of room. In addition, we used drill to makes holes in wood box to setup the RJ45-Jack Type-A with external socket.

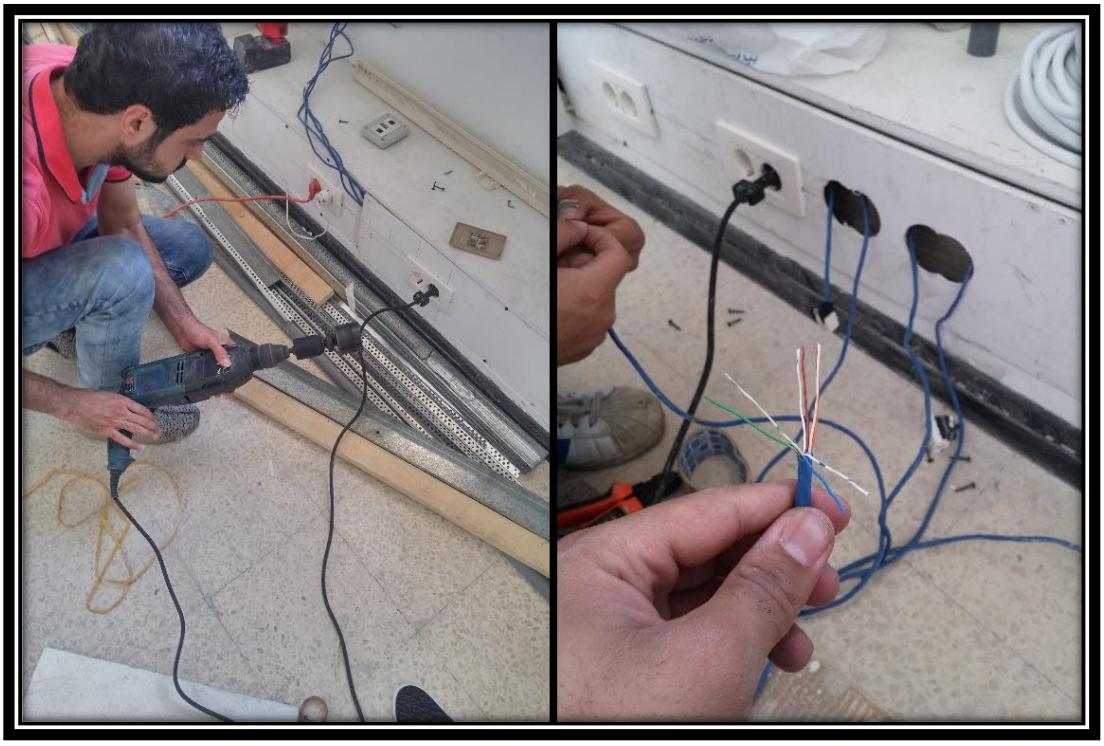

Figure (2): Create holes and pass cable network

We spend 2 days respectively to finish it up. Since, we setup 17 network point connected with main local switches room. After we finish connecting we test them one by one using Tester and numbering them, and cover all 3M wires with cache cable and support it by using screws with "Pozidriv head".

