Computer Science   # COMPSCI 111/111G

Internet 01
Exercise Sheet

Exercise 1: What is the difference between circuit switching networks and packet switching networks?

A circuit-switching network creates a direct connection between the sender and receiver over which data is exchanged. In a packet-switching network, the sender's message is broken down into packets. These packets are sent along the nodes in the network to the receiver. After getting the packets, the receiver assembles the packets and reads the message.

Exercise 2: What was ARPANET?

ARPANET was a packet-switching network developed by ARPA in 1969. The aim of ARPANET was to further research into computer technology by allowing researchers to remotely access computers.

Exercise 3: Put the following events into chronological order: WWW created, Sputnik launched, DNS created, TCP/IP developed.

1) Sputnik launched
2) TCP/IP developed
3) DNS created
4) WWW created

Exercise 4: What is the difference between a LAN and a WAN?

A Local Area Network is a network with a radius of 1km. However a Wide Area Network is a network with a radius of over 1km.

Exercise 5: What do network protocols do?

Network protocols are a set of rules which govern how computers communicate with each other over a network. An example of a network protocol is TCP/IP.

Exercise 6: Give two examples of protocols used on the Internet and state what each protocol is used for.

There are a wide range of answers, one possible answer is:
1) TCP: used by the sender to break messages into packets, and by the receiver to ensure all packets have arrived so the packets can be reassembled to form the message
2) FTP: used for transferring files over the Internet

Exercise 7: Explain, in your own words, what a Domain Name Server does.

A Domain Name Server is responsible for looking up a domain name and returning the associated IP address and vice versa

Exercise 8: Imagine that a friend has three different computers in their home and they wanted to connect them all to the Internet. What hardware would you recommend that they purchase? Draw a diagram showing how the hardware would connect the machines to the Internet.

Computer 1

Computer 2 — Router and modem — Phone jack

Computer 3

ISP