INTERNSHIP REPORT

NETWORKING AND IT SUPPORT

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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This Project/internship titled Networking And IT Support, submitted by Maruf Hasan, ID No: 172-15-10123 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 09/07/2020.

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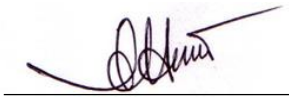

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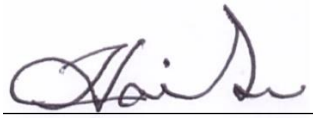

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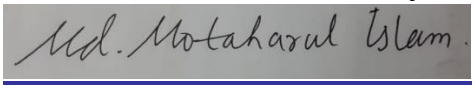

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DECLARATION

I hereby declare that, this project has been done by us under the supervision of **Ms Afsara Tasneem Misha Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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First, I would like to show my gratitude and utmost respect to the Almighty Allah for giving me the opportunity to finish the final year project of internship and my education successfully.

I am really honored to work under the guidance of Ms Afsara Tasneem Misha Lecturer of the department of Computer Science and Engineering of Daffodil International University who helped me by supervising my project of "Networking and IT Support". I humbly appreciate the motivations, guiding, counseling and patience of honorable madam. She helped me through every steps of the project with sheer will and showed me that an average student like me can pull out anything that I can dream. I am really thankful to madam for the criticism that madam gave me and the ultimate result I found. I am also humbly grateful for the time madam gave me through her personal and professional life.

I am really thankful to our honorable head of department of CSE; Dr Sayed Akhter Hossain. Thanks to sir we are successfully completing our studies and projects. I personally show my utmost respect to sir for showing me ways and motivating me to complete our project. I am humble to my university for giving me various opportunities to work while I was studying.

I would like to thank my mentor Jewel Rana COO of "Smart B" for giving me the opportunity to work and teaching me various important issues. Thanks to my colleagues for helping me and showing me various projects while I was an intern.

I also like to thank almighty for giving me such productive and helping parents. They helped me on every step and through their sheer hard work I have reached my goals.

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ABSTRACT

The report completes my internship successfully under the supervision of Ms Afsara Tasneem Misha, Lecturer of the department of Computer Science and Engineering of Daffodil International University. I worked as an intern in the organization “Smart B”. There I worked on Networking and It solutions. I also worked on various routers. My internship was full of different situations and responsibilities. I got the opportunity to work with various other peoples and higher ups during my internship. This report shows which steps I followed and the works that I have learned and done. I have worked on various routers and connected them. I have given various information about the works which I covered through my internship. I also got the opportunity to write freely and given all the details as needed. I tried my utmost to present my capabilities through the report and show you all.

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Chapter 1

INTRODUCTION

1.1 Introduction

In this time we can't think without IT solution and Networking. In everywhere we must need internet. There are not many office, industry and institute without internet. Every industry, office and institute must use computer and communication device. They use internet for the communication. They use many types of Hardware, Software for better communication. In this time on this world we never think of doing anything without internet. Every industries, offices and institutes need many people who knows Networking and maintain all kind of communicating device. It is a very important part of any Organization, People who maintain all kind of communicating device are very careful about this part. If there any industry which has their network down they can't communicate each other. It may create many problem. And this is very harmful for any industry, office and institute. I think everyone must need to know how to use all kinds of communicative device. The main part of IT solution sector is maintaining all kind of device which are connected with internet. And networking refers to linking multiple devices which can share information and software resources. I got the opportunity to do intern on this sector, I have learned many things and solved many situations. I have also got hands on training from respectable superiors who have vast experience on this particular sector. I find it pleasing and fascinating to learn and work on those which were my passion. It was an honor to work in this sector and learn my weakness.

1.2 Motivation

I find it rather amusing when it is hard and struggling to work. There are situations which need both mental and physical dedication. We humans find our work very boring but it is not in my case. I do what is my passion and my passion is computer. I find it very pleasing to solve the riddles and problems. The motivation comes from my childhood experience with old generations of computers and games. When I first used internet I found something special on it and I started ways to get closer to it.

1.3 Internship Objectives

The goal of this internship was I want to become a Network and IT Engineer. In this world there are no any industries without Network and IT officer. In everywhere they must need a parson who batter know about Network and IT related issues. Networking and IT support is very challenging and hardworking job. It is very sensitive job. The support officers are needed to be very careful when they doing this job. Most of the time the whole office dependent on IT support team. A support officer must do up to date every single devices hardware, software and maintain the network properly. I am to accepting the challenge and trying to be a great IT support engineer. I wish it help on my upcoming career. My objectives are not only just doing job in this platform, but also I will trying to be making something new invention for the better future.

1.4 Introduction to the Company

SmartB (Smart Business and Smart Technology) is one of the new uprising leading IT farm in Bangladesh Science 2017. The company offering many things like Web Develop (Corporate websites, Online stores, Customized software's), Mobile aps Developments, SEO, Promoting (Facebook Advertising, Google AD Network Management), Catalog Management, Corporate Branding and Technical Support.

Origination Information

Name: Smart B (Smart Business and Smart Technology)

Address: Rupayan Center, 72 Bir Uttam AK Khandakar Road, Mohakhali, Dhaka 1212

Phone: +8801736212525, Email: info@smartb.com.bd

Website: https://smartb.com.bd/

Figure 2.1 Smart B Logo

Company has prepared hundreds of market research studies and business plans. Managed over 15 Catalog, Developed about 40 sites, promoted hundreds of social accounts and Automated over 3 Business. [1]

1.5 Report Layout

Chapter one: Here I described about my internship, Why-How-Where I did my internship, The reason behind and the goals I achieved.

Chapter two: Here I described about the organization I did my internship, How they operate, what they offer and chain of command.

Chapter three: On this chapter I described about the situations I have experienced and the works which I did, I also mentioned my projects and many challenges which I faced during my daily routine.

Chapter four: This chapter shows what I planned for my career and how I would like to continue and how this internship connects me with my career.

Chapter five: Here I have described what I am planning in future to do and take as my career, how the internship affected me to build my career in future.

Chapter 2

ORGANIZATION

2.1 Introduction

SMART BUSINESS, SMART TECHONOLOGY (Smart B) provides Tech service in Bangladesh. It is one of the leading organizations in Bangladesh. It has been providing all kind of Technical support and service, like Web Design and Development, Android Development, SEO, Digital Marketing, Catalog Management. It also provides computer and Network management, Troubleshooting Hardware software of computer and networking device. They are not just making Websites and Applications only they also create many types of effective tools for Business. Smart B can help their clients in three unique ways, they build system, maintain and they support.

2.2 Product and Market Situation

Smart B provide many types of Technology services, like Corporate Websites, Online Stores, Customized Software's, Unique Project, Android Mobile Apps, iOS Mobile Apps, Mobile Mockups, Mobile Cloud Management, Facebook Advertising, Google AD Network Management, Local Network Advertising, Online public Relation Management, Google Business Management, Search Engine Optimization (SEO), Content writing, Keyword Research & Rank Track, Web Admin & Analytics Management, Product Description Writing, Social Media Management, Hardware Troubleshooting, Office Data Security, On Call Computer repair, Free Software upgrading.

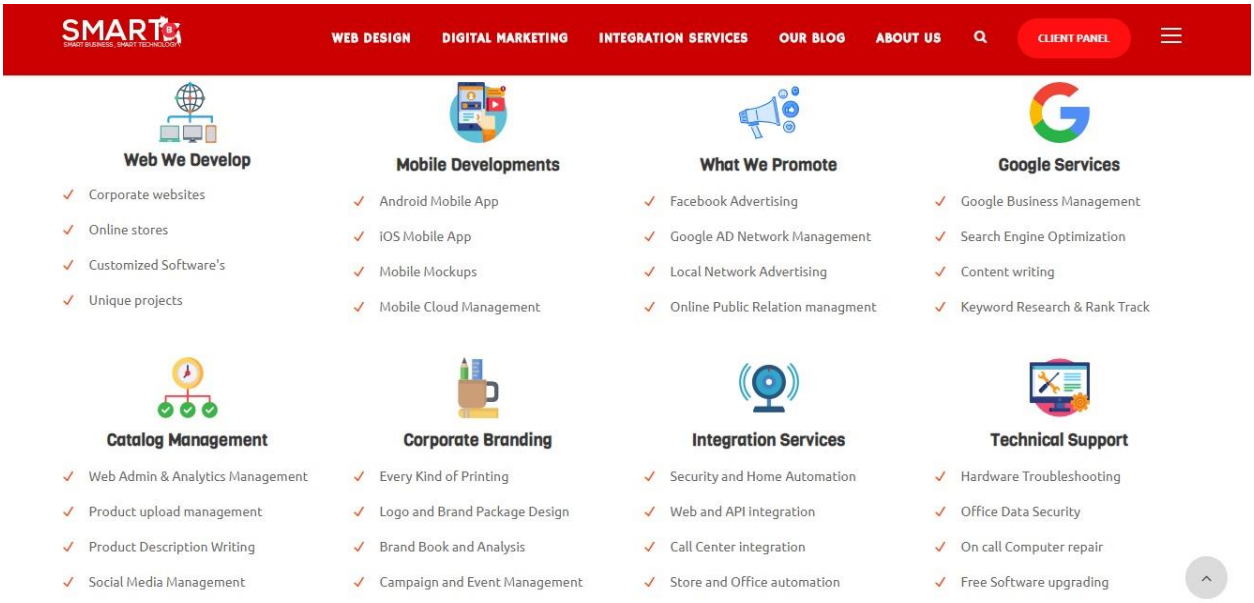


Figure 3.1: Smart B Services

2.3 Target Group

The Smart business, Smart Technology (Smart B) Work with various industries, Organization and company below.

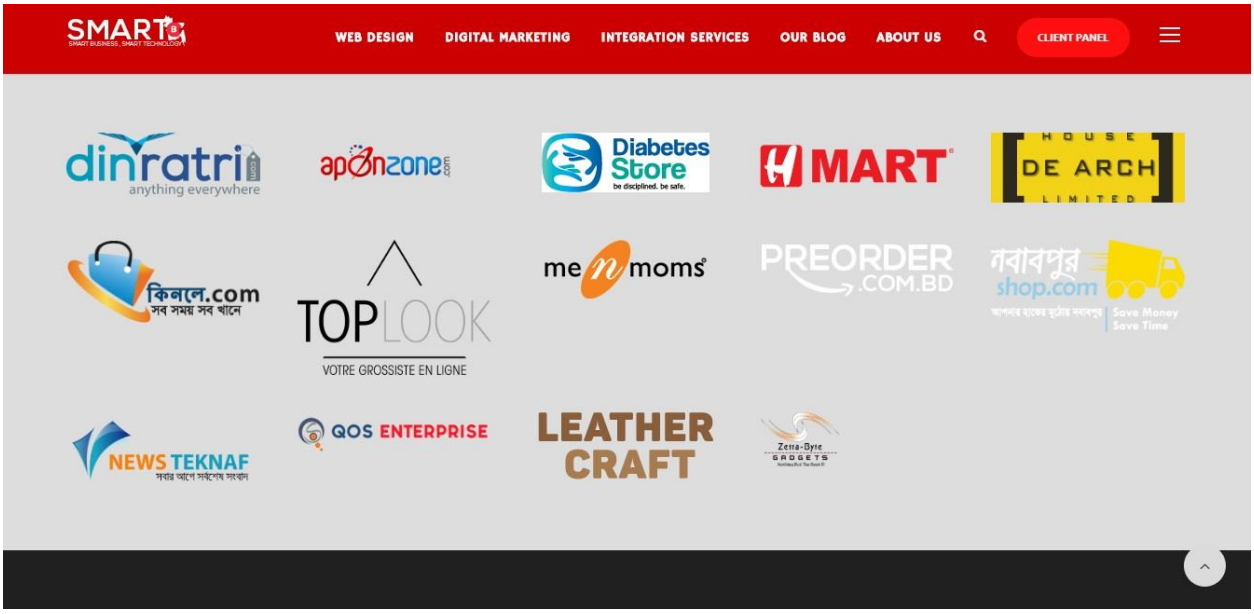


Figure 2.2: Affiliated Company

2.4 SWOT Analysis

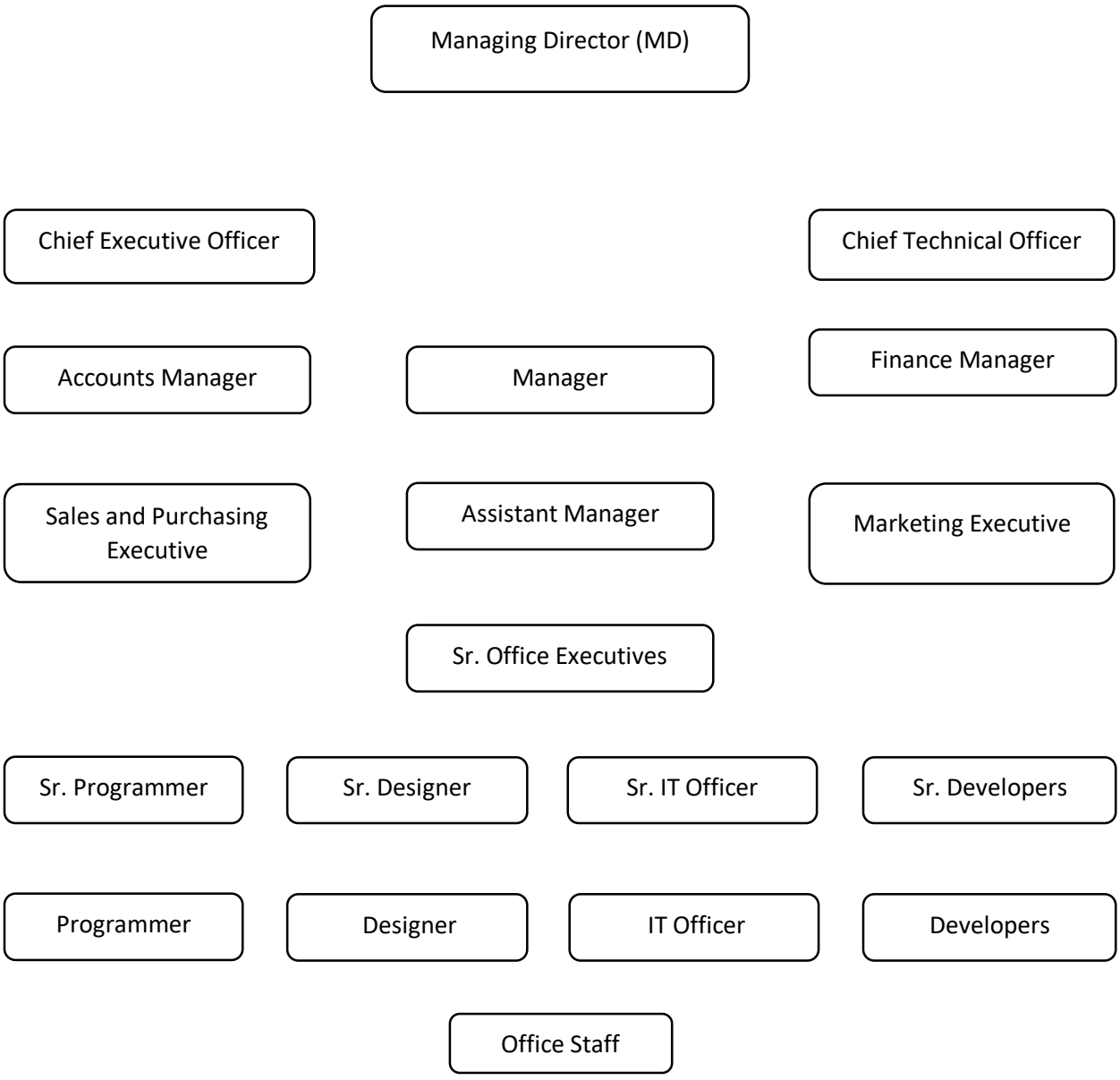
Strength Weakness Opportunity Threat analysis is a very essential factor which helps us to find various important information about any industry or company. For this particular organization we can see there are more strengths and opportunities than weakness and threats. “SmartB” is already a renowned company which is very strong at Web developing and android software development. They are quite popular at giving technical support and they have good human resource. They have many competitors which is a big threat to them and they are lacking on financial resources which is a weakness. “SmartB” is a company which is now giving its competitors a big run for money as it is giving its customers quality service with less money. They are offering different types of service which is very handful among all. It is tough now a days to find proper service.

If I think about the company I can say this company has a great future because of its Human Resource and better management. As I was and intern there I cannot completely assure what I found but I can relate my information here.

2.5 Organization Structure

Organization chart

Table 1.1: Organization chart



Chapter 3

Task Project and Activities

3.1 Daily Task and Activities

As I was an intern I had to learn many things which are not taught in the traditional teaching process. I had to learn quite a few things under the sleeves of my seniors and mentors. Sometimes I had to work more than my duty hours. My duty hours was 36 hours per week. And I had to reach the office within 9 am and leave during 3 pm. First of all I had to do some essential activities which were; attendance, to do list, checking order list and many more.

My first month went learning many things with hands on experience. Dealing with situations which are not accustomed and finding new ways of doing work. My daily task were related up to date with all network connection and IT device. I must check all internet connection. Do support all kind of IT related device, check the update for system software. I had to make sure that every computer or Laptop run properly and smoothly. This task is the most challenging for me, because the huge number of Computer or Laptop Users. The whole office spent very busy time every day. Sometimes I faced many types of trouble and tried to solve all carefully. The main responsibility is to supervise the implementation and maintenance of company's computing needs.

3.2 Event and Activities

When I was doing my internship I attended all Event and training programs. It's very helpful for me and my career. I have learned lots of things, solved many problems and troubles. I learned how to configure Router, How to manage a router and provide internet properly. I also know about the office environment. It is very important to every intern. Thru this internship I learned how to manage an office and how to work in a corporate place. "Smart B" organize many Event programs and provide many trainings for their intern. I configured Mikrotik router and also distribute network properly. I learned how to troubleshoot in a computer, Setup OS (Operating System), LAN, MAN, WAN also I learn how to build Wi Fi Network, Manage Clint and System Server, Clint Server, Storage Server. I also learned how to maintain CCTV.

They make sure that every intern can learned properly whole of the working procedure. And day by day they can adjust on the office environment.

3.3 Project Task & Activities

As I was an intern I got the golden opportunity to sit and learn many projects. After that I was given the chance to work on projects. I was given various tasks and I have completed those all. My activities are fully based on the tasks which I was given. At the beginning of my internship they taught me a lots of things like.

3.3.1 How to patch a CAT 5 cable: Here is a demonstration. First I take a CAT 5 cable, peel the cover of the CAT 5 cable, arrange it orderly by color subs as Orange white, Orange, Green white, Blue, Blue white, Green, Brown white, Brown.

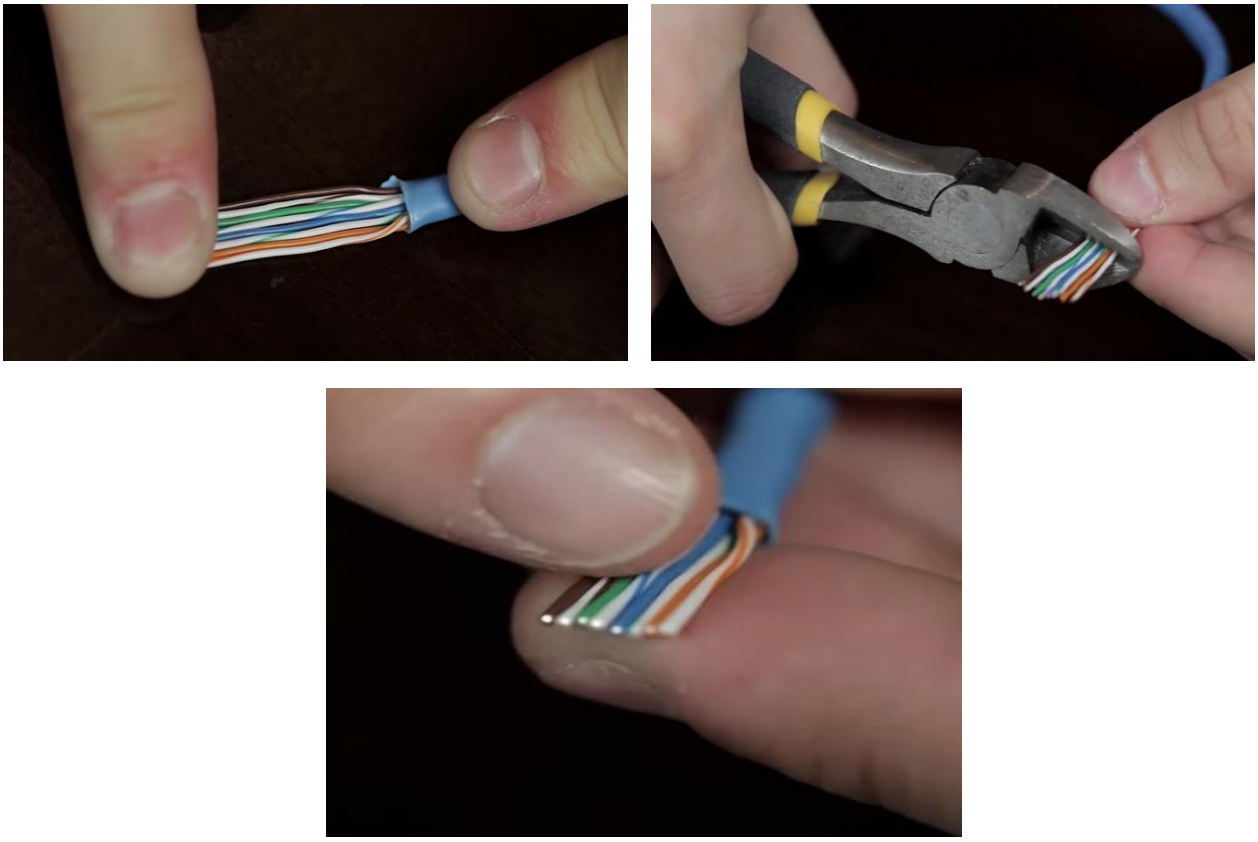


Figure 3.1: Arrange CAT 5 cable

And I will cut them orderly and put it into RJ45 connector very carefully.