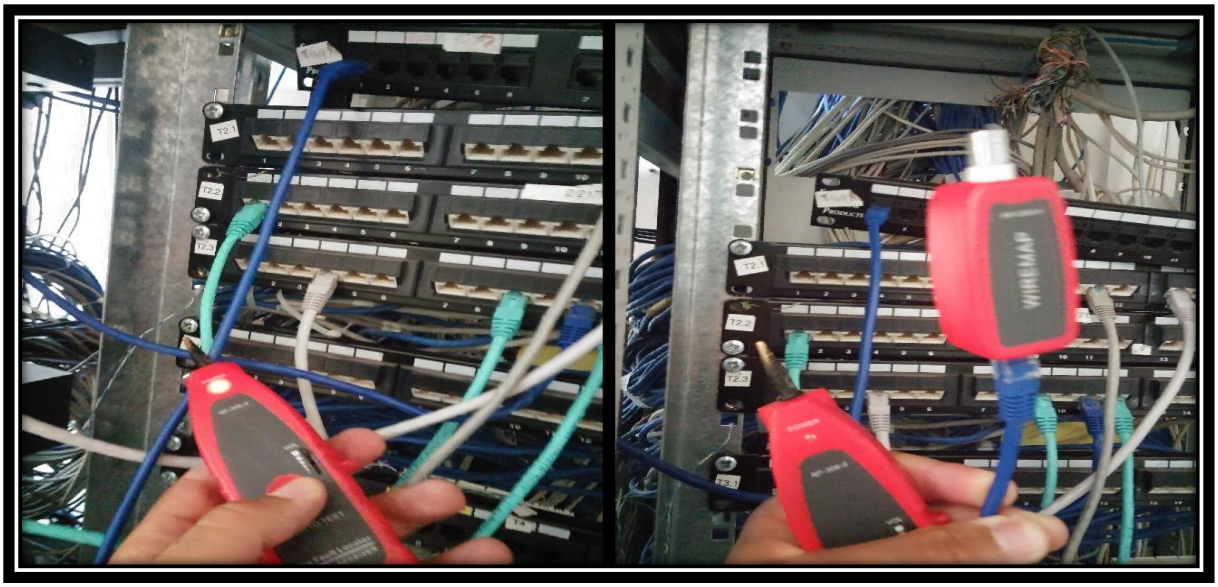

Figure (3): Checking and testing the cable network

All the network connection is Local Area Network for general purpose (like send file to printer, access internet, almost everything) as all users can access file and system in network, share the printer.

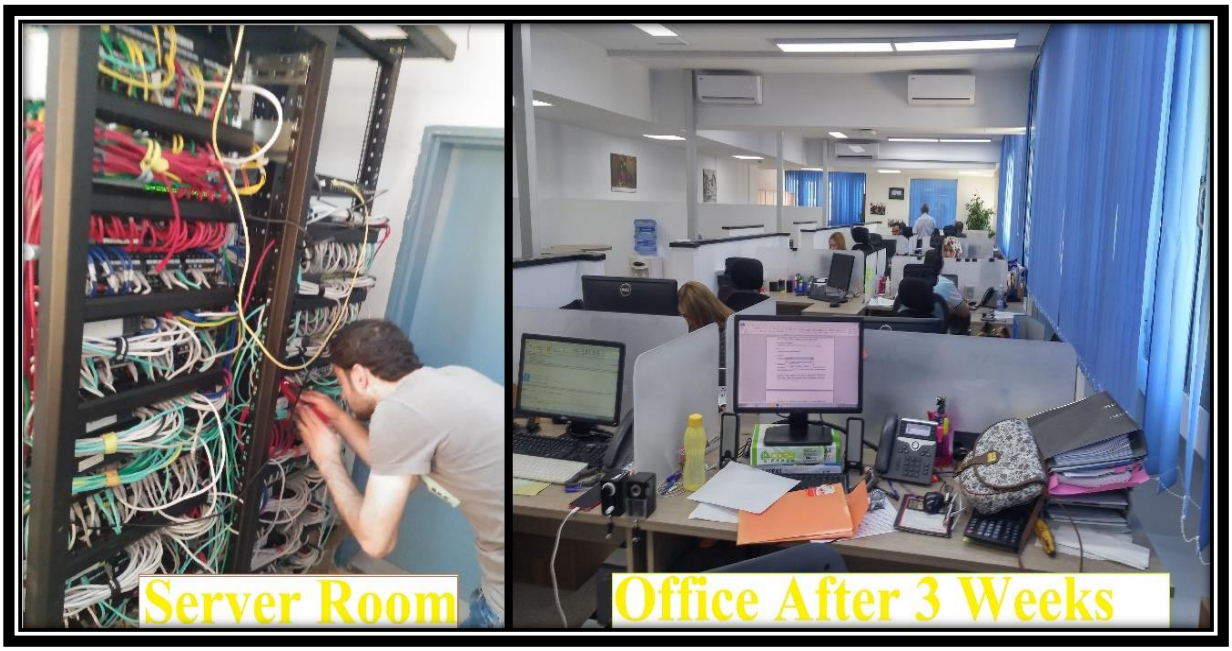

Figure (4): Fixing network connection for the office after 3 weeks

4. NEW BUILDING UNDER CONSTRUCTION (1ST BUILDING)

This work tech me a lot, because I sew full network connection in new building. This type of work specialized for GIS Company since they have been years doing same work as fast as possible

and well setup. We spend 5 days to fully finish the setup for 16 network point and cabin net with switch and CISCO stabilizer for local network.

