Exercise1 Answer:

1. IP address: 104.18.60.21, 104.18.61.21 and 172.67.219.46

The reason of having several IP addresses is having multiple servers.

Text

Description automatically generated

2. name is localhost

Text

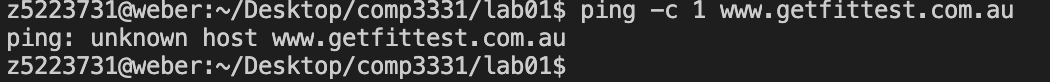
Description automatically generated

Exercise2 Answer:

1.www.getfittest.com.au and www.hola.hp cannot reachable.

Text

Description automatically generated



Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

2. The one reason could be these hosts do not exist.

Exercise3 Answer:

1. Text

Description automatically generated

There are 21 routers between my workstation and [www.columbia.edu](http://www.columbia.edu), there are 5 routers which are 1 to 5 along the path of UNSW network, between router 7 and router 8 cross the Pacific Ocean due to RTT between them increase lot.

2.

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

The path from my machine to these destinations diverge at router 6

The details about router 6:

The host name of this router is AARNET and it stands for Australian Academic and Research Network

The number of hops on each path isn’t proportional the physical distance.

3.

The screenshot from http://www.speedtest.com.sg/tr.php

Text, letter

Description automatically generated

The screenshot from https://www.telstra.net/cgi-bin/trace

Text

Description automatically generated

The screenshot of reversing traceroute www.telstra.net

Text

Description automatically generated

The screenshot of reversing traceroute www.speedtest.com.sg

Text

Description automatically generated

The IP addresses of two servers I have chosen are 203.50.5.178 and 202.150.221.170

As the screenshot shown above, the reverse path doesn’t go through the same routers as the forward path.

As the screenshot shown above, there aren’t common routers and IP addresses between forward and reverse path.

The reason why there aren’t common routers and IP addresses is probably there are multiple routers and multiple path between my machine and destination. The router or path the packet are heading to is arbitrary.

Exercise4 Answer:

1.

The screenshot of www.uq.edu.au\_delay.pdf

Graphical user interface, chart, histogram

Description automatically generated

The screenshot of www.uq.edu.au\_scatter.pdf

Chart

Description automatically generated

The screenshot of www.upm.edu.my\_delay.pdf

Chart, histogram

Description automatically generated

The screenshot of [www.upm.edu.my\_scatter.pdf](http://www.upm.edu.my_scatter.pdf)

Chart, line chart

Description automatically generated

The screenshot of [www.tu-berlin.de\_delay.pdf](http://www.tu-berlin.de_delay.pdf)

A picture containing histogram

Description automatically generated

The screenshot of [www.tu-berlin.de\_scatter.pdf](http://www.tu-berlin.de_scatter.pdf)

A picture containing chart

Description automatically generated

The physical distance between UNSW and UQ from google map is

Map

Description automatically generated

Hence the shortest possible time T is 733910/( = 2.44636666 ms

The physical distance between UNSW and TIME dotCom Berhad from google map is

Map

Description automatically generated

Hence the shortest possible time T is 6625500/( = 22.085 ms

The physical distance between UNSW and Berlin Institute of Technology from google map is

Map

Description automatically generated

Hence the shortest possible time T is 16106120/( = 53.68706666 ms

Chart, line chart

Description automatically generated

The two reasons are transmission delay and queuing delay

2.

It can vary over time due to the queuing delay.

3.

It is in USA and Canada

Text

Description automatically generated

A picture containing timeline

Description automatically generated

A picture containing timeline

Description automatically generated

A picture containing timeline

Description automatically generated

4.

Transmission and processing delay depend on the packet size.

Queuing and propagation delay do not.