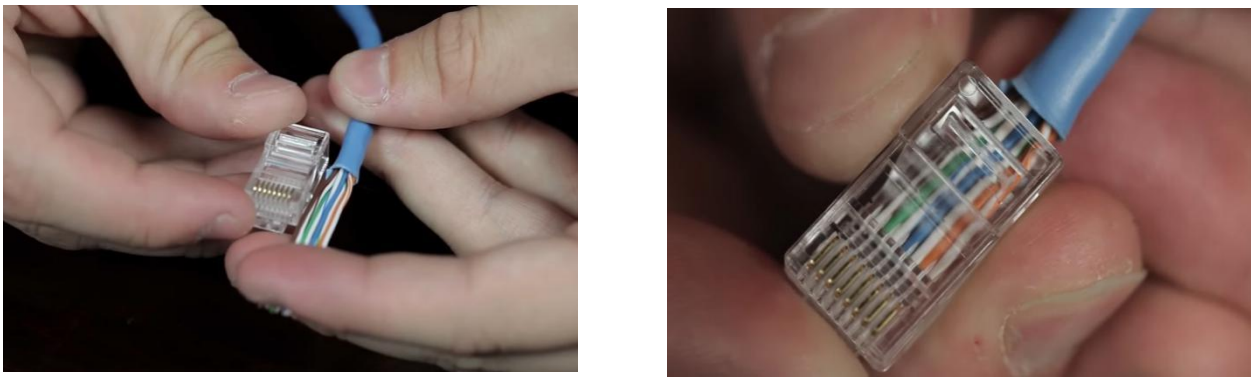


Figure 3.2: Put CAT 5 cable into RJ45

Then take RJ45 clipping tool, put the connector into the RJ45 clipping tool. Then press the tool carefully, after that the patch is complete. [2]

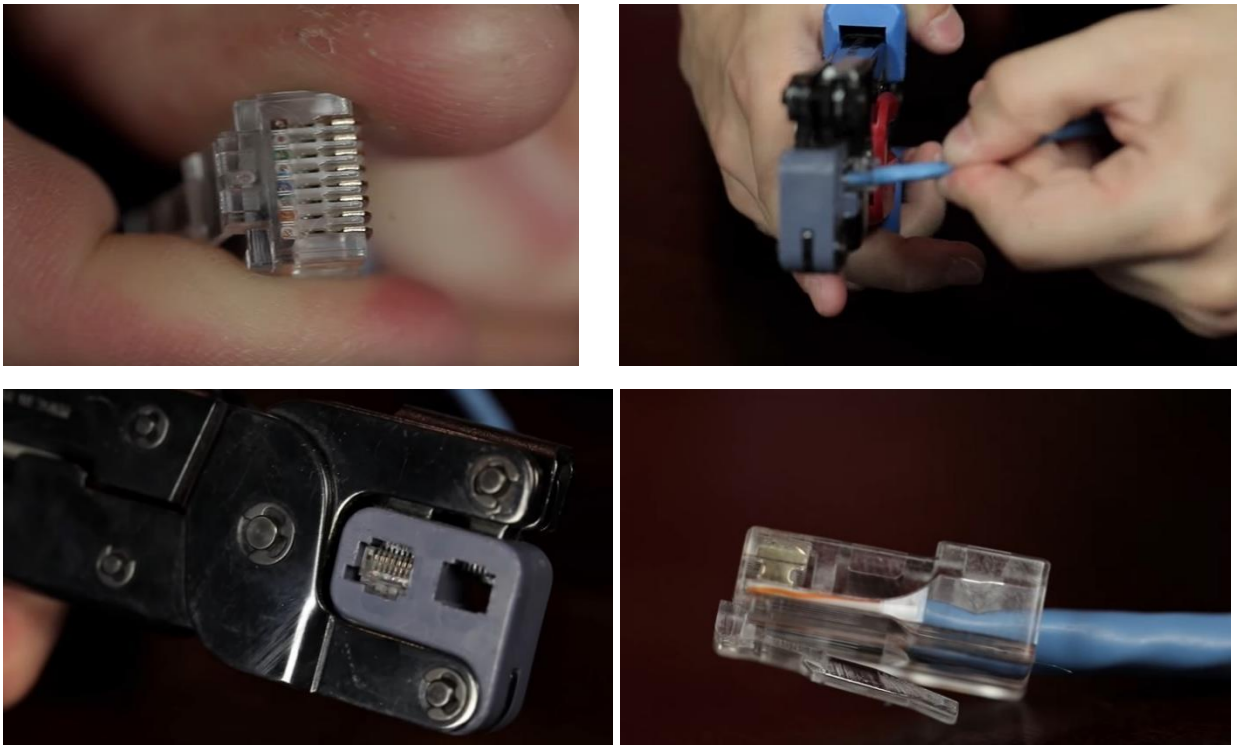


Figure 3.3: Patch RJ45 connector

3.3.2 Create a LAN Network: Then I learn how to create a LAN Network. To create a LAN Network first we need CAT 5 or CAT 6 cable. Then we need a RJ45 clipping tool, RJ45 Connector and a Network switch. The Network switch is depend on how many connection we need. If we need to connect 15 PC then we need 16 port or 24 port Network switch.

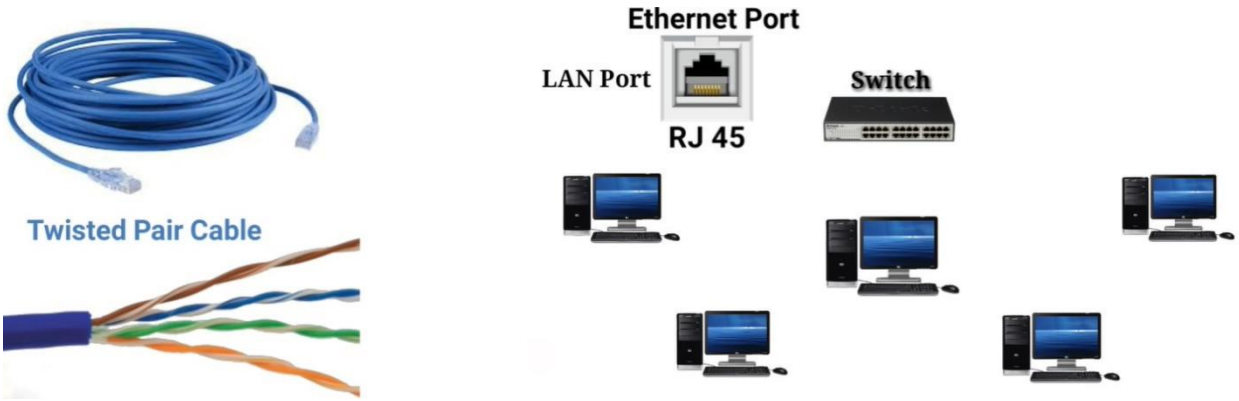
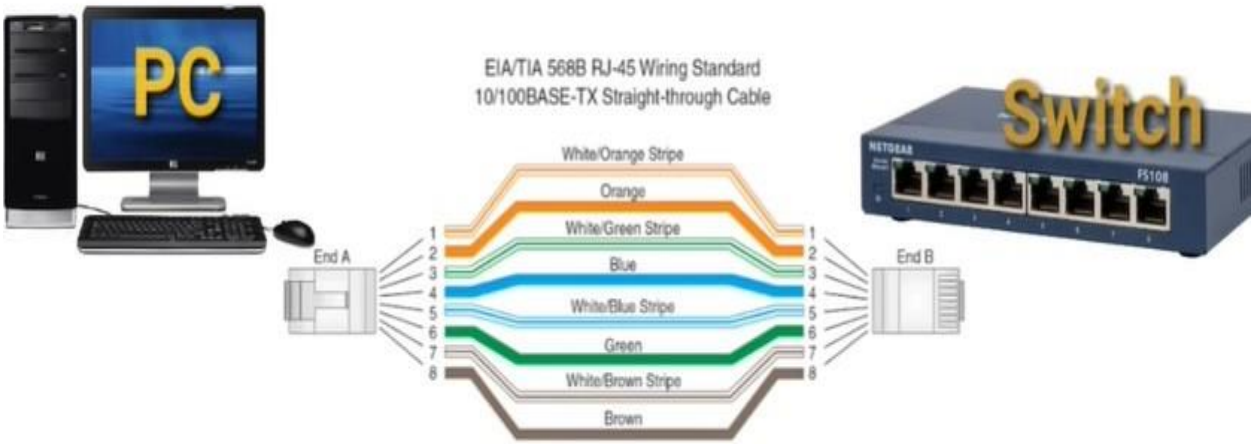


Figure 3.4: CAT 5/CAT 6 cable, Network switch, PC

After collect all equipment we start the work. First we need to know how many pc we need connect, then we cut the ware as our need, Patch RJ45 connector and connect all PC into Network switch. So in this way we completed the LAN Network work. [3]



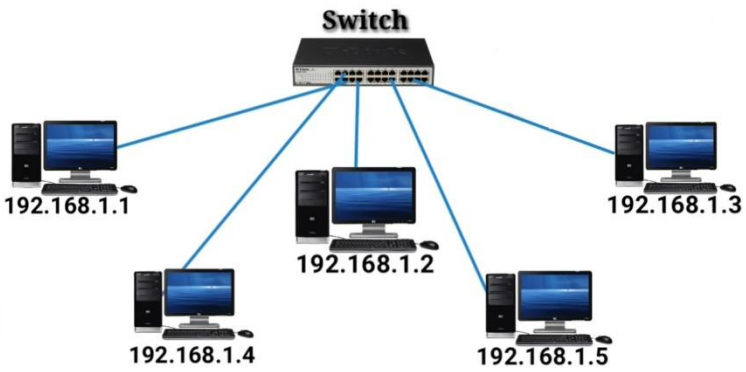


Figure 3.5: LAN Network

3.3.3 How to configure a Tplink router: After completed LAN Network connection I learn how to configure a Tplink router. First I need a Tplink router, then I will connect the router into the power. After connecting power I connected the either cable into the WAN port. Then the internet connection will connected into the router. After that I need to configure the router. I will turn on my laptop and go to the wifi menu and search the router "TPlink" and connect it by clicking it and entering the password.

Figure 3.6: Tplink router

Figure 3.7: Configure Tplink router and entering the password

After connected with router, I open a search engine in my laptop. Then go to browsing option. Then type http://tplinkwifi.net, after that a Login window will be open. Then I type user name “admin” and password “admin” then press login button. Then I select “quick setup” option. Then press “Next” button, then select “Static IP” and input IP address into the “IP address”, then input subnet mask, Getaway and DNS server. After input all of this things press “Save” button.

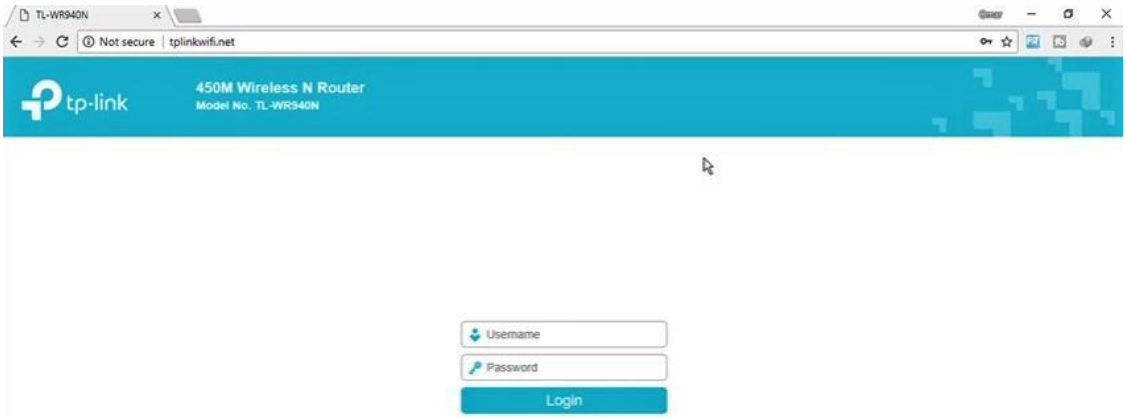


Figure 3.8: Login page

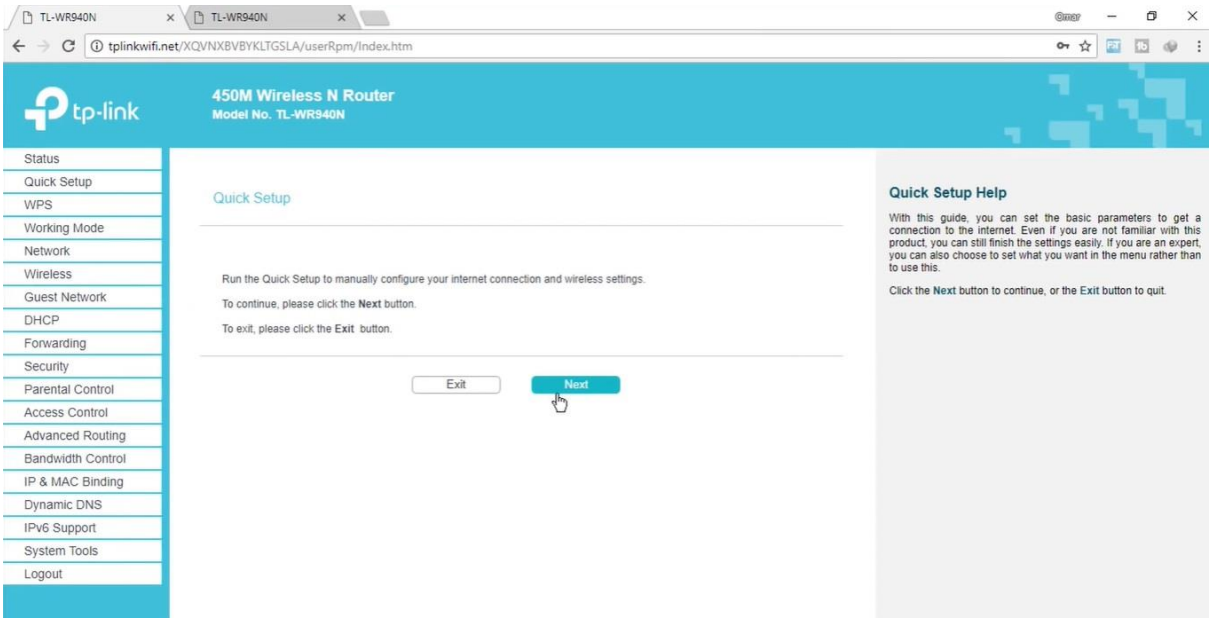


Figure 3.9: Quick setup option

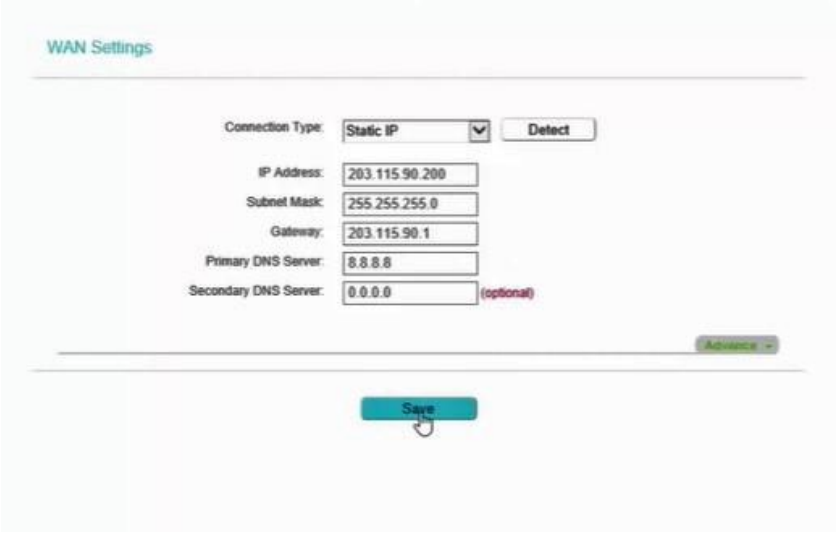


Figure 3.10: WAN Setting

After configuring WAN Setting, then enter the Quick setup wireless option. Then I change wireless Network name, then set a strong password and click “Next”. After all setup status show success then click “Finish” button. This was my fist router configuration work. [4]

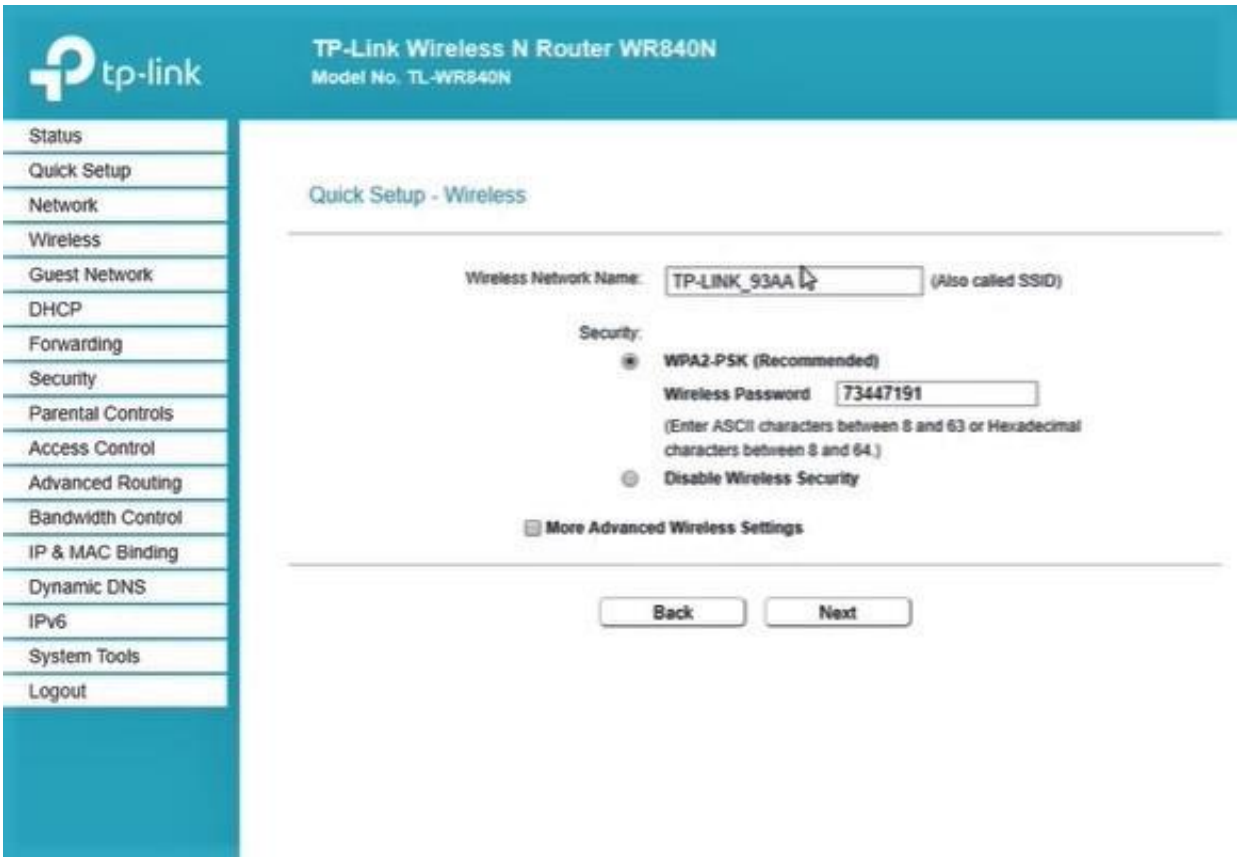


Figure 3.11: Wireless Setup of Tplink router

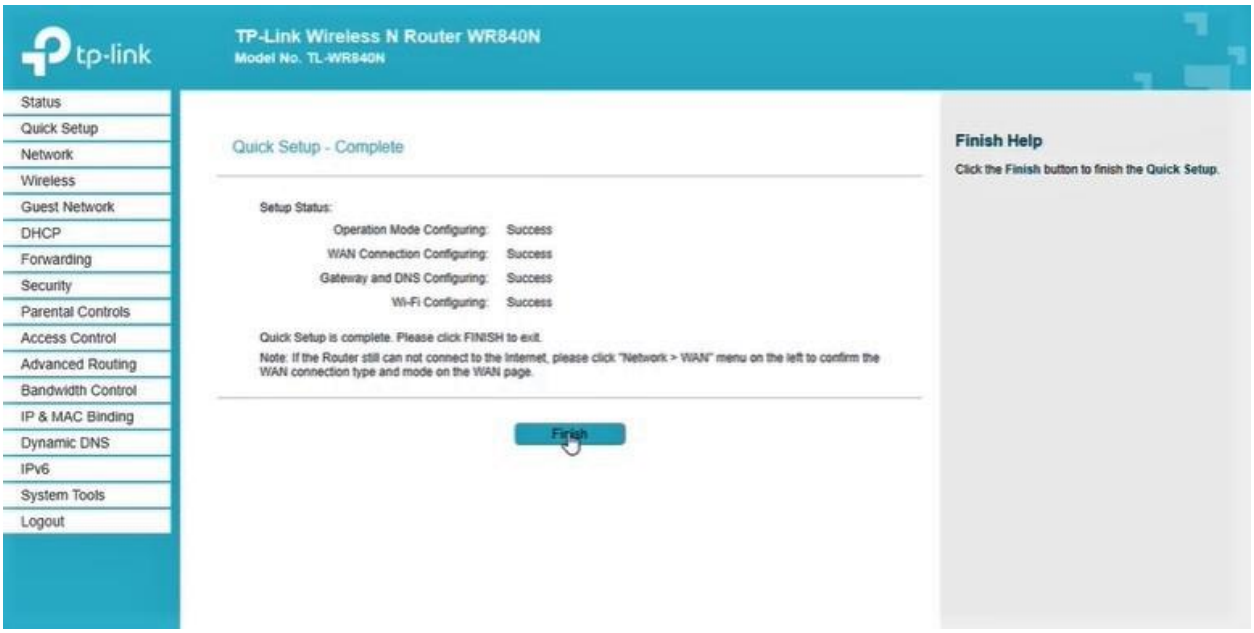


Figure 3.12: Complete the quick setup of Tplink Router

3.3.4 Configure a MikroTik Router: After few works they assigned a task in which I had Configure a MikroTik Router. It was very difficult to me, but my supervisor help me to do this work. The working procedures are given below.