Spending 5 days it's a lot, since it could take 2-3 days maximum, the delay of receiving the order due to miss-navigation and holidays. First, we get directed and informed for the places wanted to setup the network point and cabin net. Then we start measure the distance and number of cables needed, for this building we used the scale cable a lot because almost all of them have holes and tube inside the wall they allow the cables we go directly to main location where the cabin net we setup letter, and the network socket and cache cable.

Figure (5): The steps to setup wall network socket

Figure (6): Before and after fixing the wall socket

Second, we start push the scale cable inside the wall tube to catch it in end side after it goes out, then we attached the network cable with scale cable by electric tape, then add 5 meters in main point to arrange and sort the cables nice and well in Cabin net, for the other terminal we cut the extra cable (only 10 cm is enough) no need long cable just enough to fix the RJ-45 Jack Type-A (T-568A Standard color code), and close it with network special socket. It sounds easy and simple but it is totally not since it takes long time and need hard work specially when the wall-tube not clean and connected in zig-zag shapes due to the previous engineers not experienced to our work. So, it requires us to follow the tube cable in wall and second roof and cut it half to pass the scale cable then cover it with electric tape, we keep doing this process many times, standing on Ladder open and close the second roof cover to follow and fix the cable.

Figure (7): Most of network wall socket we done

Third, after received the cabin net, switches rank and CISCO network stabilizer, directly start by fixing up the Cabin-net in wall and organized the cable to give great look (Like using Cable Ties), then connect the 3M cables in switch rank (Patch Panels) using the (Krone) punch down tool to connect network wires in specific sort of color to all cables one by one. Before we use toner and tester to each cable to it location for marking (give number and arrange) and sort them to match

network in room respectively, after sorting them we make test to each network points and get Pass result (Wire MAP: PASS).

Forth, we put final touches like we get the main network cable that will give the holl building and connected to the CISCO network stabilizer and finish setup the network in cabin net and close it. Also, we cover the 3M cables with cache cable.

Figure (8): Full setting up the cabin network

5. NEW BUILDING UNDER CONSTRUCTION (2ND BUILDING)

A totally new company building under construction need to setup network connection and cabin network. So, due to far distance (like almost spend 2 hours on the path) and lake of electricity makes us wait for it without working, we spend 3 days respectively. So, in this field we used scale cable as well as previous work.

Figure (9): Passing the scale cable and get both terminal

In this work we almost repeat the same way and steps of work, but the only different in this building is that only 5 network point (Terminal RJ45-Jack both sides) we connect them to cabin network switch by pushing the RJ45-Jack in switch method.

Figure (10): All network fixed in wall socket and RJ45-Jack for cabin network

Figure (11): Cabin network after fixing the cables

6. NEW BUILDING UNDER CONSTRUCTION (3RD BUILDING)

During 4 working days respectively, we setup 19 network points, in big house changed to UNRWA Office in Bikaa/Lebanon. We spend daily 4 hours on path from GIS Company to the new office (by using transportation).

This is the 3rd time we did the same kind of work and I helped a lot since I get great experience from previous building. In this building we face difficulties in way of connecting the cable since it is old house with no tube in hole to use the scale cable. So, we use the cash cable to cover the all 3M cables that passing inside the house (due to long distance connection we support the cash cable with screws and "Pozidriv head" to ensure long time usage before it lose its elasticity with wall).

Figure (12): Most of network wall socket we done

Which mean the cash cable and network socket are outside wall, that is way it takes long for using different type of cash cable and support all of them with screws. In addition, we use drill to make holes in wall to pass throw the cables. And we repeat the process of numbering and testing as same as previous building.

