12.0
INTERNET INFRASTRUCTURES AND
NETWORK/COMPUTER SECURITY

School of Education
Faculty of Social Sciences and Humanities

12.1
INTERNET PROTOCOL TCP/IP

Internet

- The **Internet** is a vast collection of machines and devices spread out across the world.
- There is an important need to identify and locate a specific one.

Local Area Network Addresses

- Devices connected to a LAN have their own unique hardware address.
- This address is useful only in the context of a LAN, cannot be used to locate machines on the Internet.
- This address cannot be used to indicate the location of a machine as it is possible to move the machine somewhere else (e.g. notebook computers).

Internet Protocol Addresses

11010011 01110111 01110001 11101111

211.119.113.239

Internet Protocol Addresses

- Under Internet Protocol version 4 (IPv4), the IP address is a 32-bit number made up of 4 octets. E.g: 192.168.1.1

- There are 5 classes of IP addresses:

  Class A   1.0.0.1 to 126.255.255.254

  Class B   128.1.0.1 to 191.255.255.254

  Class C   192.0.1.1 to 223.255.254.254

  Class D   224.0.0.0 to 239.255.255.255

  Class E   240.0.0.0 to 254.255.255.254

Internet Protocol Addresses

Computer's IP address	Internet IP address
Private	Public
Internal	External
LAN	WAN
cmd > ipconfig	https://whatismyipaddress.com/

innovative ● entrepreneurial ● global

ocw.utm.my

Internet Protocol Addresses

```
Command Prompt                                                    —    □    ×

Ethernet adapter Ethernet 3:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::4dfe:7712:9e12:b722%16
   IPv4 Address. . . . . . . . . . . : 192.168.43.27
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.43.1

Ethernet adapter Bluetooth Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Tunnel adapter Teredo Tunneling Pseudo-Interface:

   Connection-specific DNS Suffix  . :
   IPv6 Address. . . . . . . . . . . : 2001:0:2851:782c:14a2:1152:3f57:d4e4
   Link-local IPv6 Address . . . . . : fe80::14a2:1152:3f57:d4e4%14
   Default Gateway . . . . . . . . . : ::
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Internet Protocol Addresses

Domain System Name

- The domain name system (DNS) allows textual names to be associated with IP addresses
- http://humanities.utm.my/education/

12.2
ACCESSING THE INTERNET
(BROADBAND, MODEM, DSL)

Accessing the Internet

How to access the internet?

Secure Sockets Layer (SSL)

- It use https instead of http
- Padlock logo appear in user's browser
- It is a small data file that cryptographic key to an organization's detail.
- It widely used in credit card transaction, data transfer and online login.

12.3
PHISHING, SPAM & VIRUS

Phishing, SPAM & Virus

Find the differences between:

1. Phishing
2. Spam
3. Virus
4. Worm
5. Malware
6. Spyware
7. Trojan horse
8. Adware