Figure 3.13: MikroTik Router

To Configure (MikroTik Router) first we need to connect the MikroTik router in our CPU. Then we try to enter the MikroTik router.

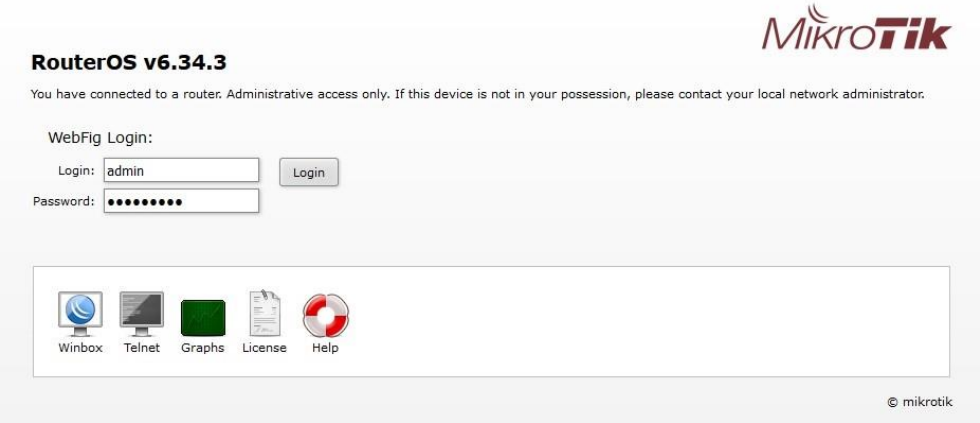


Figure 3.14: MikroTik Router login page

If we want to access and use MikroTik router easily, then we can use WinBox. It is a user friendly MikroTik access control software. Most of Network Engineer use WinBox for work willingly. I also use winbox to configure MikroTik router. The WinBox login Page is given below.

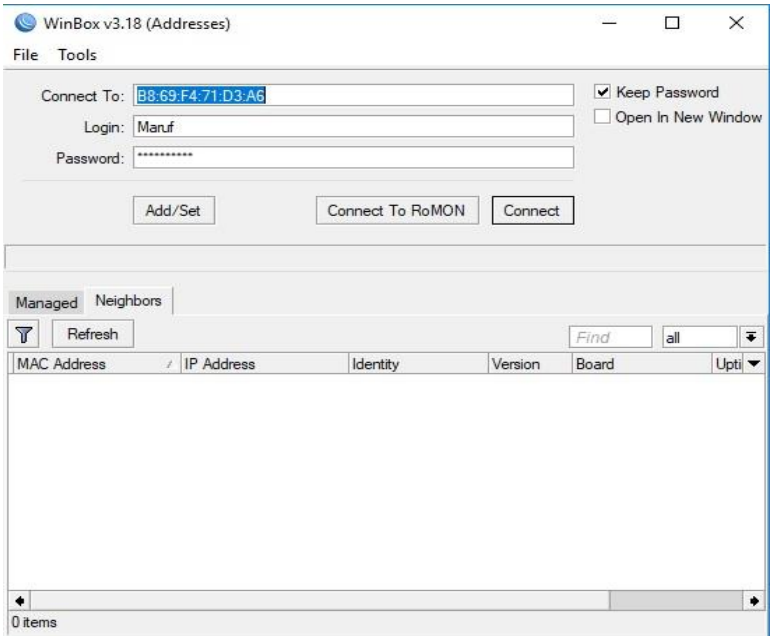


Figure 3.15: WinBox login page

When WinBox log in page is open, then we enter the password and login name or ID and we must enter the IP or Mac address of MikroTic router. When we enter the router then a Dashboard will open. The Dashboard is given below.

Figure 3.16: WinBox Dashboard

For the basic configuration first we need to click “Quick Set” menu. After opening the quick set menu a notification option will open. It shows a warning that if we changed the mode than the connectivity could be lost. Then we press “yes” Button. Then we will change Home AP or WISP AP. We select Home AP, then again a notification option will open. And we will press “Yes”. Then we set the network name of wireless. Then change Internet option “Address Acquisition” select “Automatic”. Then fill local Network options, put an IP address into the “IP Address” bar, then put the Netmask / sub net mask into the “Netmask” and select the “DHCP Server” option. Then put the DHCP Server range like 192.168.5.10 – 192.168.5.254, then select “NAT” option. Then press “Apply” Button, and press “OK” button.

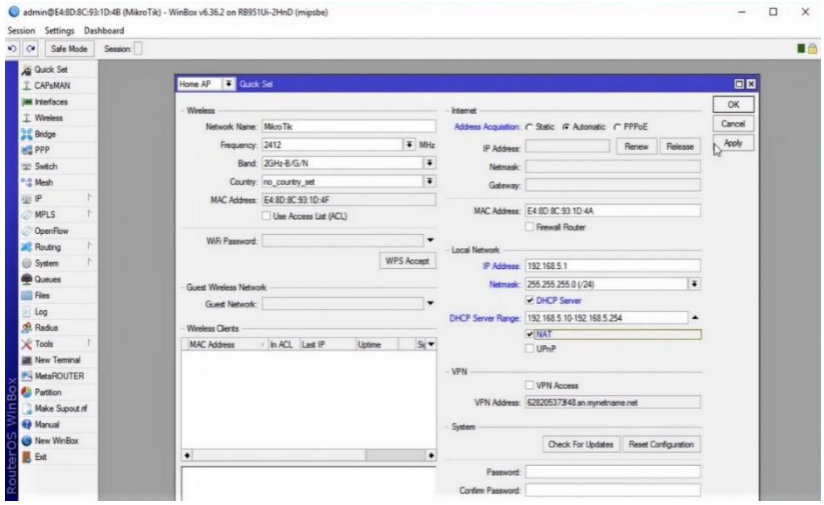


Figure 3.17: Configure Quick Set menu

The Next things Configure Wireless. So click on the wireless and by default we see “wlan1”. Then double click on that, then select mood “ap bridge” then set frequency, select “auto” option. Then fill up the SSID option, it is the name of wireless access point. Then click “ok” button. Then configure the Security Profiles. When we click on that security profile then see already 1 security profile default. So double click on it, and change the mood on “dynamic keys”. Then select “WPA2 PSK” of Authentication Types. Then set a Password into “WPA2 Pre- shared key” then click “Ok” button.

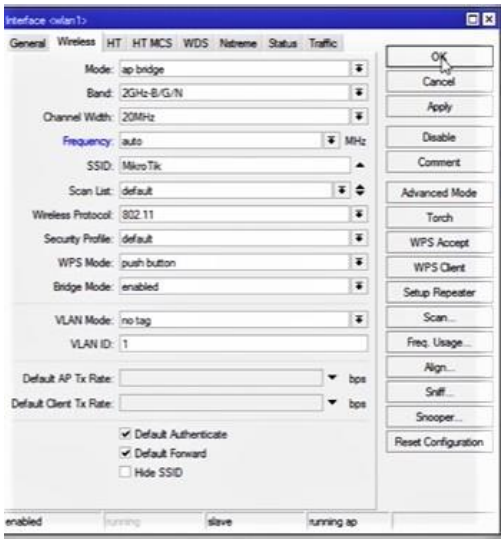


Figure 3.18: Configure Wireless Option

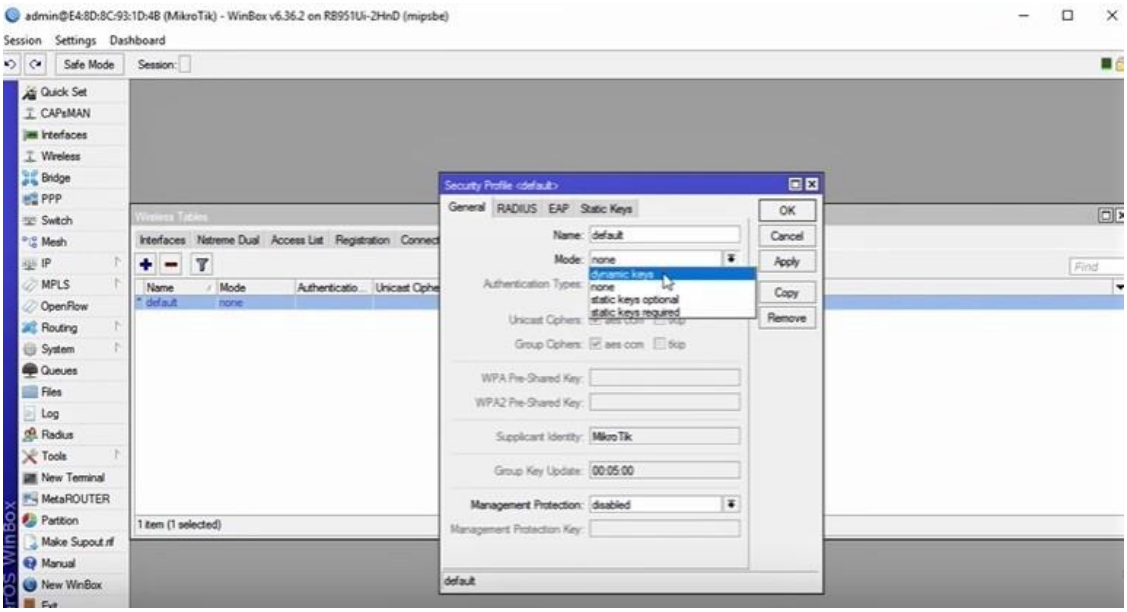


Figure 3.19: Configure Security profile

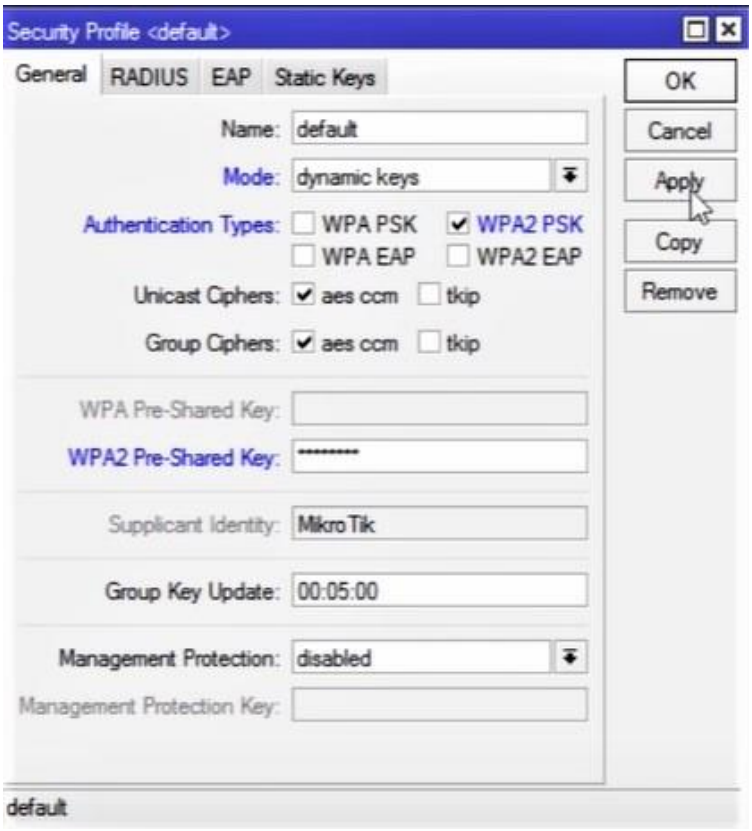
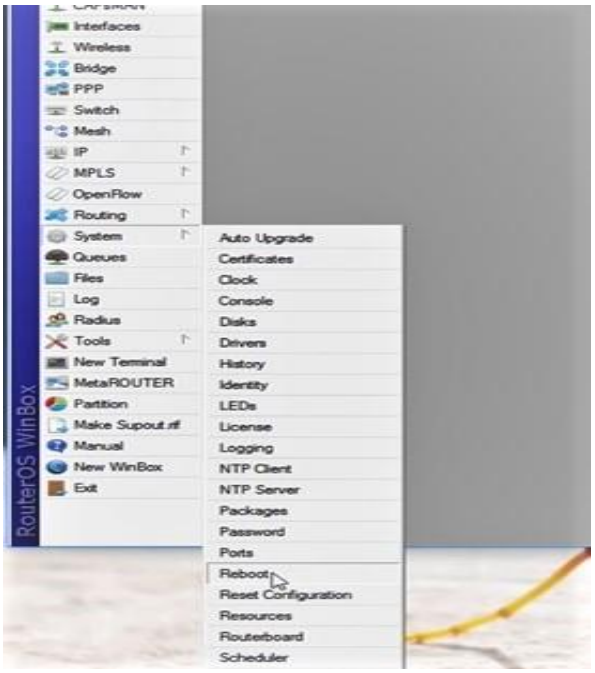


Figure 3.20: Set Password into "WPA2 Pre-shared key"

After done all of work then click on the "System" of left bar, then click reboot option, a notification Alert will open. That ask am I sure to reboot this Router? Then then press "Yes"



"So whole procedure is How to Basic Configuring in a MikroTic Router" [5]

I also learned and solved various troubleshoot of network and routers. Once I was given a task where I had to solve a whole buildings router troubleshoot. It was the main router which was effected but I had to check all other routers to ensure what was the actual problem. Here is a demonstration about the steps which I have taken:

3.3.5 Router Troubleshoot:

Table 1.2: Router Troubleshoot

Router Troubleshoot	1. First i checked all the routers than i rebooted all and configured all. Then i searched for the connection problems.
	2.I found some bad connectors which i also changed and than i connected all other routers. After that i found a wire which was badly torn i had to change the wire along with the connector.
	3.I suddenly got call from the admin who suggested me to find the hub and see if there any problem. There i found a rats mischif and i changed the cable and connector and connected the line.

I also learn some important and common troubleshoot like Computer Viruses, can't connect to the internet, VPN connection Error, DNS problem, ping, IP config, Blue screen of death, DLL file not found, Application running very slowly, Malware problem, Internet network connectivity Issue etc [6].

3.3.6 Computer Viruses: Computer viruses is very common problem. In this world we can't think without computer, every ware we must need a computer for doing our everyday work. When we working in a computer, some time we face this common problem. First we need to cheek the

"Firewall" then remove the application if we installed, use antiviruses, don't open any threat email, un wanted email, unidentified email or file, Check the computer every day, make sure the antiviruses is up to date, never visited any threated website and never download any file from untrusted website, do not copy any file from any removable device without scan. If we do all those work then our computer will save from viruses [7].

3.3.7 Can't connect to the internet: This is also a common problem. Some time we can't access internet but still connected with the network. This problems troubleshoot is very easy. First right click on the internet icon in the taskbar.

Figure 3.21: No internet access

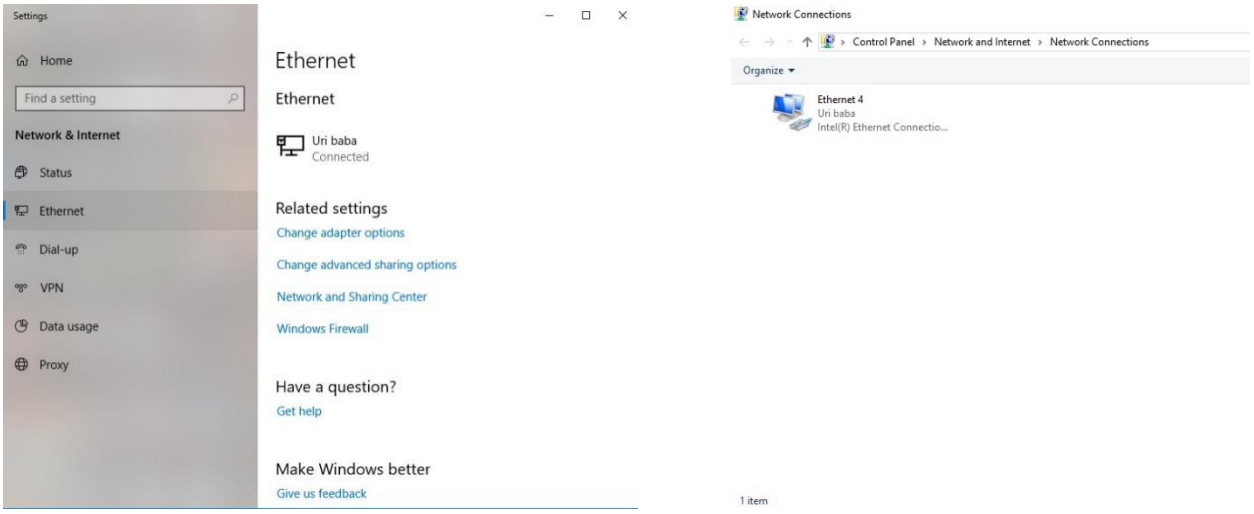


Figure 3.22: Ethernet, Change adapter option

Then open “Network & Internet Settings”. Then click on the “Ethernet” option, then open “change adapter option”. Then right click on the Ethernet option then left click on the properties then double click in the IPv4. Then select obtain an IP address automatically and also select obtain DNS server automatically. After doing all of this work the PC or Laptop will again connected to internet [8].

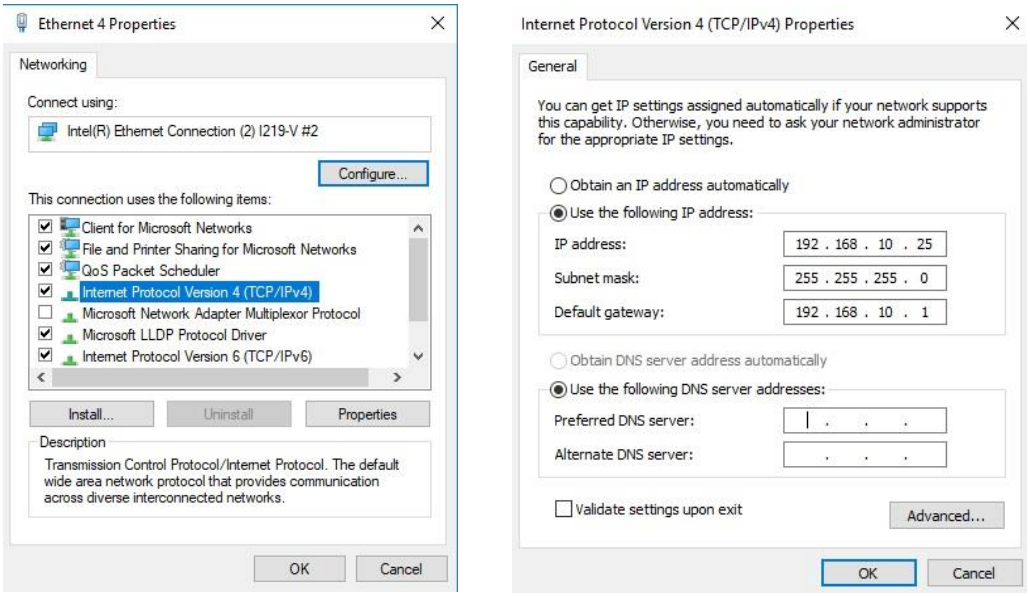


Figure 3.23: click properties of IPv4, select obtain IP or DNS

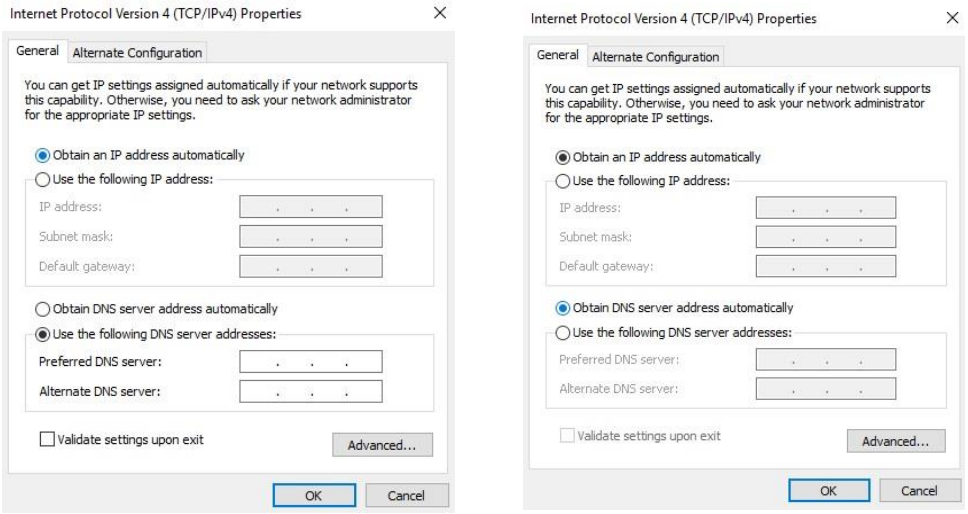


Figure 3.24: Select obtain IP and DNS automatically

3.3.8 DNS Server Problem: I also learn how to fix the DNS server problem. Some time we face this problem. Some time we can't brows any website but we still connected with the network. And the browser show as "This site can't be reached".