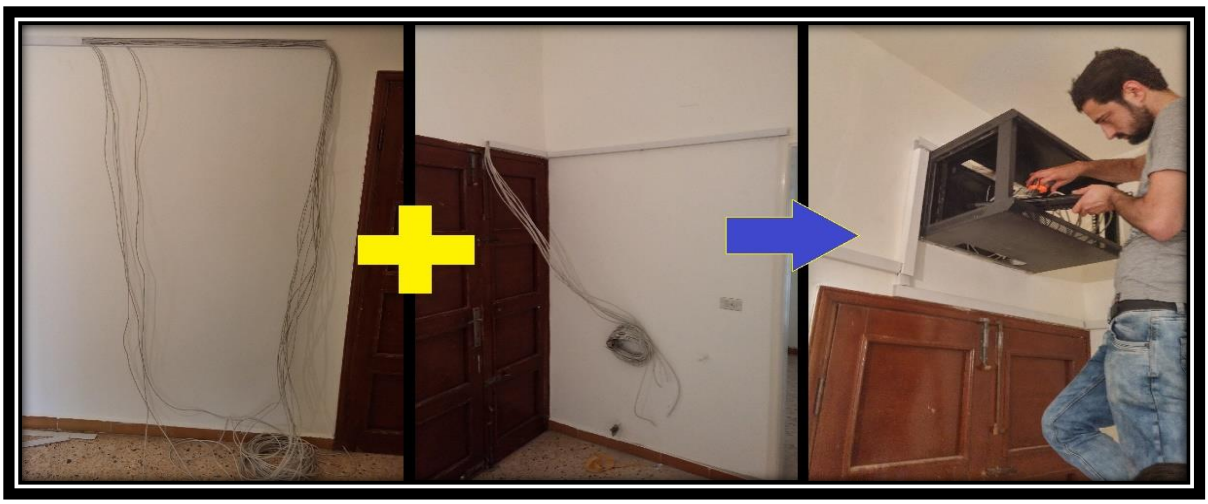

Figure (13): Network cables before and after setup cabin network

Figure (14): Testing the network connection in both terminal

Father more, we get the main network cable from upper floor office belong to UNRAW from the switch rank to outside covered with plastic tube to ground floor building switch rank inside the cabin net.

Figure (15): Main network from cabin network upper floor office

7. ADD AND FIXING NETWORK POINT

In one day in Zahlee/Lebanon, we setup 5 network point, it was quite simple and easy work comparing to the tough work we did before. Just 3 rooms we put the network socket and cash cable to the secondary roof top then we collect them and pass them from hole we drill then again cover it with cash cable until we connect them in cabin network. After we give them number respectively and test them using a tester.

Figure (16): Network cable covered by cash cables

Figure (17): Testing the network connection before numbering

8. NETWORK CONNECTION BETWEEN THREE SCHOOLS BUILDING

This three near school belong to one owner need to add and setup network connection between them. It was the biggest and longest. Since, we spend 7 days to finish setup 23 network point, 3 pairs of RouterBOARD SXT devices (configured), 2 network modems, 3 plastic-tube, 2 flexible-tube and 3 box of 3M cable network.

This 7 days' work sperate to 6 places. This school contain many buildings and it is not the first time GIS Company work in this schools. Also, there is old connection placed and we just add and setup with old connection.

Figure (18): SXT device setting up places

In first place we setup the “RouterBOARD SXT” devices (Master) in the roof to connect with the other “RouterBOARD SXT” devices (slave) in far building “Primary School”. In addition, this place “Administration Building” is the center between main network connection “High School building” and” Primary School building”, there is indeed old “RouterBOARD SXT” devices connected with the “High School building”. Also, we fix the router and cables connection and connect the device to the router that will send internet data to next building.

In second place, we just setup the “RouterBOARD SXT” devices (slave) to the router in the building and added 4 network points.

Figure (19): Modem and routers used in connecting the SXT device

In third place, we setup “RouterBOARD SXT” devices (Master) to send internet data to far building, and “RouterBOARD SXT” devices (slave) to received internet data from near building connected with center connection and one network point.

In fourth place, we setup the “RouterBOARD SXT” devices (slave) and 3 network point and one modem that connect all network point with “RouterBOARD SXT” devices.

In fifth place, we setup the “RouterBOARD SXT” devices (Master) and 2 network point. In center place, we add 6 network points and change the router to accept more network cable connection.

