DAR ES SALAAM INSTITUTE OF TECHNOLOGY (DIT)

MODULE NAME; COMPUTER NETWORKING.

MODULE CODE; COT 04215.

LECTURE'S NAME; MR. MAGANGA SN

DATE ISSUED; 12th April 2022

DATE OF SUBMISSION; 14th April 2022

TASK; ASSIGNMENT TWO. GROUP DISCUSSION.

GROUP TWO(2)

S/N	STUDENT'S NAME	REGISTRATION NUMBER
1.	AVITUS KATUNZI VICTOR	2102202109210121
2.	NARGIS MASOUD IBRAHIM	2102209111584
3.	KELVIN JOHN MAGOMBA	
4.	LUQMAN TUKE	210210920588
5.	ABDI HASSAN HAMISI	2102209210683
6.	JOHANESS TUMWESIGE	210220929991

1. **What is the meaning of switch configuration? Short explanations.**
   - Refers to the altering or making changes to the switch settings such as changing passwords (privileged mode or user mode) and renaming the host name.

2. **Protect a switch by two passwords, print screen the results. This is practical question**
   (a) The user mode password: magangasn

```
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname DIT_DAR
DIT_DAR(config)#line console 0
DIT_DAR(config-line)#password magangasn
DIT_DAR(config-line)#login
```

   (b) Enable mode password (privileged mode password): wasafi

```
DIT_DAR>en
DIT_DAR#config t
Enter configuration commands, one per line.  End with CNTL/Z.
DIT_DAR(config)#enable secret wasafi
DIT_DAR(config)#end
DIT_DAR#
%SYS-5-CONFIG_I: Configured from console by console
```

3. **Set the hostname of your switch to be DIT_DAR**

```
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname DIT_DAR
```

4. **Is it necessary for every switch to have an IP address? If yes, why? Give reasons, If no, why? Give reasons.**
   - Yes, every switch has the IP address which may either be static or not static whereas switches with IP addresses which are not static they get an Automatic Private IP Address (APIPA)
   - It is necessary because of remotely control.

5. **What is the command used to view default IP configuration on a switch? Do it and print screen the results.**

   Commands

   ```
   DIT_DAR#show running-config
   Building configuration...
   ```

   Results

   ```
   interface Vlan1
    ip address 192.16.10.18 255.255.255.0
   !
   ip default-gateway 192.16.10.1
   ```

6. **Configure a switch with the following: view the results, print screen the results.**
   - IP address: 192.16.10.18
   - Subnet mask: 255.255.255.0
   - Default gateway: 192.16.10.1

   Then set your laptop with an IP 192.16.10.20 having the same subnet mask and default gateway as above. Ping a laptop from your switch to verify IP connectivity. Print screen the results.

   ```
   Switch(config-if)#ip address 192.16.10.18 255.255.255.0
   Switch(config-if)#no shutdown

   Switch(config-if)#
   %LINK-5-CHANGED: Interface Vlan1, changed state to up

   %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
   ```

   ```
   Switch(config)#ip default-gateway 192.16.10.1
   Switch(config)#
   Switch#
   %SYS-5-CONFIG_I: Configured from console by console
   ```

7. **A command no shutdown is used on switch configuration. What is the use of this command? Where to use this command? Show it, print screen the results.**

   ```
   Switch(config-if)#ip address 192.16.10.18 255.255.255.0
   Switch(config-if)#no shutdown

   Switch(config-if)#
   %LINK-5-CHANGED: Interface Vlan1, changed state to up

   %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
   ```

8. Run your switch with the command that will show number of ports you can configure. Prints screen the results.

```
DIT_DAR#show interface status
Port         Name              Status       Vlan      Duplex  Speed Type
Fa0/1                          notconnect   1         a-full  a-100 10/100BaseTX
Fa0/2                          notconnect   1         auto    auto  10/100BaseTX
Fa0/3                          notconnect   1         auto    auto  10/100BaseTX
Fa0/4                          notconnect   1         auto    auto  10/100BaseTX
Fa0/5                          notconnect   1         auto    auto  10/100BaseTX
Fa0/6                          notconnect   1         auto    auto  10/100BaseTX
Fa0/7                          notconnect   1         auto    auto  10/100BaseTX
Fa0/8                          notconnect   1         auto    auto  10/100BaseTX
Fa0/9                          notconnect   1         auto    auto  10/100BaseTX
Fa0/10                         notconnect   1         auto    auto  10/100BaseTX
Fa0/11                         notconnect   1         auto    auto  10/100BaseTX
Fa0/12                         notconnect   1         auto    auto  10/100BaseTX
Fa0/13                         notconnect   1         auto    auto  10/100BaseTX
Fa0/14                         notconnect   1         auto    auto  10/100BaseTX
Fa0/15                         notconnect   1         auto    auto  10/100BaseTX
Fa0/16                         notconnect   1         auto    auto  10/100BaseTX
Fa0/17                         notconnect   1         auto    auto  10/100BaseTX
Fa0/18                         notconnect   1         auto    auto  10/100BaseTX
Fa0/19                         notconnect   1         auto    auto  10/100BaseTX
Fa0/20                         notconnect   1         auto    auto  10/100BaseTX
Fa0/21                         notconnect   1         auto    auto  10/100BaseTX
Fa0/22                         notconnect   1         auto    auto  10/100BaseTX
Fa0/23                         notconnect   1         auto    auto  10/100BaseTX
Fa0/24                         notconnect   1         auto    auto  10/100BaseTX
Gig0/1                         notconnect   1         auto    auto  10/100BaseTX
Gig0/2                         notconnect   1         auto    auto  10/100BaseTX
```