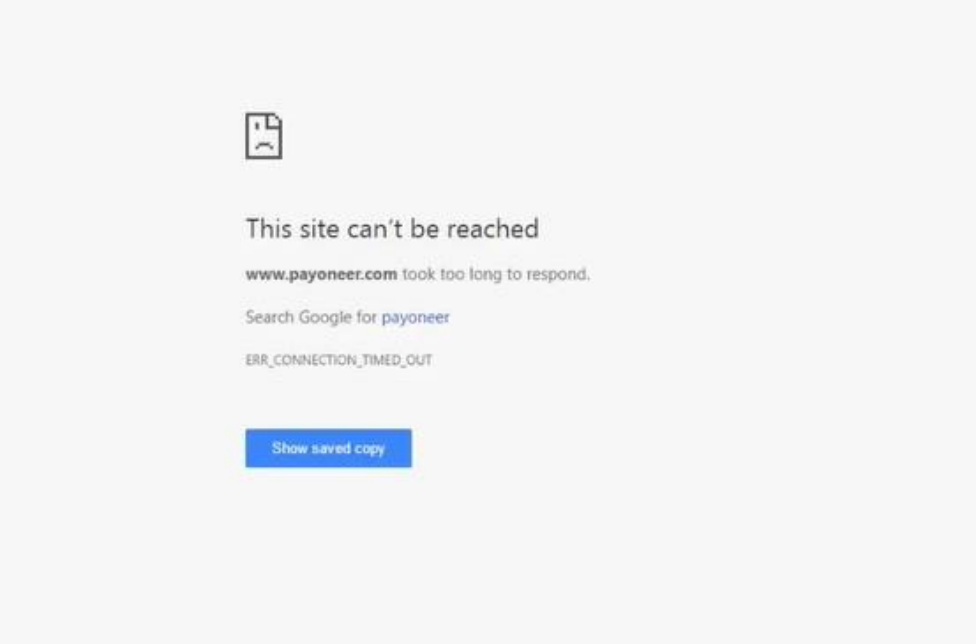


Figure 3.25: site can't be reached

In that case we solve the problem using the "cmd" mood, first we open the run option, then write cmd and click ok button. Then a cmd window will open then write "ipconfig/ flushdns" then press enter. Then write "ipconfig/ registerdns" on cmd and press Enter. Then again write "ipconfig/release and press Enter, then write the last command in to the command prompt "ipconfig /renew"

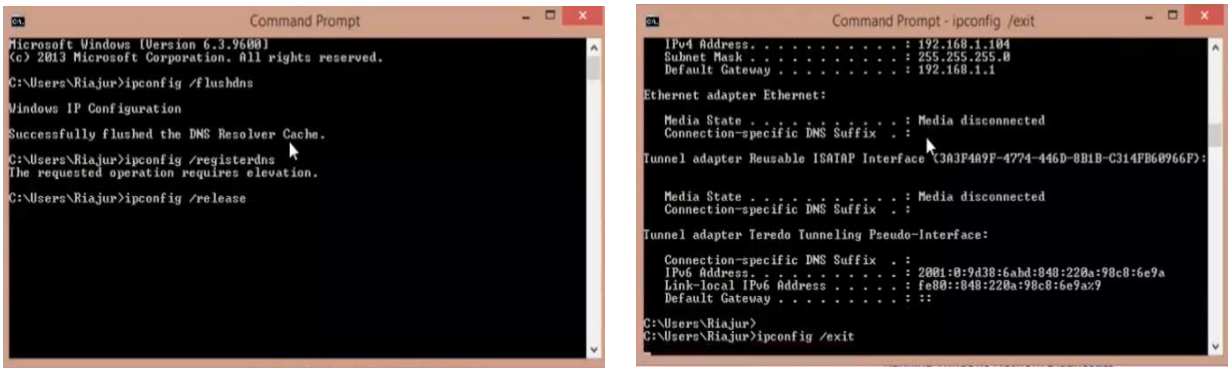


Figure 3.26: cmd – ipconfig/flushdns, ipconfig/registerdns

Figure 3.27: cmd – ipconfig/renew

So we can solve the DNS problem using those command in cmd [9].

3.3.9 To find what is my IP: Many times in the workplace we need to know the IP address of our computer. Most of the time we need IP address for remote access. So we need to know how to find the IP address of a computer. First we open run option or press “windows key + R”, then type “cmd” and press enter. Then a command prompt will open. Then type IP “config” and press enter. After that we will see what the IP address of any computer is.

Figure 3.28: cmd – ipconfig

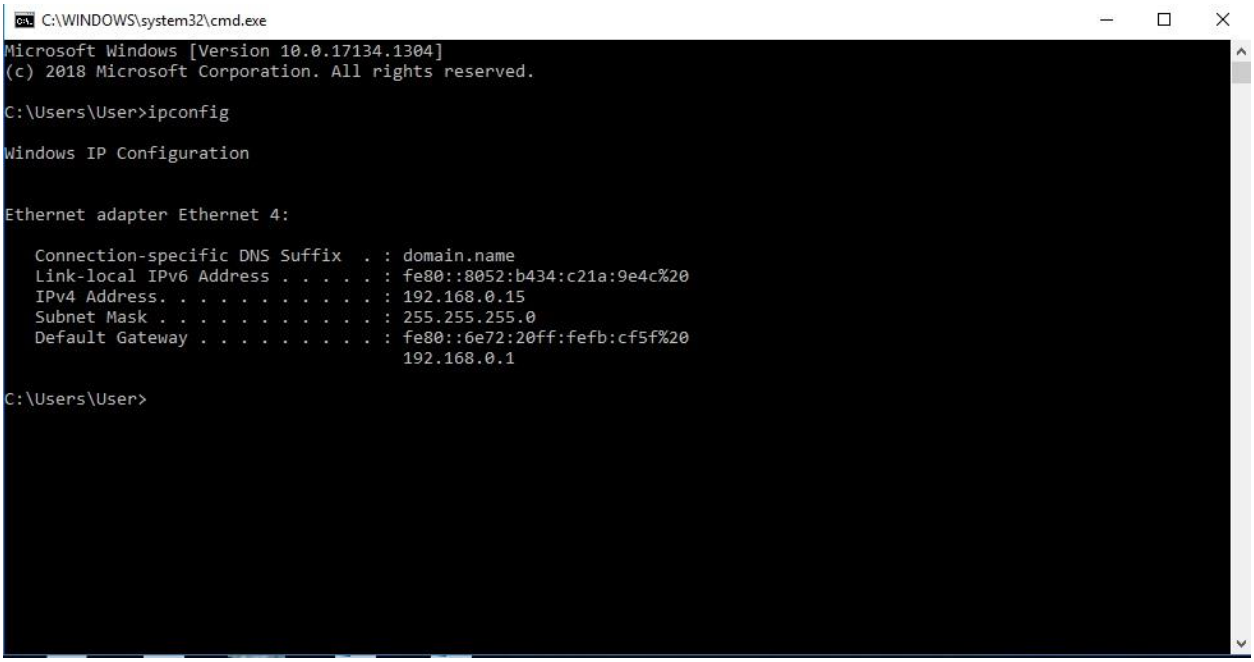


Figure 3.29: cmd – ipconfig/result

3.3.10 Blue screen of Death: Blue screen of death is a well-known problem to us. Some time we face this problem. The computer show an error massage. That "your PC run into a problem and need to restart".

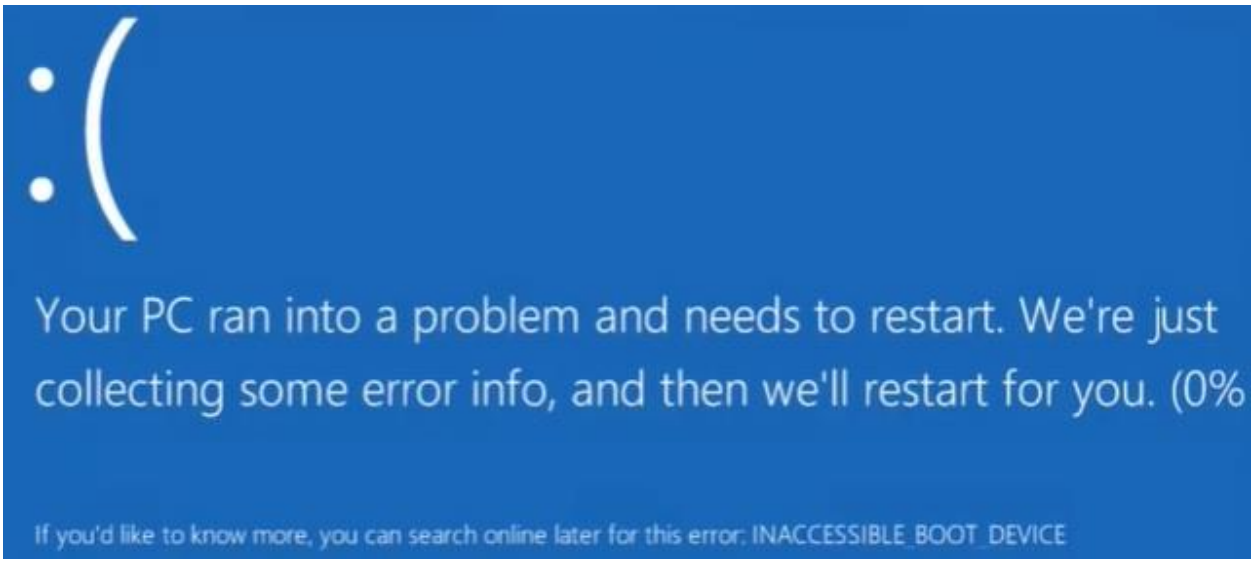


Figure 3.30: Blue screen of Death

The error also called “INACCESSIBLE BUT DEVICE”, now I discus about the inaccessible but device error/Blue screen of death. To fix this problem we must need to follow some instruction. I am also follow an instruction. First I click on the “Advance option”

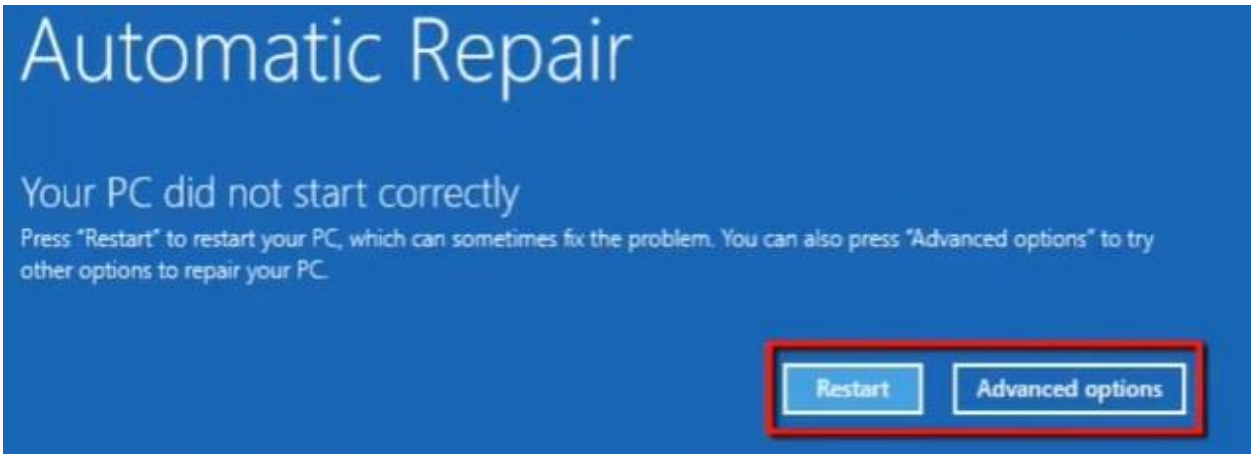


Figure 3.31: Advanced options for fixing Blue screen of Death

Then we see three option continue, troubleshoot, Turn off your PC. Then click on troubleshoot after that we see more fore option “ Refresh your pc, Reset your pc, Microsoft toolset and Advanced options”, then click on the “Advance options”. Then click on Administrator. Then a command prompt has been open.

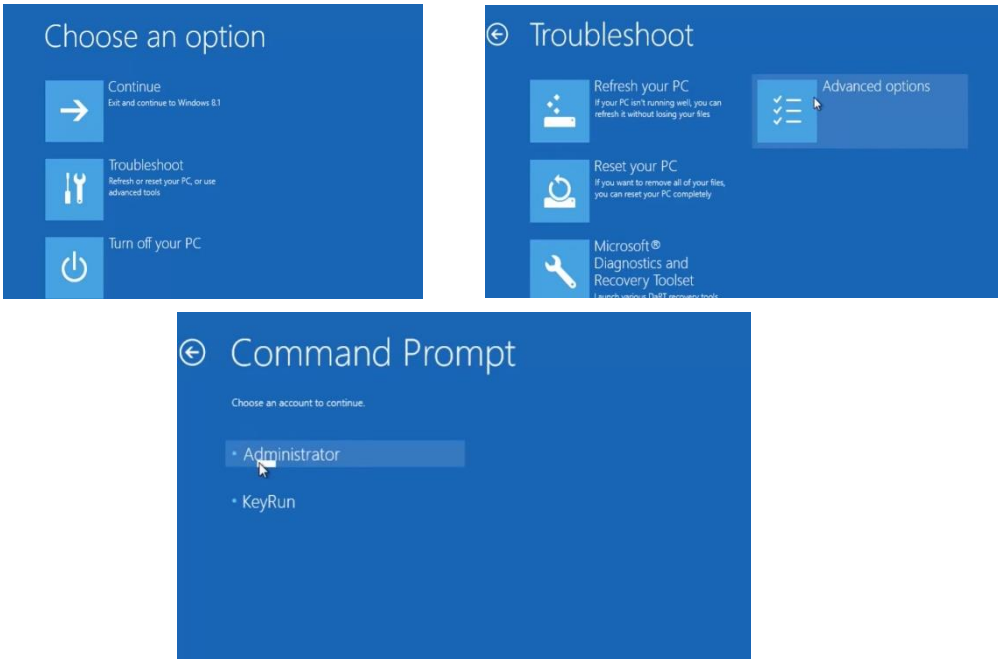


Figure 3.32: Troubleshoot of Blue screen of Death

Then type “C:”, then type “>CD windows\system32” press enter then type “CD config” press enter. Then type “CD RegBack” press Enter. Then type “DIR” and press enter.

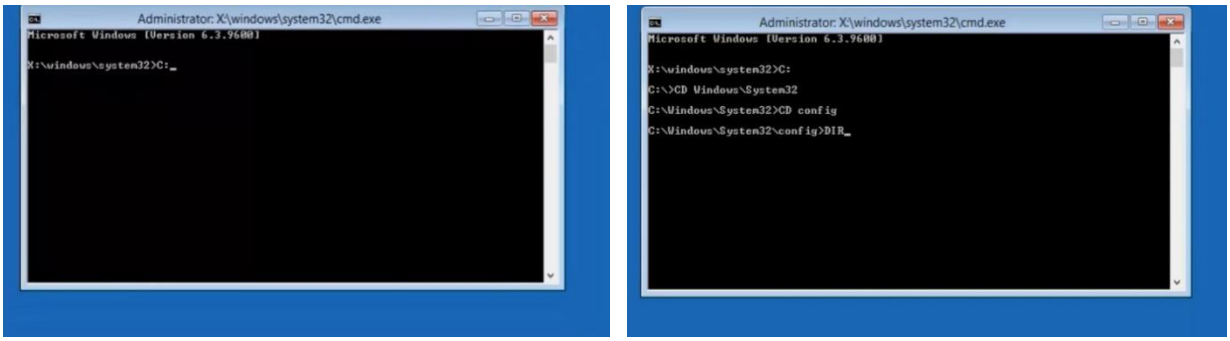


Figure 3.33: Command prompt of Administrator

Then type “CD RegBack” press enter, then type “DIR” then press enter again.

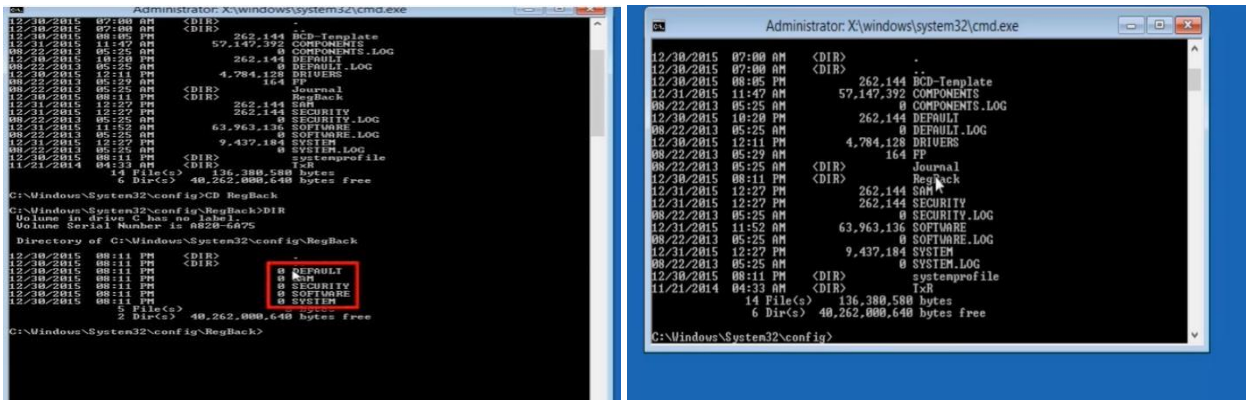


Figure 3.34: Command prompt of Administrator

In this register backup folder there 5 backup folder “DEFAULT, SAM, SECURITY, SOFTWARE, SYSTEM”. Now I change the directory files name. So I back to the directory type “CD..” then type REN DEFAULT DEFAULT1, REN SAM SAM1, REN SECURITY SECURITY1, REN SOFTWARE SOFTWARE1, REN SYSTEM SYSTEM1 and press enter. Then type “CD RegBack” then type “copy *C\windows\system32\config” and press enter. Then type Exit and turn off the PC. Then start again and the problem is solved [10].

Figure 3.35: After Troubleshoot of Blue screen of Death

3.4 Challenges: Internship is always a challenge for a student but when it comes for me I have taken it as an opportunity and pushed myself to work with the flow. I have faced various situations and events where it was new for me. I have found out new ways of accepting my problems and look forward. Through this internship I have learnt new ways of viewing challenges as my fellow superiors guided me through everything.

"Smart B" is an organization where various they are known for solving networking problems and troubleshoots. So it was really a challenge to start my days while I was new. But after few weeks it became very usual and common for me to go with the flow. I have never ever complained about any situation while I was doing internship because I never want my respected teachers get ashamed for me. I pulled through that situation and achieved what was needed.

Though I was a rookie they treated me like their own and gave me the opportunity to take challenges myself by working on various projects, such as cabling, RJ clipping, land network, WiFi network, router configuration and many types troubleshoot of hardware and software.

I am happy that I have managed to balance my work with my university studies. It looks like hard works have been paid off. The Professionals were very helpful through all the situations. I am glad that I got an opportunity to work as an intern.

Chapter 4
Competencies and smart plan

4.1 Competencies Earned

As I have worked as an intern at “Smart B” company I have learned various things and I think I have earned competency. I know I am not the judge but you will find it when you give me any task. I have learned to complete the task at any circumstance any time. I have earned the quality and I think I can use my experience to learn and do more works. Every intern dream of earning competencies because they only get the change when they start their internship program. As for me I have worked on various other companies and now I have done my internship formally I can easily claim that I have achieved my internship goals.

4.2 Smart Plan

A good planner is always known to be a smart person but a smart person can sometimes make mistakes with planning. I have learned various things and got the opportunity to work with the higher ups of “Smart B” company who has shared great experiences with me. I have now taken a step of becoming a perfect in Networking and I will work for it. I have made various plans for future but my main plan is to take few more years and learn as much as I can to develop my skills. I want to be that Engineer who has the quality skill to withstand any situation he has put through. I am also planning for a career in networking in future. I have targeted Cellphone network companies as my dream. I want to reach the peak of its head engineers. I will also try to get attached with Xiaomi Company and work as their UI developer.

4.3 Reflection

If I reflect what I did on my internship I can only say that I have learned many things and got the opportunity to work on different platforms and situation. On field experience is much needed when we professionally join any job. I also got the opportunity to solve some of my personal weakness and come round by working there. I can now easily say that I have got a great chance to show my skills and efforts. I have also got the chance to show how dedicated I am and I have come to know what will I do in future and set up my career.

Chapter 5

Conclusion and Future Career

5.1 Discussion and Conclusion

Completing this internship, I got to learn many things which are showed on the report. I got the opportunity to work on the networking sector of Smart B. It is a vast system and taught me many things. I got the opportunity to improve my skills in router related works. I have also included some other works which I learned. I worked on various situation. I got to learn how to follow orders and maintain time and work as a professional. It will help me to start a career and my passion is computer. I think this intern gives me a push above all other batch mates. I am pretty lucky to work on "Smart B". They changed my view of work and change of daily life. I am thankful to my mentors of "Smart B" they helped me with every steps and for them I am now aware of my current situation and thinking of my career.

5.2 Scope for the future Career

There is always scope for the future in this department. If I talk about me I think I have a very competitive situation. There are lots of students who are very good with studies and work and there is a big competition. I am positive that I can mix with them and work properly. I can find various organizations which are ready to give me the platform to work. Bangladesh is now a developing country and there is a lot of option for this career and I would like to work with network in future. I have got the chance to build some solid relationship with various people through internship which pushes me to reach my goal. I think I am very positive about my career.

Appendix

Speculation: My internship was pretty easy because I had a good amount of experience through my full time jobs at various places. Though I had experience I had learned many things which can be reflected at my report. I have mentioned some of my findings and experiences which are blessings for me. A person must have the skill to do his/her work properly and through internship we can learn what is skill and how can we use it. I think the knowledge we learn from on hand experience are very much important as traditional learning. We are always looking for easy methods but we did not think that if we try the process which is written on the books are easy to implement. Out fundamentals have given us many information which is very useful now. My internship taught me how to implement plans, how to react on unwanted situations, how to be an honest person. It also showed me different ways to reach and react to problems. I had the opportunity to see through some issues which were not taught on our courses which is real life experience. Internship is a place where we use our knowledge which we gained for four years and implement those.

Organization Details: 'Smart B" is a very optimistic organization which helped me to learn and work together. They allowed me to work there at full pace. They are also very keen to accept new requirements and they are happy that students apply for internship. They are very humble and widely accepted among the industry. As an organization they are still very young and they have great chance to flourish. As they allow various interns, they also give extra emphasis on that intern.