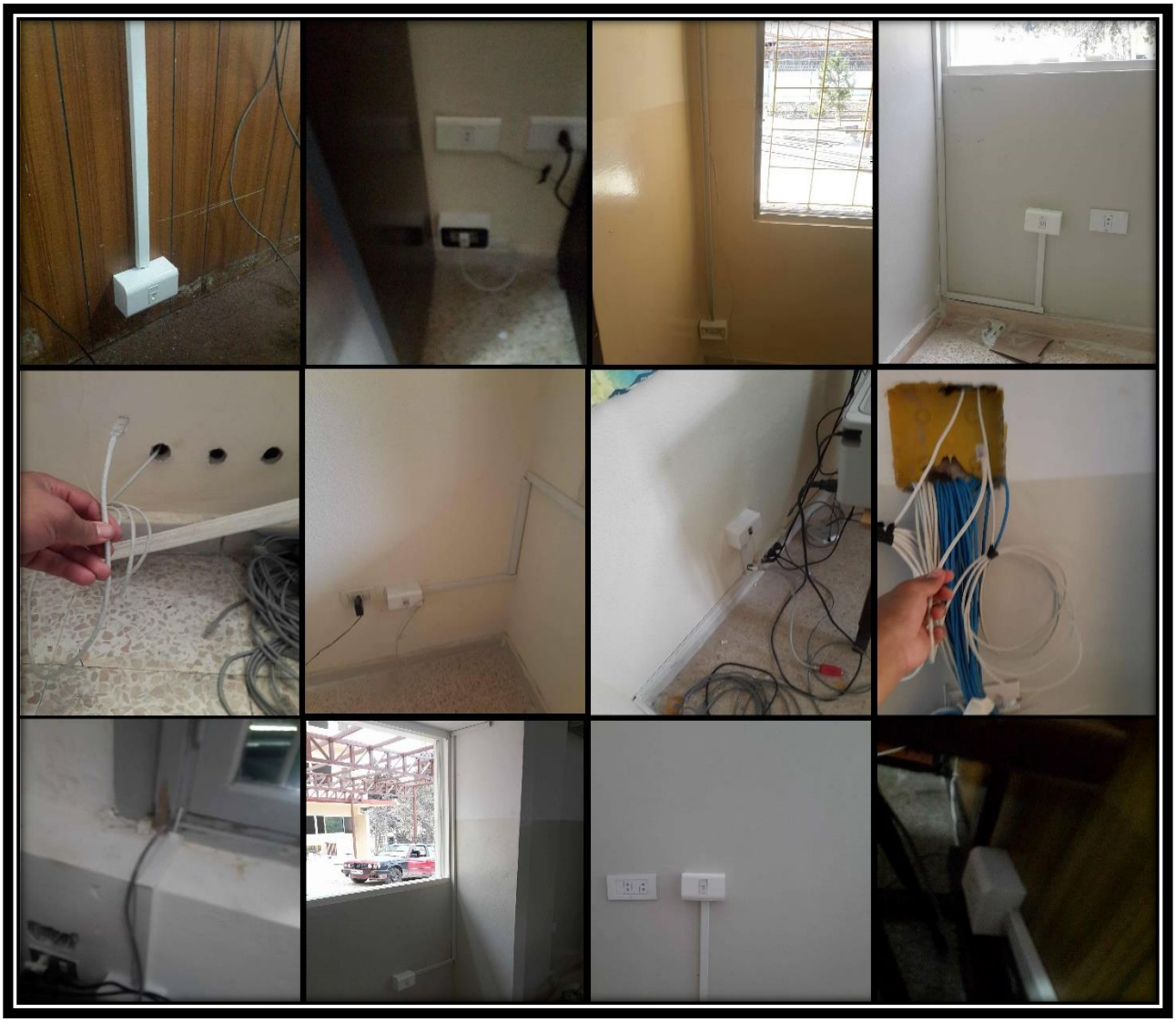

Figure (20): Most of network wall socket we done

All the network points we fix them well and covered with network socket, and cover all 3M cables with cash cable and support it with screws and most of connection in roof top and outside wall of building so we use all the plastic tube and flexible tube (insert the 3M cable using scale cable).

9. CONCLUSION

In this 20 days summer practice I expanded my engineering knowledge. Since all of my time in working site, I used to ask so many questions, all the questions that pop out to my mind. This summer training included too many parts that will assemble an engineering knowledge in the future.

The summer practice included a lot of new and beneficial informations and should be taken in a proper way. I would like to thanks the Near Easy University for giving me this opportunities to make this helpful summer practice as well as GIS Company.

Thankfully, I was able to see the difference between what is written on papers and what down there in the real field. It was such a pleasure to meet Eng. Yousef CHANAA, who was a great help to me and I was astonished by his passion and abilities. Also, as undergraduate student in "Computer Engineering Department", I see it's a good experience and very helpful to me and to all students as well.

The main goal of this training is to provide an opportunity for students in department of Computer Engineering to observe and practice real work. And gain good experience in this fields and learn the works and their stages.

Finally, no matter what we learn in universities or schools, it will not stay in mind for a long time. But if there are experiences and work processes remain in mind for long time because it is something that has been practiced.

Thank You.