9. How will you know the nature of interfaces? That is, are they Ethernet or Fastethernet or GigabitEthernet. Prints screen the results.

<u>Commands</u>

```
DIT_DAR#show running-config
Building configuration...
```

Results

```
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
```

10. What is the function of the following commands on switch: prints screen the results. Page 2 of 2 Maganga SN

(a) Switch>?

```
DIT_DAR>?
Exec commands:
  connect     Open a terminal connection
  disable     Turn off privileged commands
  disconnect  Disconnect an existing network connection
  enable      Turn on privileged commands
  exit        Exit from the EXEC
  logout      Exit from the EXEC
  ping        Send echo messages
  resume      Resume an active network connection
  show        Show running system information
  telnet      Open a telnet connection
  terminal    Set terminal line parameters
  traceroute  Trace route to destination
```

(b) Switch> A?

```
DIT_DAR>A?
% Unrecognized command
```

(c)   Switch#?

```
DIT_DAR#?
Exec commands:
  clear       Reset functions
  clock       Manage the system clock
  configure   Enter configuration mode
  connect     Open a terminal connection
  copy        Copy from one file to another
  debug       Debugging functions (see also 'undebug')
  delete      Delete a file
  dir         List files on a filesystem
  disable     Turn off privileged commands
  disconnect  Disconnect an existing network connection
  enable      Turn on privileged commands
  erase       Erase a filesystem
  exit        Exit from the EXEC
  logout      Exit from the EXEC
  more        Display the contents of a file
  no          Disable debugging informations
  ping        Send echo messages
  reload      Halt and perform a cold restart
  resume      Resume an active network connection
  setup       Run the SETUP command facility
  show        Show running system information
  ssh         Open a secure shell client connection
  telnet      Open a telnet connection
  terminal    Set terminal line parameters
  traceroute  Trace route to destination
  undebug     Disable debugging functions (see also 'debug')
  vlan        Configure VLAN parameters
  write       Write running configuration to memory, network, or terminal
```

(d)   Switch#D?

```
DIT_DAR#D?
debug  delete  dir  disable  disconnect
```

11. This question is on how to configure Interface Description on a switch. Set description for an interface fa 0/1 that reads: THIS PORT IS FOR MAGANGA PC. Then, view the description, Print screen the results.

```
DIT_DAR#show interfaces
FastEthernet0/1 is up, line protocol is up (connected)
  Hardware is Lance, address is 00d0.5814.8301 (bia 00d0.5814.8301)
  Description: THIS PORT IS FOR MAGANGA PC
```

12. What is port duplex on a switch? Run the command to view types of switch duplex, print screen the results. Set port number 1 to be under full duplex.

-Port Duplex

    _Is the system port that facilitates communication between two devices in both direction.

```
DIT_DAR#show interface Fa0/1
FastEthernet0/1 is down, line protocol is down (disabled)
  Hardware is Lance, address is 00d0.5814.8301 (bia 00d0.5814.8301)
  Description: THIS PORT IS FOR MAGANGA PC
 BW 100000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s
  input flow-control is off, output flow-control is off
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     956 packets input, 193351 bytes, 0 no buffer
     Received 956 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     2357 packets output, 263570 bytes, 0 underruns
     0 output errors, 0 collisions, 10 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

13. When using real switch, which commands: (here use packet tracer)
(a) Used to save all configurations. print screen the results

```
DIT_DAR#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

(c)   Used to erase all configurations. print screen the result

```
DIT_DAR#erase start
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
```

14. What is MAC address table? Mention types of MAC addresses on a switch. Run the command on a switch to view MAC address table. Print screen the results.

- Is a table that contains address information that the switch uses to forward traffic between the inbound ports.
- Types of MAC address are;
    . Unicast
    . Multicast

. Broadcast

```
DIT_DAR#show mac-address
           Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```

15. Choose MAC address on your computer that holds NIC, then configure it to switch port number 8 to be permanent

48-5F-99-5E-EC-C8