'Smart B' is a company which is mid-level based on their works and they provide different types of service to the customers. Smart B does various services such as:

- Web Design
- Digital Marketing
- Android Development
- Catalog Management
- Search Engine Optimization
- Technical Support

Smart B (Smart Business and Smart Technology) Rupayan Center, 72 Bir Uttam AK Khandakar Road, Mohakhali, Dhaka 1212 Phone: +8801736212525, Email: info@smartb.com.bd Website: https://smartb.com.bd/

Reference

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Chapter 1

INTRODUCTION

1.1 Introduction

In this time we can't think without IT solution and Networking. In everywhere we must need internet. There are not many office, industry and institute without internet. Every industry, office and institute must use computer and communication device. They use internet for the communication. They use many types of Hardware, Software for better communication. In this time on this world we never think of doing anything without internet. Every industries, offices and institutes need many people who knows Networking and maintain all kind of communicating device. It is a very important part of any Organization, People who maintain all kind of communicating device are very careful about this part. If there any industry which has their network down they can't communicate each other. It may create many problem. And this is very harmful for any industry, office and institute. I think everyone must need to know how to use all kinds of communicative device. The main part of IT solution sector is maintaining all kind of device which are connected with internet. And networking refers to linking multiple devices which can share information and software resources. I got the opportunity to do intern on this sector, I have learned many things and solved many situations. I have also got hands on training from respectable superiors who have vast experience on this particular sector. I find it pleasing and fascinating to learn and work on those which were my passion. It was an honor to work in this sector and learn my weakness.

1.2 Motivation

I find it rather amusing when it is hard and struggling to work. There are situations which need both mental and physical dedication. We humans find our work very boring but it is not in my case. I do what is my passion and my passion is computer. I find it very pleasing to solve the riddles and problems. The motivation comes from my childhood experience with old generations of computers and games. When I first used internet I found something special on it and I started ways to get closer to it.

1.3 Internship Objectives

The goal of this internship was I want to become a Network and IT Engineer. In this world there are no any industries without Network and IT officer. In everywhere they must need a parson who batter know about Network and IT related issues. Networking and IT support is very challenging and hardworking job. It is very sensitive job. The support officers are needed to be very careful when they doing this job. Most of the time the whole office dependent on IT support team. A support officer must do up to date every single devices hardware, software and maintain the network properly. I am to accepting the challenge and trying to be a great IT support engineer. I wish it help on my upcoming career. My objectives are not only just doing job in this platform, but also I will trying to be making something new invention for the better future.

1.4 Introduction to the Company

SmartB (Smart Business and Smart Technology) is one of the new uprising leading IT farm in Bangladesh Science 2017. The company offering many things like Web Develop (Corporate websites, Online stores, Customized software's), Mobile aps Developments, SEO, Promoting (Facebook Advertising, Google AD Network Management), Catalog Management, Corporate Branding and Technical Support.

Origination Information
Name: Smart B (Smart Business and Smart Technology)

Address: Rupayan Center, 72 Bir Uttam AK Khandakar Road, Mohakhali, Dhaka 1212

Phone: +8801736212525, Email: info@smartb.com.bd

Website: https://smartb.com.bd/

Figure 2.1 Smart B Logo

Company has prepared hundreds of market research studies and business plans. Managed over 15 Catalog, Developed about 40 sites, promoted hundreds of social accounts and Automated over 3 Business. [1]

1.5 Report Layout

Chapter one: Here I described about my internship, Why-How-Where I did my internship, The reason behind and the goals I achieved.

Chapter two: Here I described about the organization I did my internship, How they operate, what they offer and chain of command.

Chapter three: On this chapter I described about the situations I have experienced and the works which I did, I also mentioned my projects and many challenges which I faced during my daily routine.

Chapter four: This chapter shows what I planned for my career and how I would like to continue and how this internship connects me with my career.

Chapter five: Here I have described what I am planning in future to do and take as my career, how the internship affected me to build my career in future.

Chapter 2

ORGANIZATION

2.1 Introduction

SMART BUSINESS, SMART TECHONOLOGY (Smart B) provides Tech service in Bangladesh. It is one of the leading organizations in Bangladesh. It has been providing all kind of Technical support and service, like Web Design and Development, Android Development, SEO, Digital Marketing, Catalog Management. It also provides computer and Network management, Troubleshooting Hardware software of computer and networking device. They are not just making Websites and Applications only they also create many types of effective tools for Business. Smart B can help their clients in three unique ways, they build system, maintain and they support.

2.2 Product and Market Situation

Smart B provide many types of Technology services, like Corporate Websites, Online Stores, Customized Software's, Unique Project, Android Mobile Apps, iOS Mobile Apps, Mobile Mockups, Mobile Cloud Management, Facebook Advertising, Google AD Network Management, Local Network Advertising, Online public Relation Management, Google Business Management, Search Engine Optimization (SEO), Content writing, Keyword Research & Rank Track, Web Admin & Analytics Management, Product Description Writing, Social Media Management, Hardware Troubleshooting, Office Data Security, On Call Computer repair, Free Software upgrading.

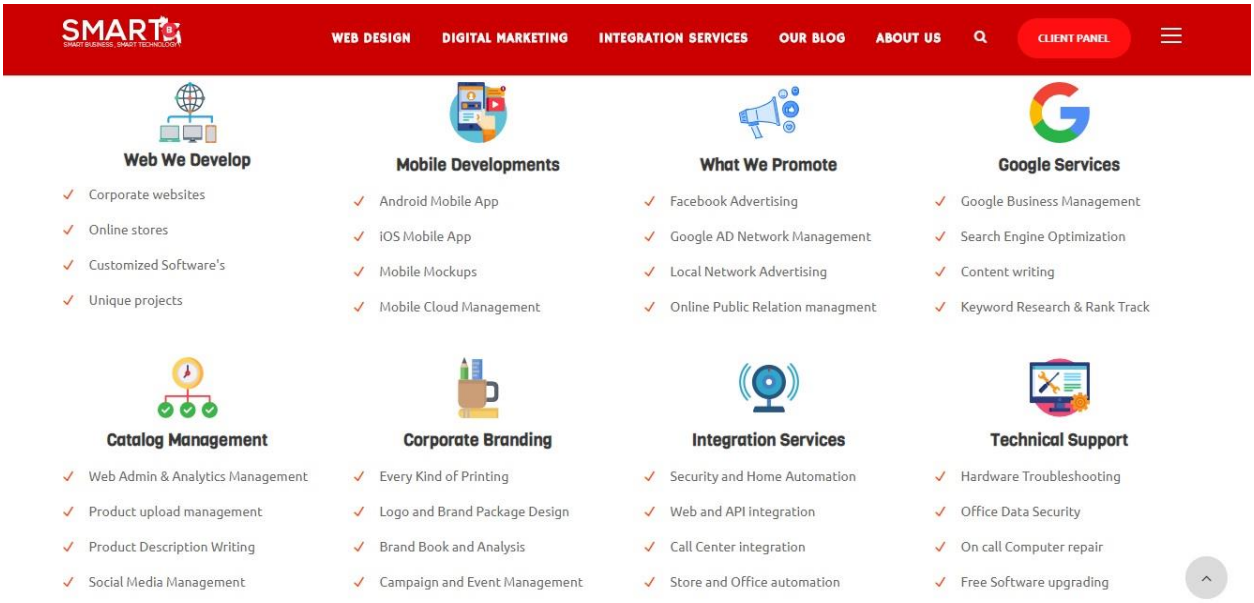


Figure 3.1: Smart B Services

2.3 Target Group

The Smart business, Smart Technology (Smart B) Work with various industries, Organization and company below.

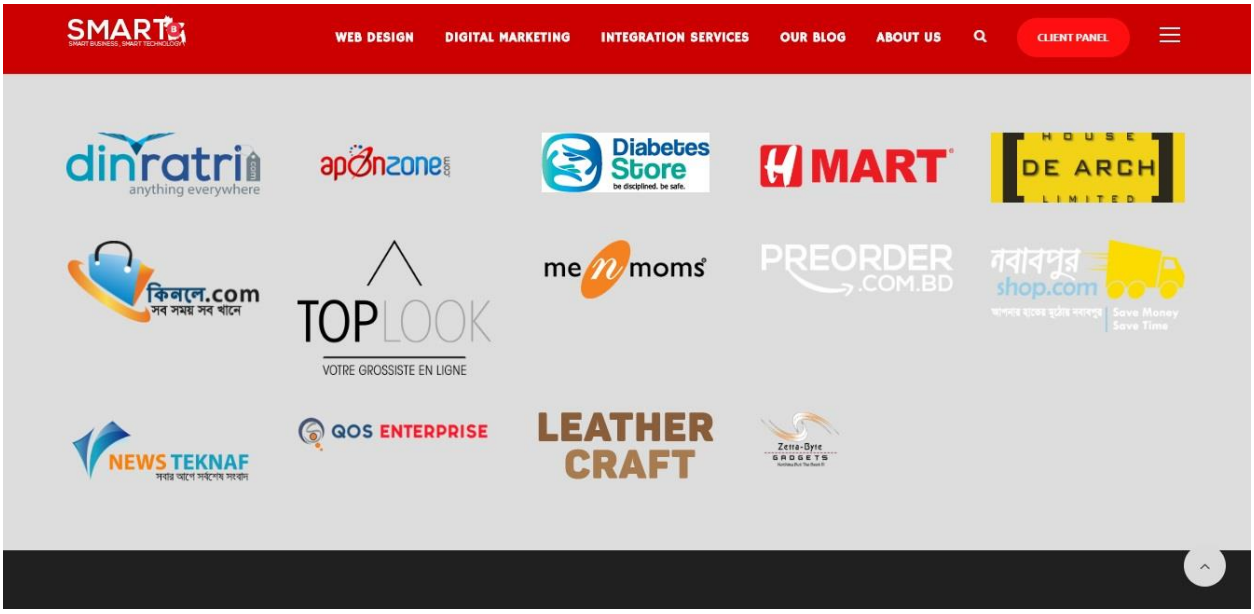


Figure 2.2: Affiliated Company

2.4 SWOT Analysis

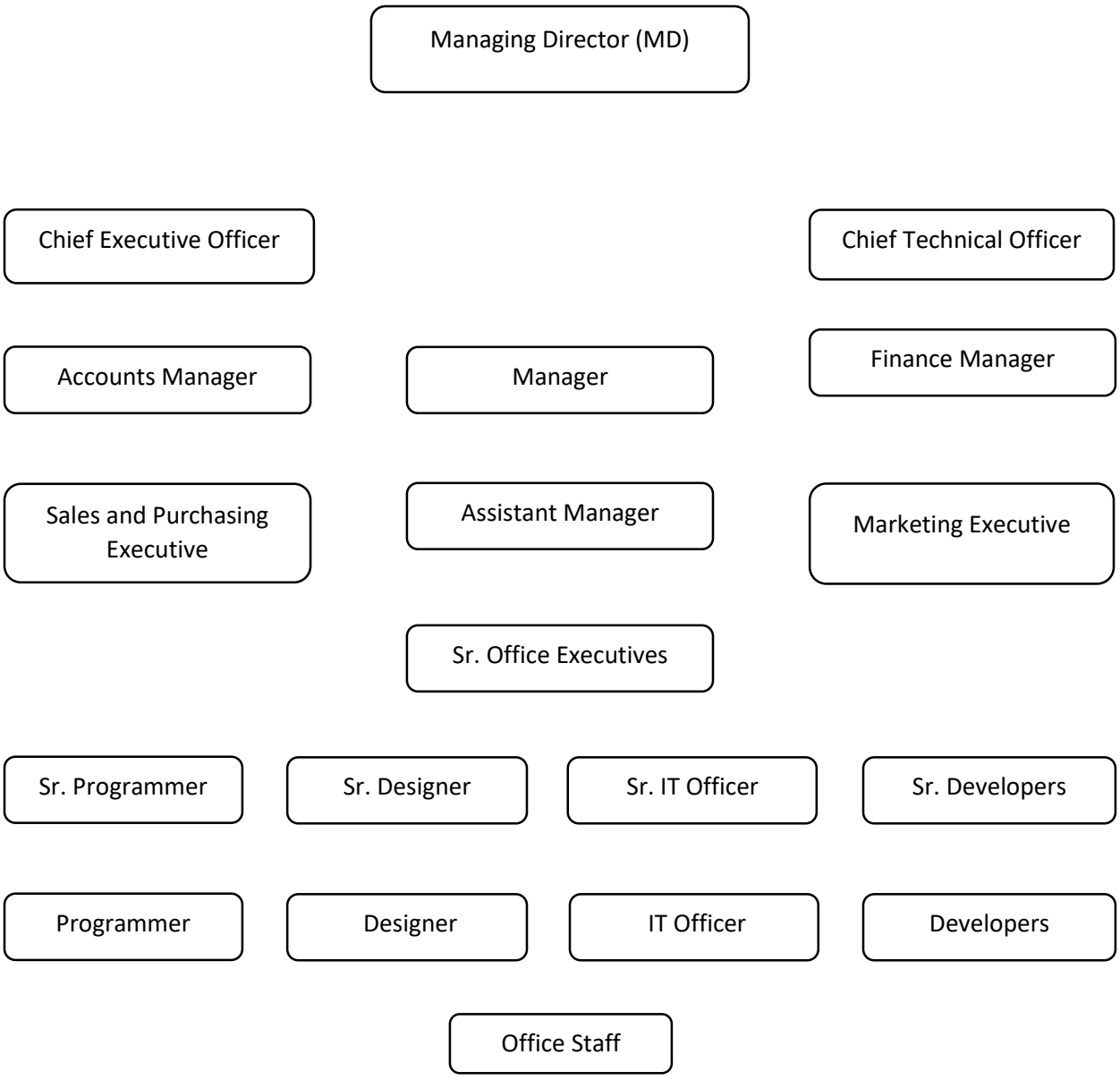
Strength Weakness Opportunity Threat analysis is a very essential factor which helps us to find various important information about any industry or company. For this particular organization we can see there are more strengths and opportunities than weakness and threats. “SmartB” is already a renowned company which is very strong at Web developing and android software development. They are quite popular at giving technical support and they have good human resource. They have many competitors which is a big threat to them and they are lacking on financial resources which is a weakness. “SmartB” is a company which is now giving its competitors a big run for money as it is giving its customers quality service with less money. They are offering different types of service which is very handful among all. It is tough now a days to find proper service.

If I think about the company I can say this company has a great future because of its Human Resource and better management. As I was and intern there I cannot completely assure what I found but I can relate my information here.

2.5 Organization Structure

Organization chart

Table 1.1: Organization chart



Chapter 3

Task Project and Activities

3.1 Daily Task and Activities

As I was an intern I had to learn many things which are not taught in the traditional teaching process. I had to learn quite a few things under the sleeves of my seniors and mentors. Sometimes I had to work more than my duty hours. My duty hours was 36 hours per week. And I had to reach the office within 9 am and leave during 3 pm. First of all I had to do some essential activities which were; attendance, to do list, checking order list and many more.

My first month went learning many things with hands on experience. Dealing with situations which are not accustomed and finding new ways of doing work. My daily task were related up to date with all network connection and IT device. I must check all internet connection. Do support all kind of IT related device, check the update for system software. I had to make sure that every computer or Laptop run properly and smoothly. This task is the most challenging for me, because the huge number of Computer or Laptop Users. The whole office spent very busy time every day. Sometimes I faced many types of trouble and tried to solve all carefully. The main responsibility is to supervise the implementation and maintenance of company's computing needs.

3.2 Event and Activities

When I was doing my internship I attended all Event and training programs. It's very helpful for me and my career. I have learned lots of things, solved many problems and troubles. I learned how to configure Router, How to manage a router and provide internet properly. I also know about the office environment. It is very important to every intern. Thru this internship I learned how to manage an office and how to work in a corporate place. "Smart B" organize many Event programs and provide many trainings for their intern. I configured Mikrotik router and also distribute network properly. I learned how to troubleshoot in a computer, Setup OS (Operating System), LAN, MAN, WAN also I learn how to build Wi Fi Network, Manage Clint and System Server, Clint Server, Storage Server. I also learned how to maintain CCTV.

They make sure that every intern can learned properly whole of the working procedure. And day by day they can adjust on the office environment.

3.3 Project Task & Activities

As I was an intern I got the golden opportunity to sit and learn many projects. After that I was given the chance to work on projects. I was given various tasks and I have completed those all. My activities are fully based on the tasks which I was given. At the beginning of my internship they taught me a lots of things like.

3.3.1 How to patch a CAT 5 cable: Here is a demonstration. First I take a CAT 5 cable, peel the cover of the CAT 5 cable, arrange it orderly by color subs as Orange white, Orange, Green white, Blue, Blue white, Green, Brown white, Brown.

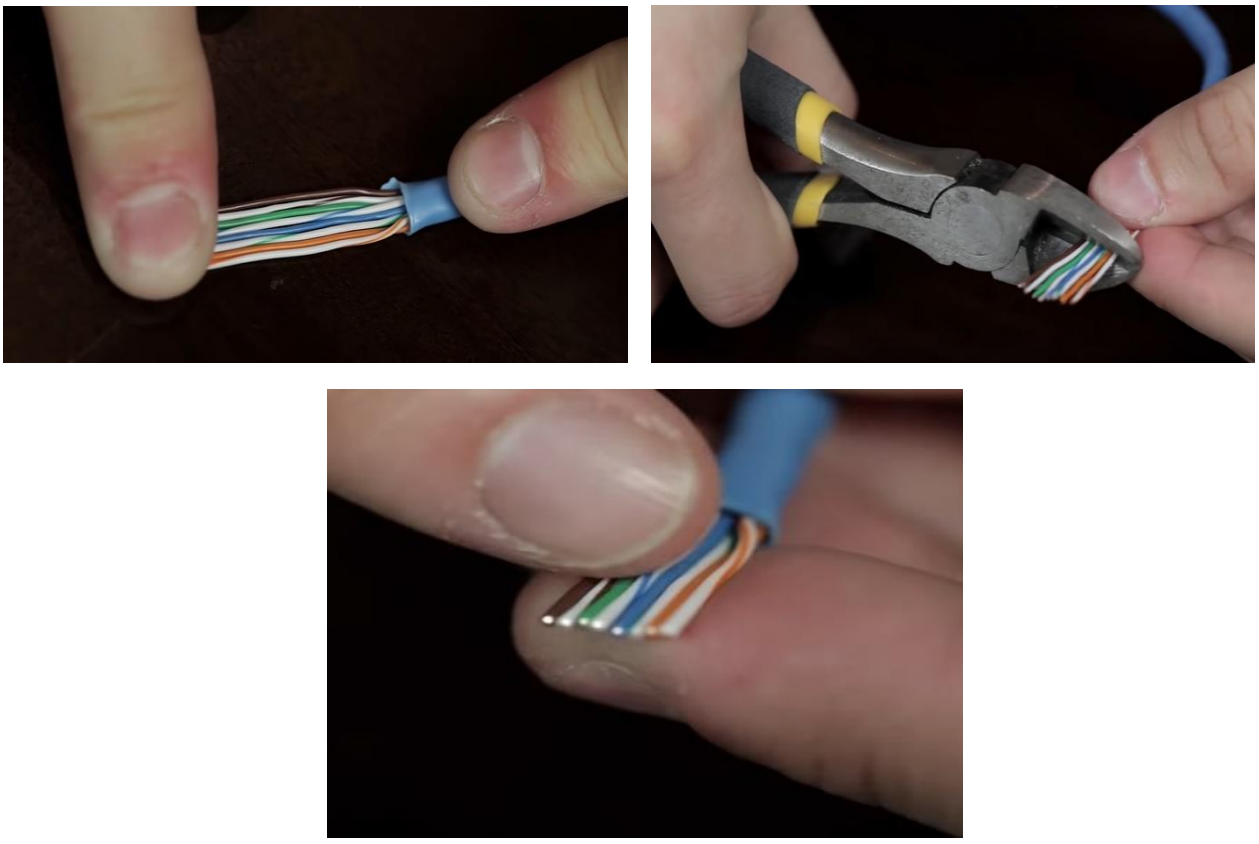


Figure 3.1: Arrange CAT 5 cable

And I will cut them orderly and put it into RJ45 connector very carefully.

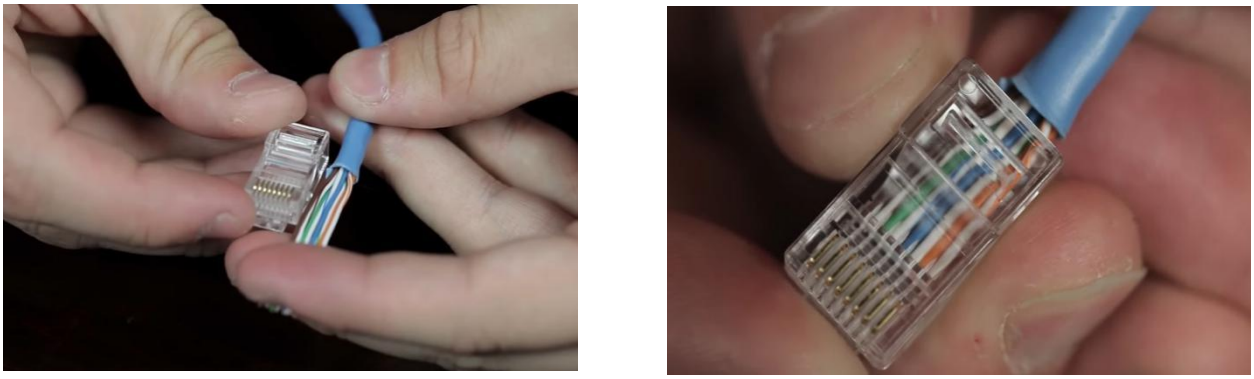


Figure 3.2: Put CAT 5 cable into RJ45

Then take RJ45 clipping tool, put the connector into the RJ45 clipping tool. Then press the tool carefully, after that the patch is complete. [2]

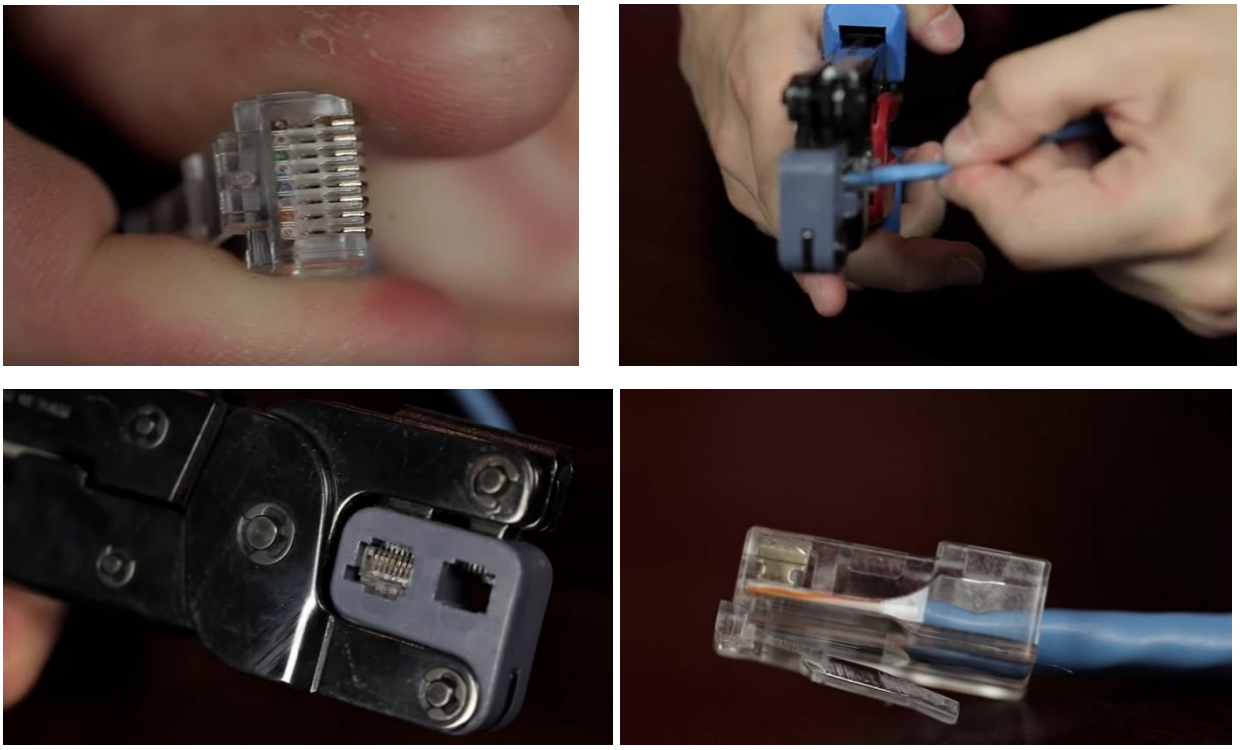


Figure 3.3: Patch RJ45 connector

3.3.2 Create a LAN Network: Then I learn how to create a LAN Network. To create a LAN Network first we need CAT 5 or CAT 6 cable. Then we need a RJ45 clipping tool, RJ45 Connector and a Network switch. The Network switch is depend on how many connection we need. If we need to connect 15 PC then we need 16 port or 24 port Network switch.

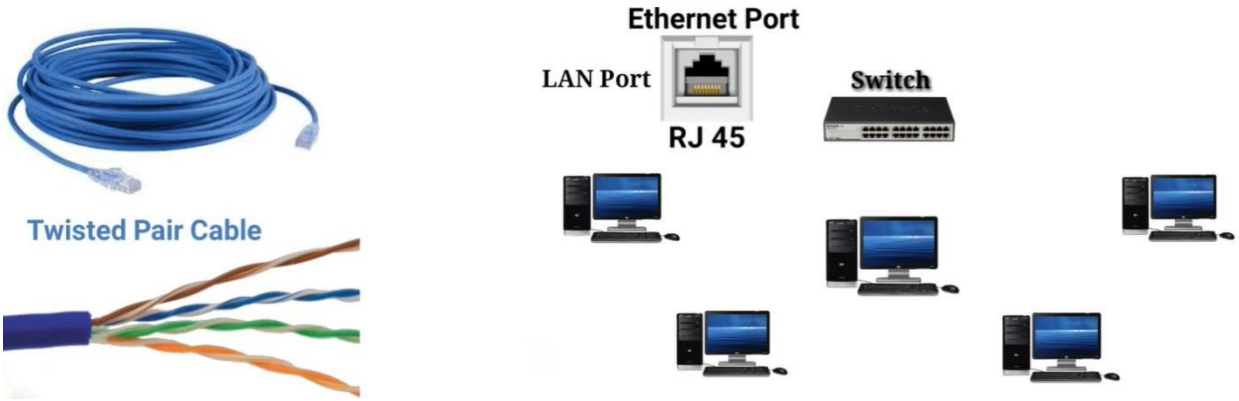
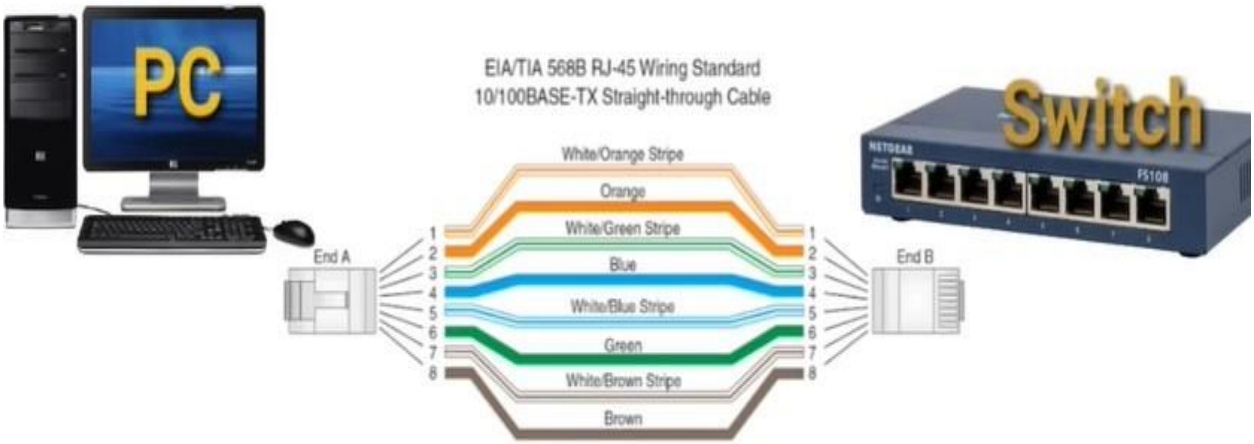


Figure 3.4: CAT 5/CAT 6 cable, Network switch, PC

After collect all equipment we start the work. First we need to know how many pc we need connect, then we cut the ware as our need, Patch RJ45 connector and connect all PC into Network switch. So in this way we completed the LAN Network work. [3]



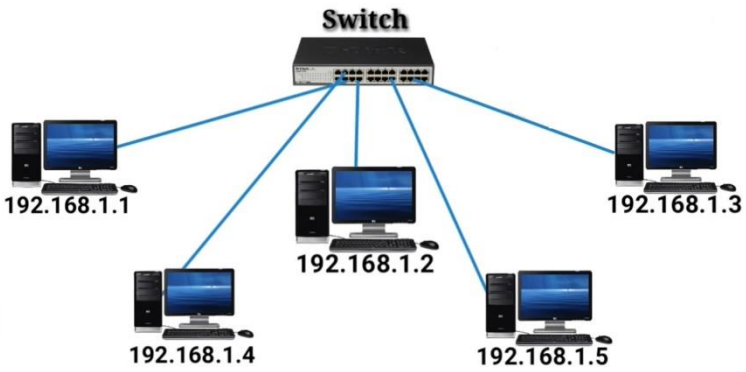


Figure 3.5: LAN Network

3.3.3 How to configure a Tplink router: After completed LAN Network connection I learn how to configure a Tplink router. First I need a Tplink router, then I will connect the router into the power. After connecting power I connected the either cable into the WAN port. Then the internet connection will connected into the router. After that I need to configure the router. I will turn on my laptop and go to the wifi menu and search the router "TPlink" and connect it by clicking it and entering the password.

Figure 3.6: Tplink router

Figure 3.7: Configure Tplink router and entering the password

After connected with router, I open a search engine in my laptop. Then go to browsing option. Then type http://tplinkwifi.net, after that a Login window will be open. Then I type user name “admin” and password “admin” then press login button. Then I select “quick setup” option. Then press “Next” button, then select “Static IP” and input IP address into the “IP address”, then input subnet mask, Getaway and DNS server. After input all of this things press “Save” button.

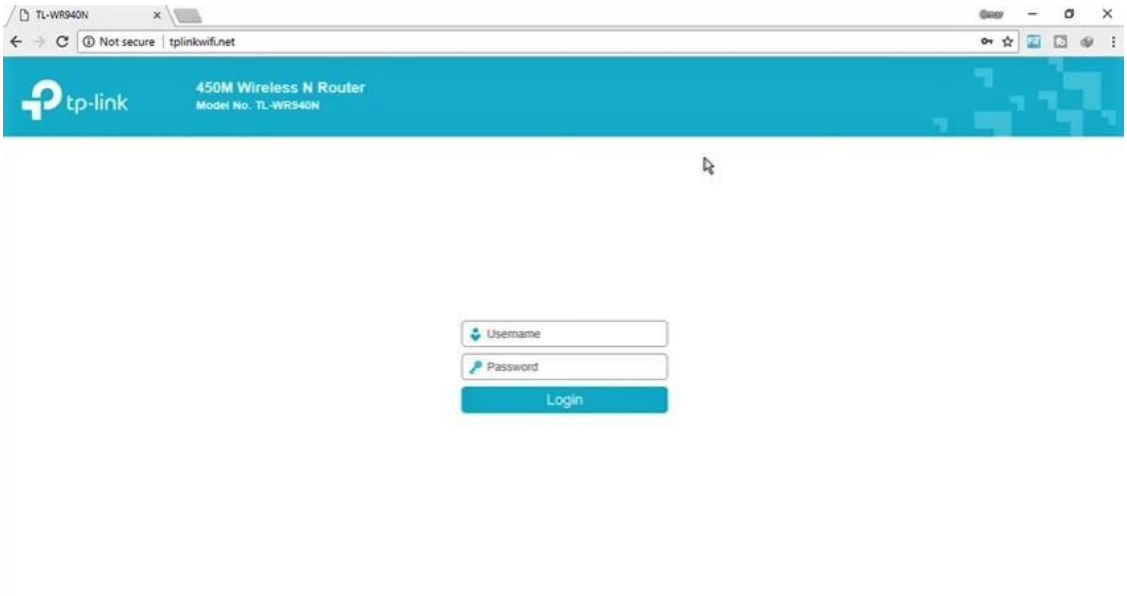


Figure 3.8: Login page

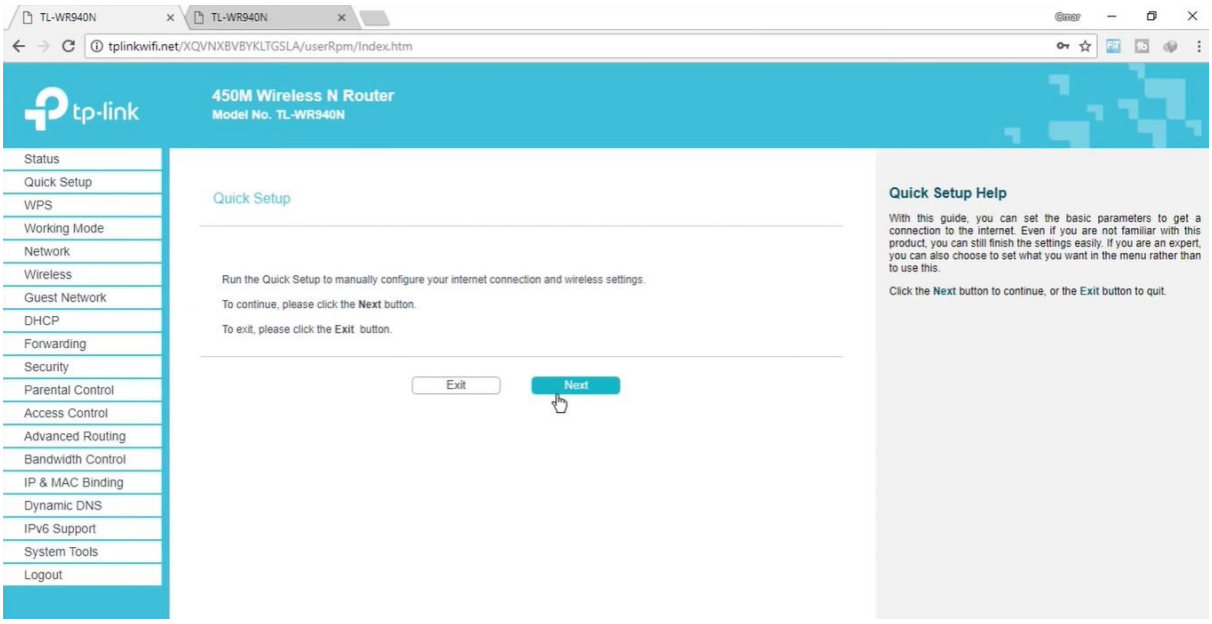


Figure 3.9: Quick setup option

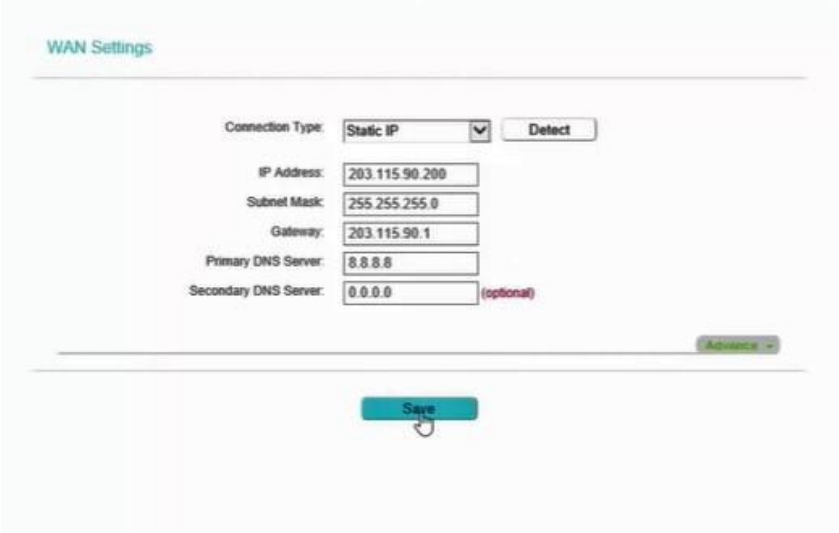


Figure 3.10: WAN Setting

After configuring WAN Setting, then enter the Quick setup wireless option. Then I change wireless Network name, then set a strong password and click “Next”. After all setup status show success then click “Finish” button. This was my fist router configuration work. [4]

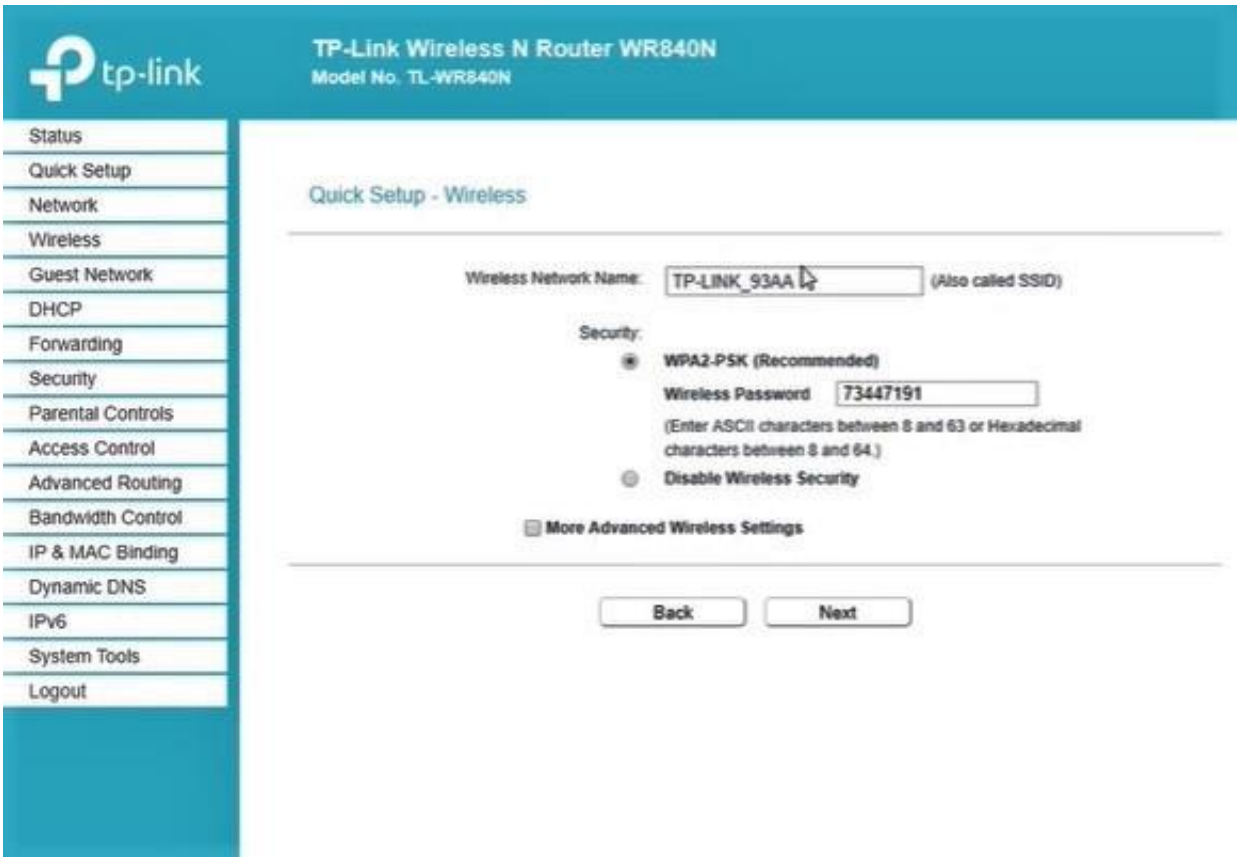


Figure 3.11: Wireless Setup of Tplink router

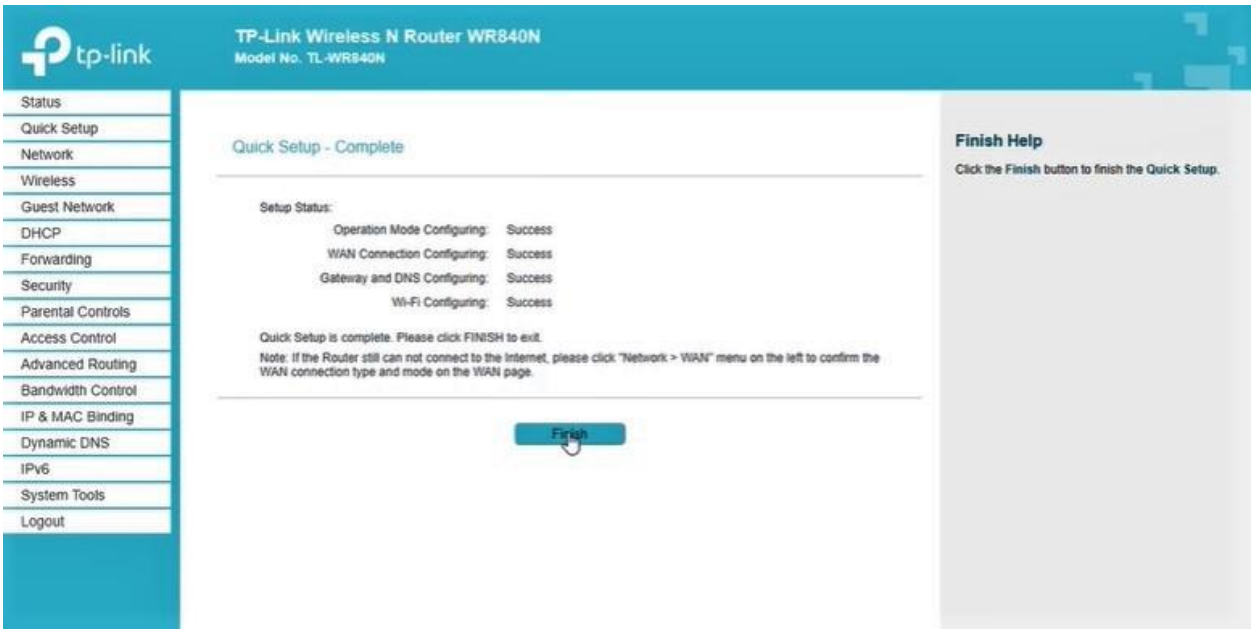


Figure 3.12: Complete the quick setup of Tplink Router

3.3.4 Configure a MikroTik Router: After few works they assigned a task in which I had Configure a MikroTik Router. It was very difficult to me, but my supervisor help me to do this work. The working procedures are given below.

Figure 3.13: MikroTik Router

To Configure (MikroTik Router) first we need to connect the MikroTik router in our CPU. Then we try to enter the MikroTik router.

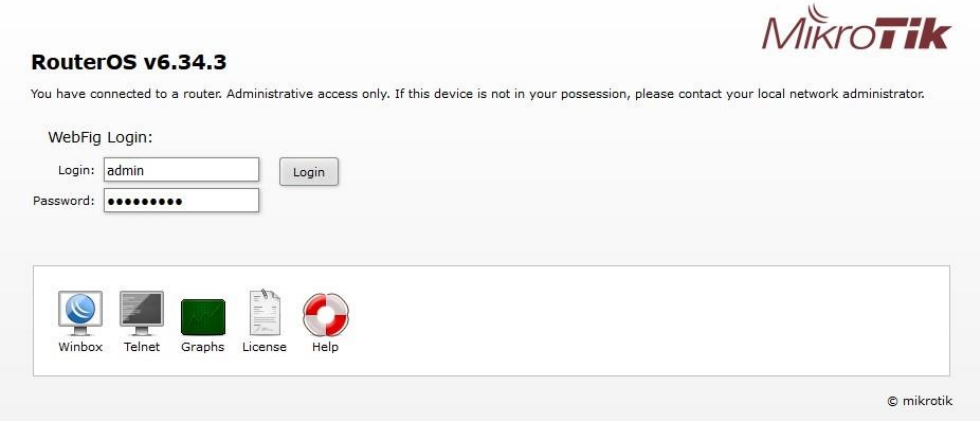


Figure 3.14: MikroTik Router login page

If we want to access and use MikroTik router easily, then we can use WinBox. It is a user friendly MikroTik access control software. Most of Network Engineer use WinBox for work willingly. I also use winbox to configure MikroTik router. The WinBox login Page is given below.

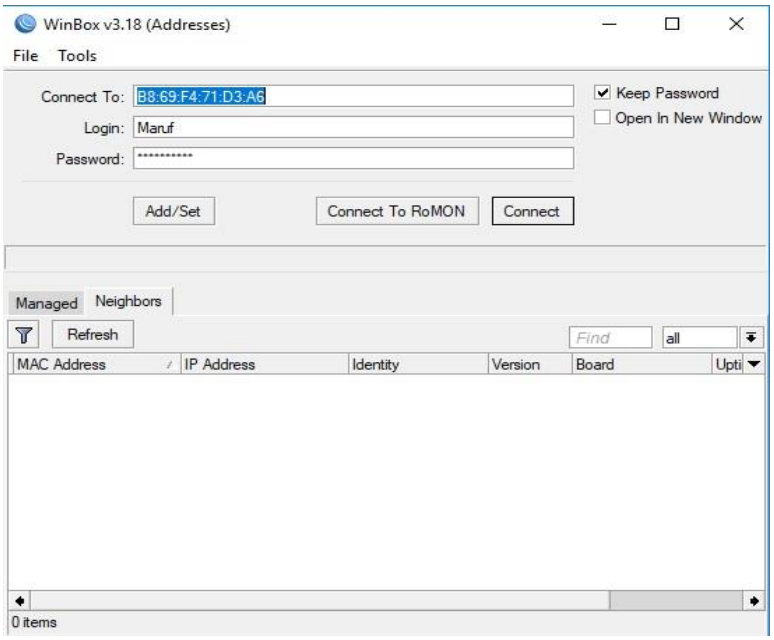


Figure 3.15: WinBox login page

When WinBox log in page is open, then we enter the password and login name or ID and we must enter the IP or Mac address of MikroTic router. When we enter the router then a Dashboard will open. The Dashboard is given below.

Figure 3.16: WinBox Dashboard

For the basic configuration first we need to click “Quick Set” menu. After opening the quick set menu a notification option will open. It shows a warning that if we changed the mode than the connectivity could be lost. Then we press “yes” Button. Then we will change Home AP or WISP AP. We select Home AP, then again a notification option will open. And we will press “Yes”. Then we set the network name of wireless. Then change Internet option “Address Acquisition” select “Automatic”. Then fill local Network options, put an IP address into the “IP Address” bar, then put the Netmask / sub net mask into the “Netmask” and select the “DHCP Server” option. Then put the DHCP Server range like 192.168.5.10 – 192.168.5.254, then select “NAT” option. Then press “Apply” Button, and press “OK” button.

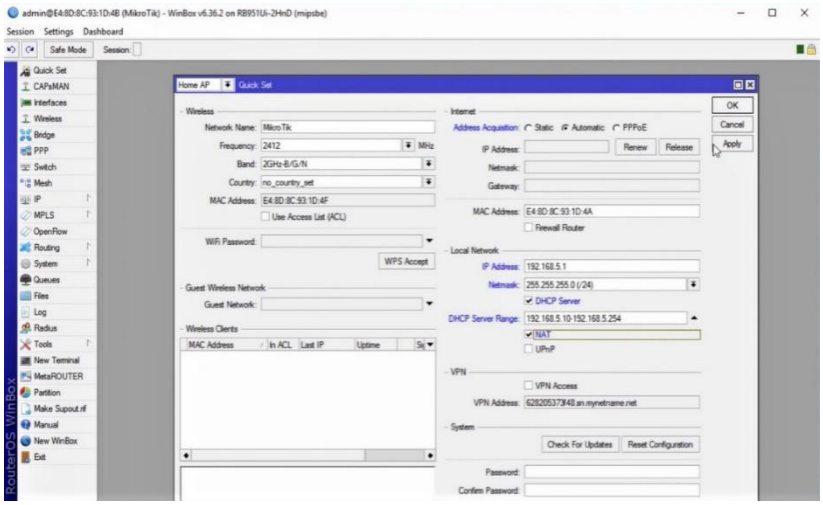


Figure 3.17: Configure Quick Set menu

The Next things Configure Wireless. So click on the wireless and by default we see “wlan1”. Then double click on that, then select mood “ap bridge” then set frequency, select “auto” option. Then fill up the SSID option, it is the name of wireless access point. Then click “ok” button. Then configure the Security Profiles. When we click on that security profile then see already 1 security profile default. So double click on it, and change the mood on “dynamic keys”. Then select “WPA2 PSK” of Authentication Types. Then set a Password into “WPA2 Pre- shared key” then click “Ok” button.

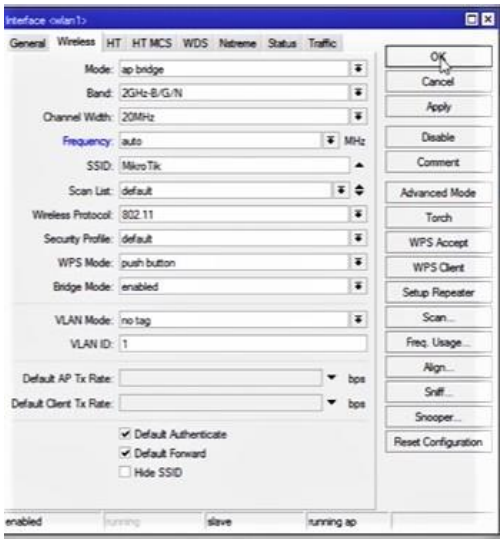


Figure 3.18: Configure Wireless Option

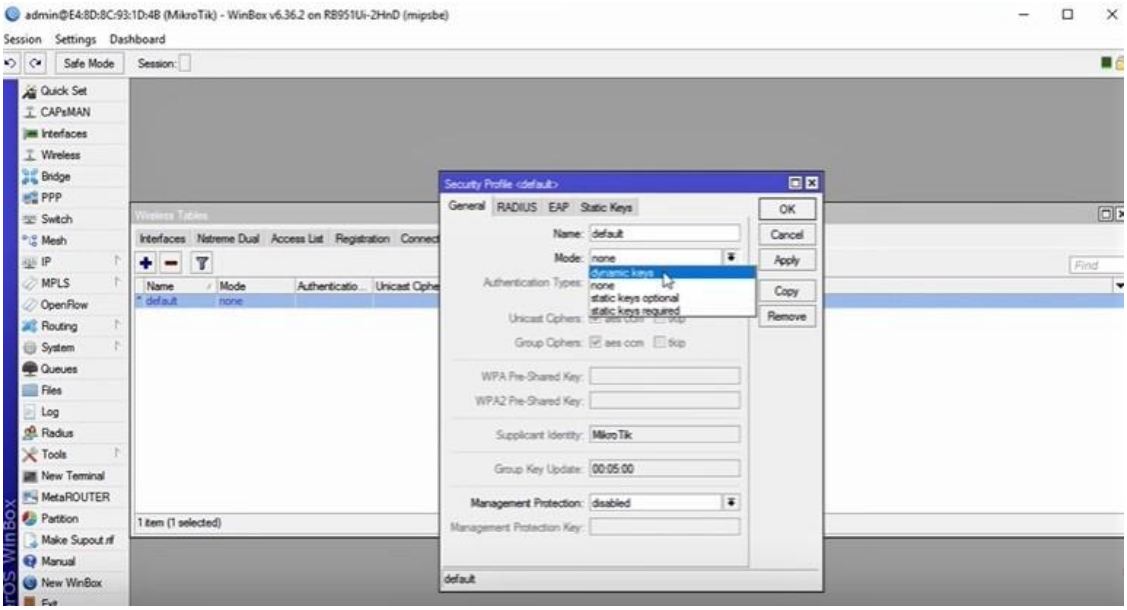


Figure 3.19: Configure Security profile

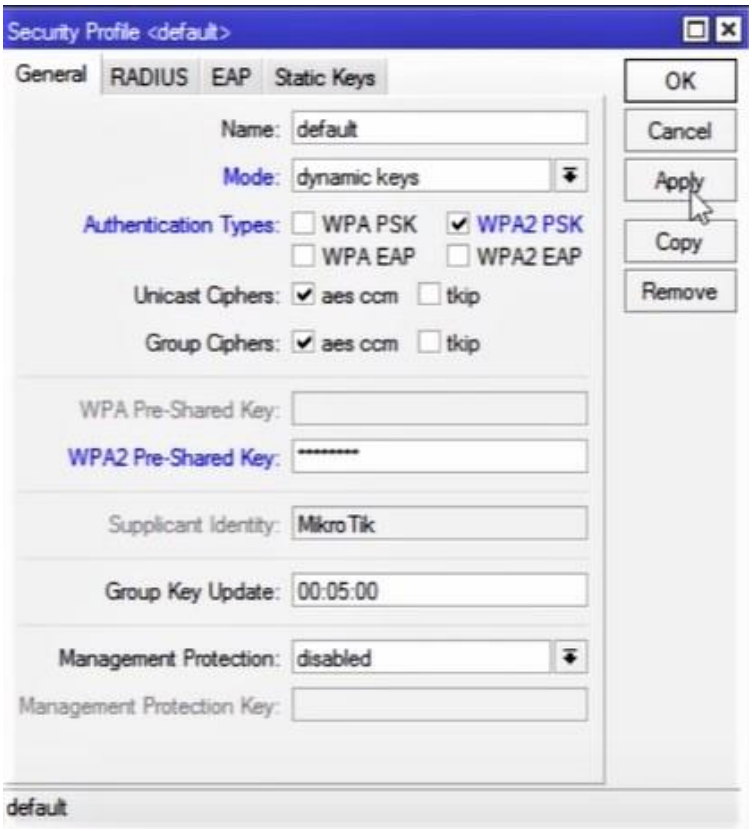
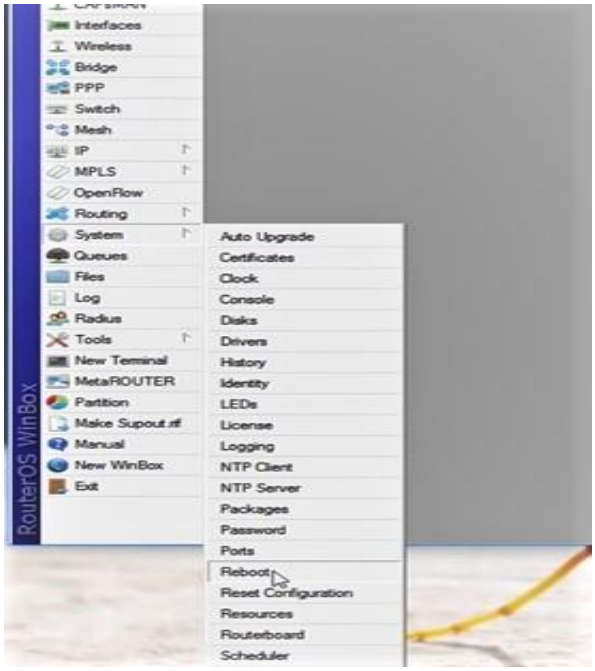


Figure 3.20: Set Password into "WPA2 Pre-shared key"

After done all of work then click on the "System" of left bar, then click reboot option, a notification Alert will open. That ask am I sure to reboot this Router? Then then press "Yes"



"So whole procedure is How to Basic Configuring in a MikroTic Router" [5]

I also learned and solved various troubleshoot of network and routers. Once I was given a task where I had to solve a whole buildings router troubleshoot. It was the main router which was effected but I had to check all other routers to ensure what was the actual problem. Here is a demonstration about the steps which I have taken:

3.3.5 Router Troubleshoot:

Table 1.2: Router Troubleshoot

Router Troubleshoot	1. First i checked all the routers than i rebooted all and configured all. Then i searched for the connection problems.
	2.I found some bad connectors which i also changed and than i connected all other routers. After that i found a wire which was badly torn i had to change the wire along with the connector.
	3.I suddenly got call from the admin who suggested me to find the hub and see if there any problem. There i found a rats mischif and i changed the cable and connector and connected the line.

I also learn some important and common troubleshoot like Computer Viruses, can't connect to the internet, VPN connection Error, DNS problem, ping, IP config, Blue screen of death, DLL file not found, Application running very slowly, Malware problem, Internet network connectivity Issue etc [6].

3.3.6 Computer Viruses: Computer viruses is very common problem. In this world we can't think without computer, every ware we must need a computer for doing our everyday work. When we working in a computer, some time we face this common problem. First we need to cheek the

"Firewall" then remove the application if we installed, use antiviruses, don't open any threat email, un wanted email, unidentified email or file, Check the computer every day, make sure the antiviruses is up to date, never visited any threated website and never download any file from untrusted website, do not copy any file from any removable device without scan. If we do all those work then our computer will save from viruses [7].

3.3.7 Can't connect to the internet: This is also a common problem. Some time we can't access internet but still connected with the network. This problems troubleshoot is very easy. First right click on the internet icon in the taskbar.

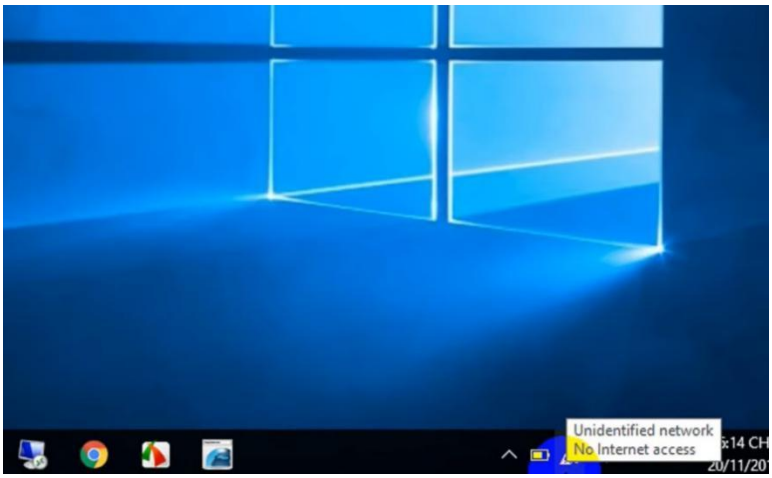


Figure 3.21: No internet access

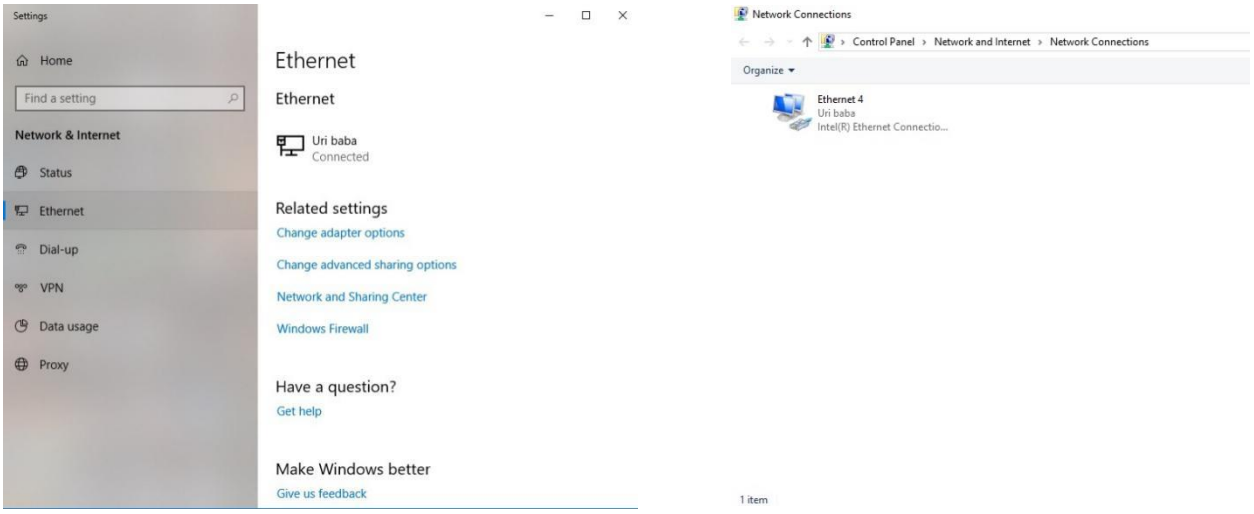


Figure 3.22: Ethernet, Change adapter option

Then open “Network & Internet Settings”. Then click on the “Ethernet” option, then open “change adapter option”. Then right click on the Ethernet option then left click on the properties then double click in the IPv4. Then select obtain an IP address automatically and also select obtain DNS server automatically. After doing all of this work the PC or Laptop will again connected to internet [8].

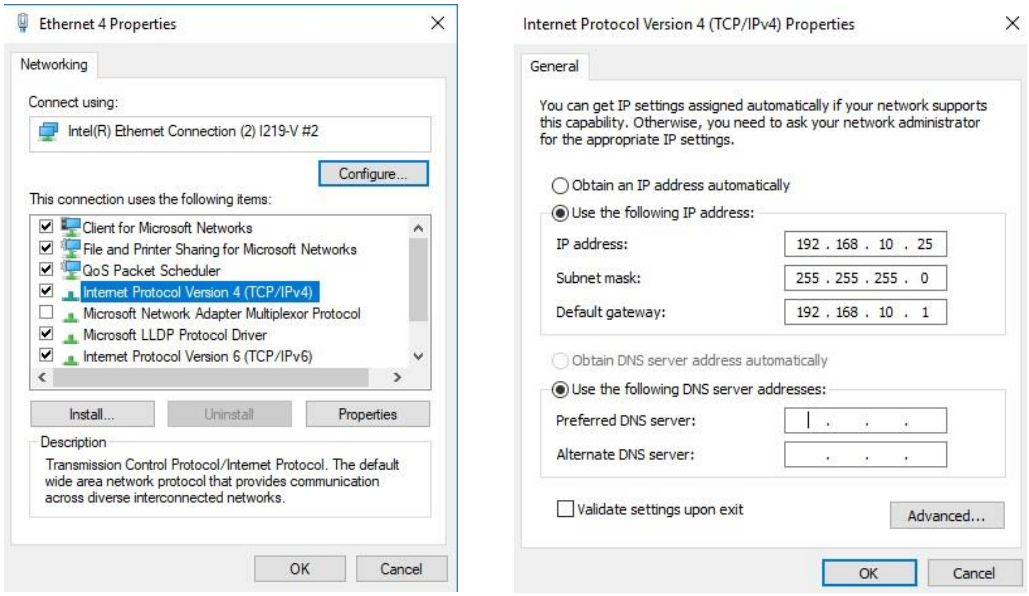


Figure 3.23: click properties of IPv4, select obtain IP or DNS

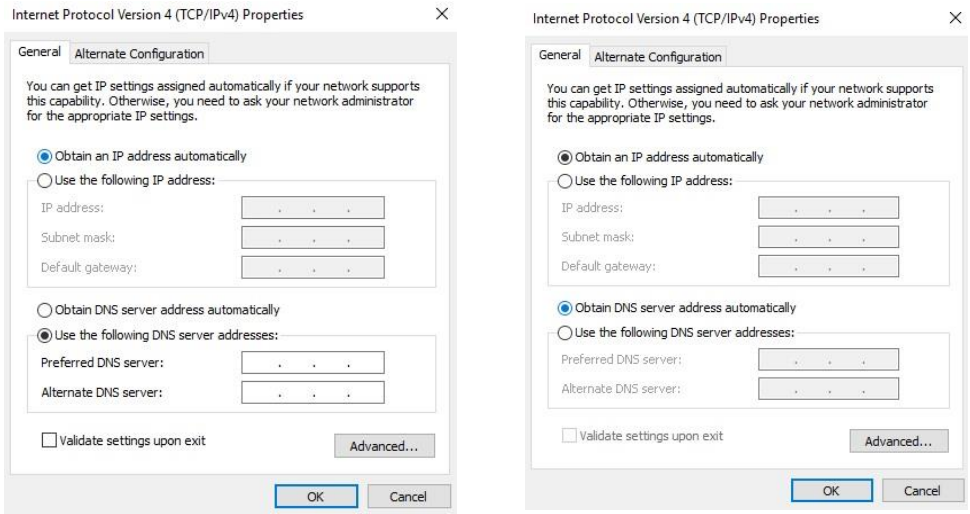


Figure 3.24: Select obtain IP and DNS automatically

3.3.8 DNS Server Problem: I also learn how to fix the DNS server problem. Some time we face this problem. Some time we can't brows any website but we still connected with the network. And the browser show as "This site can't be reached".

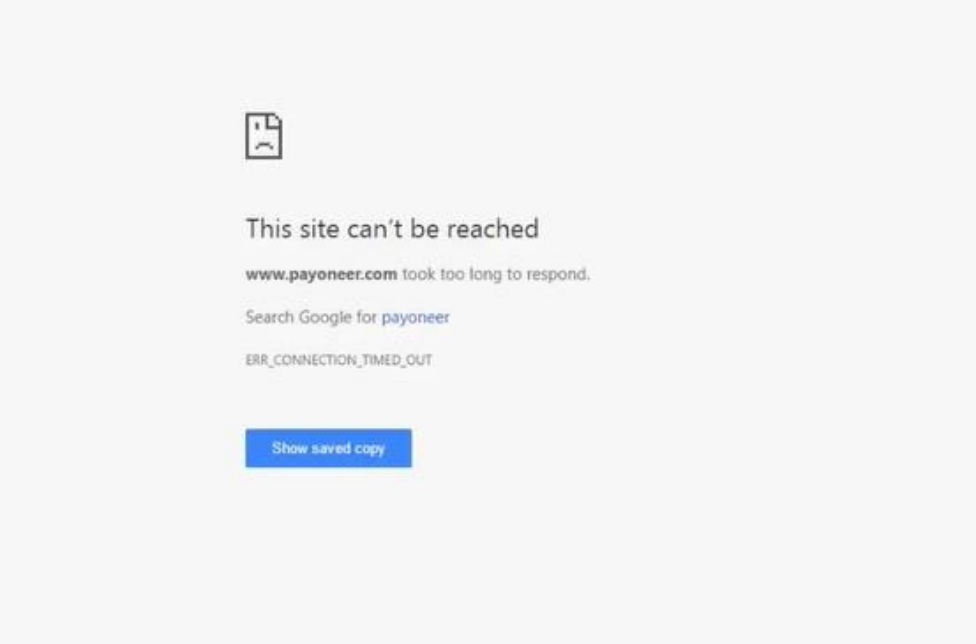


Figure 3.25: site can't be reached

In that case we solve the problem using the "cmd" mood, first we open the run option, then write cmd and click ok button. Then a cmd window will open then write "ipconfig/ flushdns" then press enter. Then write "ipconfig/ registerdns" on cmd and press Enter. Then again write "ipconfig/release and press Enter, then write the last command in to the command prompt "ipconfig /renew"

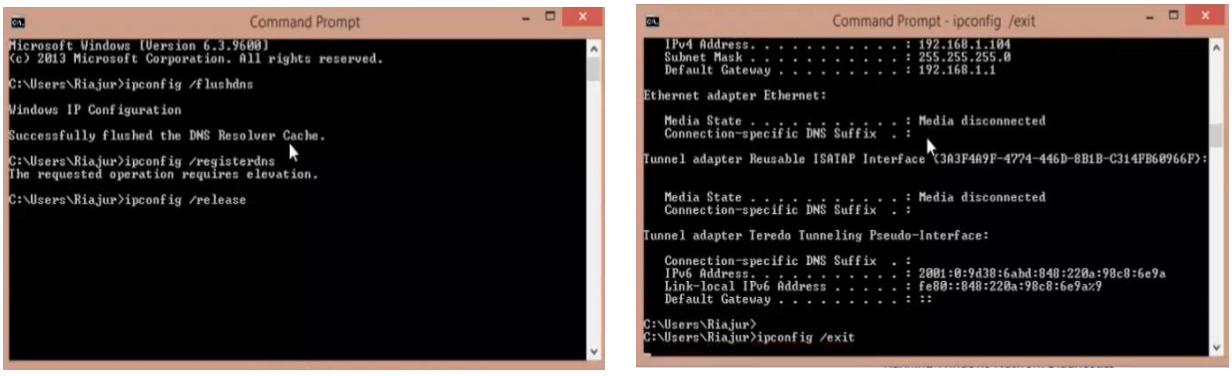


Figure 3.26: cmd – ipconfig/flushdns, ipconfig/registerdns

Figure 3.27: cmd – ipconfig/renew

So we can solve the DNS problem using those command in cmd [9].

3.3.9 To find what is my IP: Many times in the workplace we need to know the IP address of our computer. Most of the time we need IP address for remote access. So we need to know how to find the IP address of a computer. First we open run option or press “windows key + R”, then type “cmd” and press enter. Then a command prompt will open. Then type IP “config” and press enter. After that we will see what the IP address of any computer is.

Figure 3.28: cmd – ipconfig

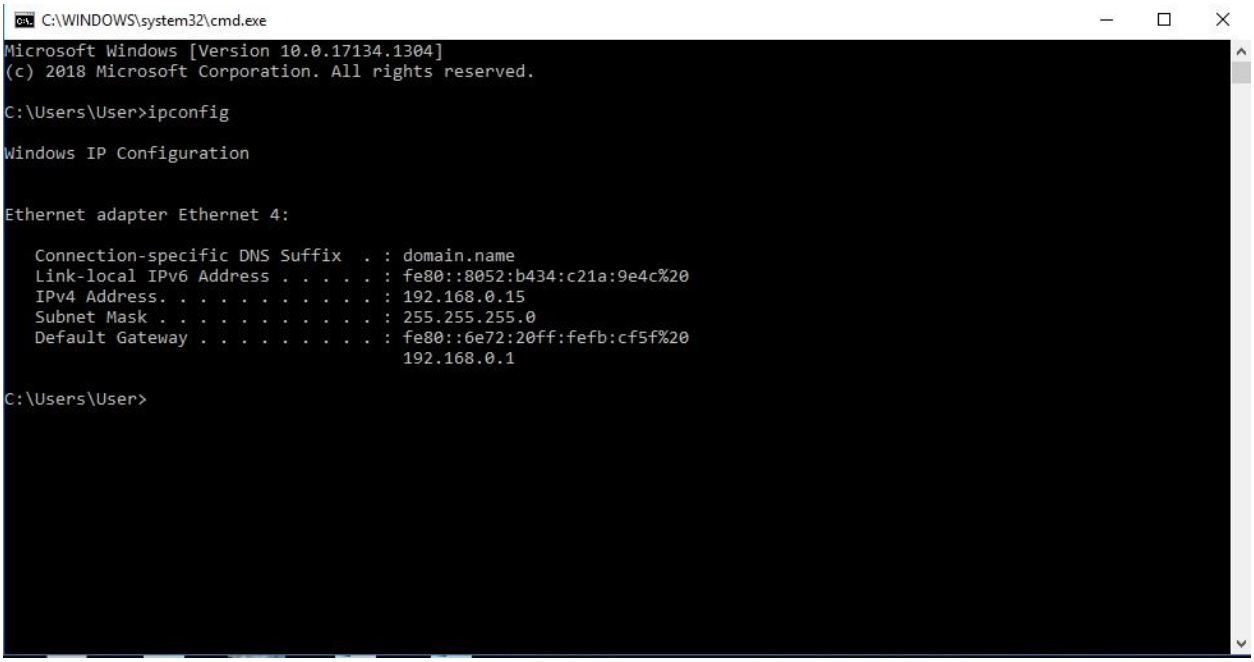


Figure 3.29: cmd – ipconfig/result

3.3.10 Blue screen of Death: Blue screen of death is a well-known problem to us. Some time we face this problem. The computer show an error massage. That “your PC run into a problem and need to restart”.

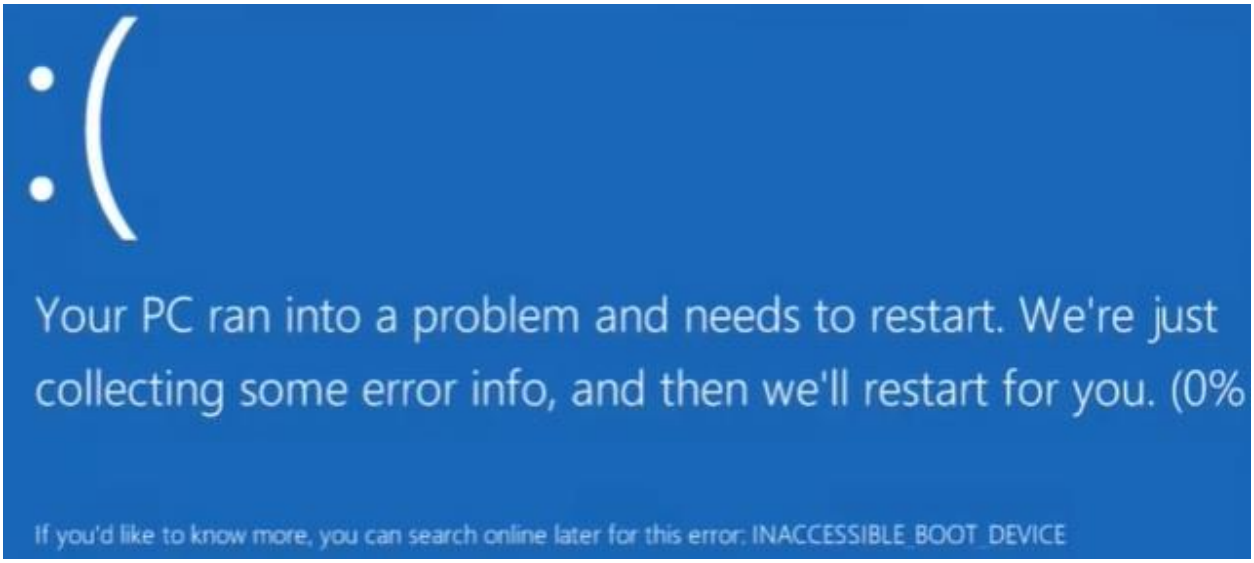


Figure 3.30: Blue screen of Death

The error also called “INACCESSIBLE BUT DEVICE”, now I discus about the inaccessible but device error/Blue screen of death. To fix this problem we must need to follow some instruction. I am also follow an instruction. First I click on the “Advance option”

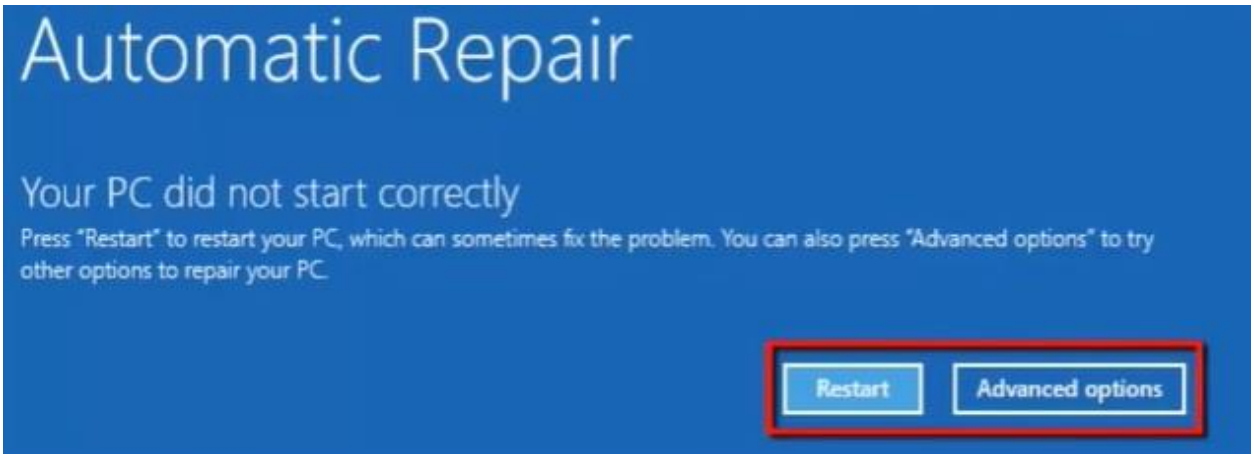


Figure 3.31: Advanced options for fixing Blue screen of Death

Then we see three option continue, troubleshoot, Turn off your PC. Then click on troubleshoot after that we see more fore option “ Refresh your pc, Reset your pc, Microsoft toolset and Advanced options”, then click on the “Advance options”. Then click on Administrator. Then a command prompt has been open.

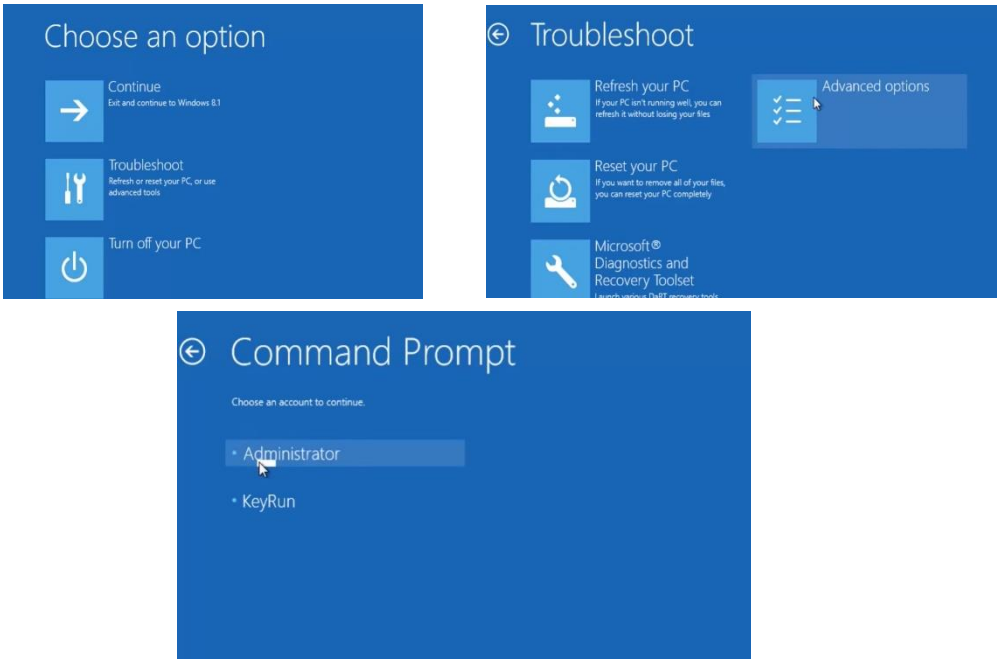


Figure 3.32: Troubleshoot of Blue screen of Death

Then type “C:”, then type “>CD windows\system32” press enter then type “CD config” press enter. Then type “CD RegBack” press Enter. Then type “DIR” and press enter.

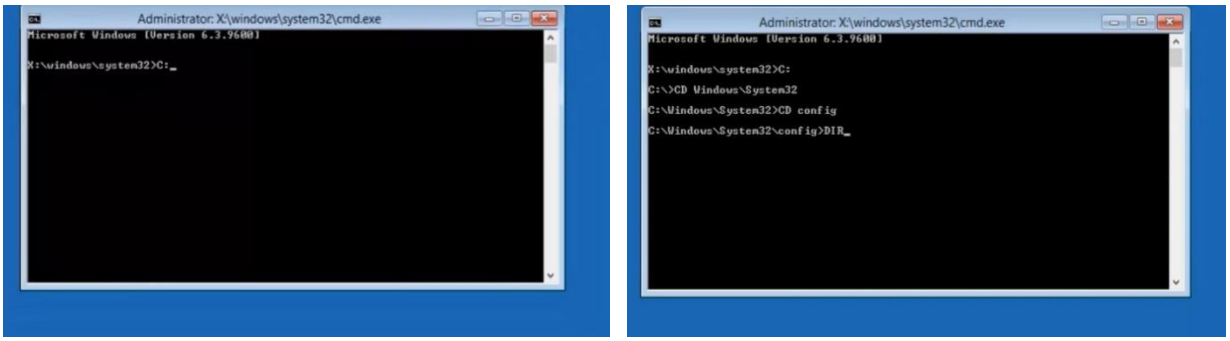


Figure 3.33: Command prompt of Administrator

Then type “CD RegBack” press enter, then type “DIR” then press enter again.

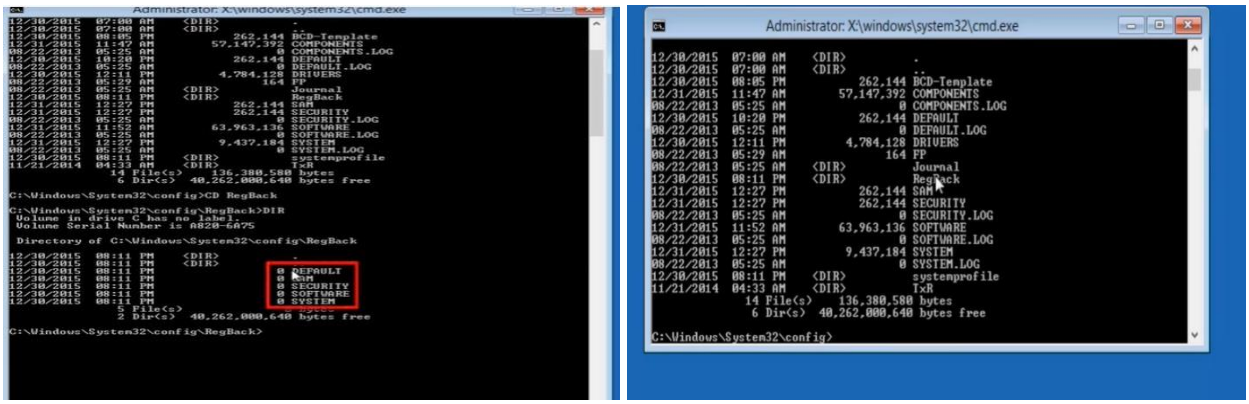


Figure 3.34: Command prompt of Administrator

In this register backup folder there 5 backup folder “DEFAULT, SAM, SECURITY, SOFTWARE, SYSTEM”. Now I change the directory files name. So I back to the directory type “CD..” then type REN DEFAULT DEFAULT1, REN SAM SAM1, REN SECURITY SECURITY1, REN SOFTWARE SOFTWARE1, REN SYSTEM SYSTEM1 and press enter. Then type “CD RegBack” then type “copy *C\windows\system32\config” and press enter. Then type Exit and turn off the PC. Then start again and the problem is solved [10].

Figure 3.35: After Troubleshoot of Blue screen of Death

3.4 Challenges: Internship is always a challenge for a student but when it comes for me I have taken it as an opportunity and pushed myself to work with the flow. I have faced various situations and events where it was new for me. I have found out new ways of accepting my problems and look forward. Through this internship I have learnt new ways of viewing challenges as my fellow superiors guided me through everything.

"Smart B" is an organization where various they are known for solving networking problems and troubleshoots. So it was really a challenge to start my days while I was new. But after few weeks it became very usual and common for me to go with the flow. I have never ever complained about any situation while I was doing internship because I never want my respected teachers get ashamed for me. I pulled through that situation and achieved what was needed.

Though I was a rookie they treated me like their own and gave me the opportunity to take challenges myself by working on various projects, such as cabling, RJ clipping, land network, WiFi network, router configuration and many types troubleshoot of hardware and software.

I am happy that I have managed to balance my work with my university studies. It looks like hard works have been paid off. The Professionals were very helpful through all the situations. I am glad that I got an opportunity to work as an intern.

Chapter 4
Competencies and smart plan

4.1 Competencies Earned

As I have worked as an intern at “Smart B” company I have learned various things and I think I have earned competency. I know I am not the judge but you will find it when you give me any task. I have learned to complete the task at any circumstance any time. I have earned the quality and I think I can use my experience to learn and do more works. Every intern dream of earning competencies because they only get the change when they start their internship program. As for me I have worked on various other companies and now I have done my internship formally I can easily claim that I have achieved my internship goals.

4.2 Smart Plan

A good planner is always known to be a smart person but a smart person can sometimes make mistakes with planning. I have learned various things and got the opportunity to work with the higher ups of “Smart B” company who has shared great experiences with me. I have now taken a step of becoming a perfect in Networking and I will work for it. I have made various plans for future but my main plan is to take few more years and learn as much as I can to develop my skills. I want to be that Engineer who has the quality skill to withstand any situation he has put through. I am also planning for a career in networking in future. I have targeted Cellphone network companies as my dream. I want to reach the peak of its head engineers. I will also try to get attached with Xiaomi Company and work as their UI developer.

4.3 Reflection

If I reflect what I did on my internship I can only say that I have learned many things and got the opportunity to work on different platforms and situation. On field experience is much needed when we professionally join any job. I also got the opportunity to solve some of my personal weakness and come round by working there. I can now easily say that I have got a great chance to show my skills and efforts. I have also got the chance to show how dedicated I am and I have come to know what will I do in future and set up my career.

Chapter 5

Conclusion and Future Career

5.1 Discussion and Conclusion

Completing this internship, I got to learn many things which are showed on the report. I got the opportunity to work on the networking sector of Smart B. It is a vast system and taught me many things. I got the opportunity to improve my skills in router related works. I have also included some other works which I learned. I worked on various situation. I got to learn how to follow orders and maintain time and work as a professional. It will help me to start a career and my passion is computer. I think this intern gives me a push above all other batch mates. I am pretty lucky to work on "Smart B". They changed my view of work and change of daily life. I am thankful to my mentors of "Smart B" they helped me with every steps and for them I am now aware of my current situation and thinking of my career.

5.2 Scope for the future Career

There is always scope for the future in this department. If I talk about me I think I have a very competitive situation. There are lots of students who are very good with studies and work and there is a big competition. I am positive that I can mix with them and work properly. I can find various organizations which are ready to give me the platform to work. Bangladesh is now a developing country and there is a lot of option for this career and I would like to work with network in future. I have got the chance to build some solid relationship with various people through internship which pushes me to reach my goal. I think I am very positive about my career.

Appendix

Speculation: My internship was pretty easy because I had a good amount of experience through my full time jobs at various places. Though I had experience I had learned many things which can be reflected at my report. I have mentioned some of my findings and experiences which are blessings for me. A person must have the skill to do his/her work properly and through internship we can learn what is skill and how can we use it. I think the knowledge we learn from on hand experience are very much important as traditional learning. We are always looking for easy methods but we did not think that if we try the process which is written on the books are easy to implement. Out fundamentals have given us many information which is very useful now. My internship taught me how to implement plans, how to react on unwanted situations, how to be an honest person. It also showed me different ways to reach and react to problems. I had the opportunity to see through some issues which were not taught on our courses which is real life experience. Internship is a place where we use our knowledge which we gained for four years and implement those.

Organization Details: 'Smart B" is a very optimistic organization which helped me to learn and work together. They allowed me to work there at full pace. They are also very keen to accept new requirements and they are happy that students apply for internship. They are very humble and widely accepted among the industry. As an organization they are still very young and they have great chance to flourish. As they allow various interns, they also give extra emphasis on that intern.

'Smart B' is a company which is mid-level based on their works and they provide different types of service to the customers. Smart B does various services such as:

- Web Design
- Digital Marketing
- Android Development
- Catalog Management
- Search Engine Optimization
- Technical Support

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