V516 Homework 5

Part 1:

Use the specified DOS Commands (Start Menu/Run/Cmd) to answer the associated questions. Do this exercise from a campus connected computer (or a VPN connection to the campus network). Use screen capture to record results. Annotate screen capture results with explanation and answers to questions. Convert results document to PDF and publish on your website.

1. Command= tracert host-name

   Question(s): How many routers are between you and bloomington.in.gov? How many hops to www.simplyesl.org?

   For each trace, state 3 networks that the connection used from sender to receiver.

   There are 7 routers between me and Bloomington.in.gov.
   Networks used in this connection: 149.160.248.2
   Irb.10.rtr.11.indiana.gigapop.net
   Indy1.gigapop.smithvilledigital.net
There are 14 hops between me and www.simplycsl.org.
Networks in this connection: 64.57.20.110
ae14.cr2.ord2.us.zip.zayo.com
apache2-emu.richard-bassett.dreamhost.com

2. Command= ipconfig /all

C:\Users\TINGYING MIAO>ipconfig /all

Windows IP Configuration

- Host Name: YingyingPC
- Primary DNS Suffix: 
- Node Type: Hybrid
- IP Routing Enabled: No
- WINS Proxy Enabled: No
- DNS Suffix Search List: indiana.edu

Wireless LAN adapter Local Area Connection= 2:

- Media State: Media disconnected
- Connection-specific DNS Suffix: 
- Description: Microsoft Wi-Fi Direct Virtual Adapter
- Physical Address: E8-2A-68-63-7E
- DHCP Enabled: Yes
- Autoconfiguration Enabled: Yes

Ethernet adapter Bluetooth Network Connection:

- Media State: Media disconnected
- Connection-specific DNS Suffix: 
- Description: Bluetooth Device (Personal Area Network)
- Physical Address: E8-2A-68-63-7E
- DHCP Enabled: Yes
- Autoconfiguration Enabled: Yes

Wireless LAN adapter Wi-Fi:

- Connection-specific DNS Suffix: indiana.edu
- Description: Intel(R) Wireless-N 7260
- Physical Address: EE-2A-68-63-7E
- DHCP Enabled: Yes
- Autoconfiguration Enabled: Yes
- IPv4 Address: 192.168.245.50(Preferred)
- Subnet Mask: 255.255.255.0
- Lease Obtained: 2015/10/20 17:34:58
- Lease Expires: 2015/10/30 18:24:35
- Default Gateway: 192.168.245.1
- DNS Server: 16.78.1.222
- DNS Servers: 218.30.118.6
- Primary WINS Server: 129.79.1.200
- Secondary WINS Server: 129.79.1.200
Question(s): Computers name?
YingyingPC
Computers Internet Protocol (IP) address?
149.160.248.1
Is DHCP enabled?
Yes.
What is the address of the primary DNS?
218.30.118.6
What is the address of your “Gateway”?
149.160.248.1

3. Command= nslookup

Questions: What is the IP number for Oncourse.iu.edu?

```
C:\Users\YINGYING MIAO>nslookup oncours.e.iu.edu
Server: dnspsi-public-dns.dnspsi.com
Address: 218.30.118.6

Non-authoritative answer:
Name: oncours.e.iu.edu
Address: 129.79.211.42
```
What is the IP number for mypage.iu.edu?

```
C:\Users\YINGYING MIAO>nslookup mypage.iu.edu
Server:  dnspsai-public-dns.dnspsai.com
Address:  218.39.118.6

DNS request timed out.
  timeout was 2 seconds.
Non-authoritative answer:
Name:  pages.iu.edu
Addresses:  129.79.78.36
           129.79.78.37
Alias:  mypage.iu.edu
```

What is the IP address for the Mercury server?

```
C:\Users\YINGYING MIAO>nslookup mercury.uits.indiana.edu
Server:  dnspsai-public-dns.dnspsai.com
Address:  218.39.118.6

Non-authoritative answer:
Name:  mercury.uits.indiana.edu
Address:  129.79.78.18
```

4. Command= ping

Questions: Ping Oncourse. What is the average response time? 2ms

```
Pinging oncourse.iu.edu [129.79.211.42] with 32 bytes of data:
Reply from 129.79.211.42: bytes=32 time=2ms TTL=61
Reply from 129.79.211.42: bytes=32 time=2ms TTL=61
Reply from 129.79.211.42: bytes=32 time=2ms TTL=61
Reply from 129.79.211.42: bytes=32 time=2ms TTL=61

Ping statistics for 129.79.211.42:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss).
  Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

Ping Purdue (purdue.edu). What is the response time? 6ms

```
Pinging purdue.edu [128.210.7.200] with 32 bytes of data:
Reply from 128.210.7.200: bytes=32 time=7ms TTL=248
Reply from 128.210.7.200: bytes=32 time=5ms TTL=248
Reply from 128.210.7.200: bytes=32 time=6ms TTL=248
Reply from 128.210.7.200: bytes=32 time=6ms TTL=248

Ping statistics for 128.210.7.200:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss).
  Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 7ms, Average = 6ms
```
Ping yourself (e.g. ping your-computer-name or IP addr);
Response time? 0ms

![Ping statistics output](image)

Question: How many broadcast (non-unicast) frames have you received?
651572

Command= netstat –s
```
 hw5      Yingying Miao

IPv4 Statistics
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Packets Received</td>
<td>274699</td>
</tr>
<tr>
<td>Received Header Errors</td>
<td>0</td>
</tr>
<tr>
<td>Received Address Errors</td>
<td>0</td>
</tr>
<tr>
<td>Datagram Forwarded</td>
<td>0</td>
</tr>
<tr>
<td>Unknown Protocols</td>
<td>0</td>
</tr>
<tr>
<td>Discarded Packets</td>
<td>1553</td>
</tr>
<tr>
<td>Packets Discarded</td>
<td>512</td>
</tr>
<tr>
<td>Output Packets</td>
<td>82367</td>
</tr>
<tr>
<td>Output Request</td>
<td>1423</td>
</tr>
</tbody>
</table>

IPv6 Statistics
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Packets Received</td>
<td>87441</td>
</tr>
<tr>
<td>Received Header Errors</td>
<td>0</td>
</tr>
<tr>
<td>Received Address Errors</td>
<td>0</td>
</tr>
<tr>
<td>Datagram Forwarded</td>
<td>0</td>
</tr>
<tr>
<td>Unknown Protocols</td>
<td>0</td>
</tr>
<tr>
<td>Discarded Packets</td>
<td>512</td>
</tr>
<tr>
<td>Packets Discarded</td>
<td>0</td>
</tr>
<tr>
<td>Output Packets</td>
<td>1423</td>
</tr>
</tbody>
</table>

ICMPv4 Statistics
<table>
<thead>
<tr>
<th></th>
<th>Received</th>
<th>Sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages</td>
<td>288</td>
<td>847</td>
</tr>
<tr>
<td>Errors</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Destination Unreachable</td>
<td>272</td>
<td>72</td>
</tr>
<tr>
<td>Time Exceeded</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Parameter Problems</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Source Quench</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Redirects</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Echo Replies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Multicast</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Timestamp</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Timestamp Replies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Address Mask</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Address Mask Reply</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Router Solicitations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Router Advertisement</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
```
Question: Have any datagrams been forwarded? No

Command= netstat –n

Question: How many TCP connections exist. Open an FTP connection (use WINSCP or SecureFTP) to Mercury and re-do netstat –n. Does the new connection show up?

There are 9 TCP connection exist.

After open WINSCP and connect to Mercury, there are 16 TCP connections. New connection show up.
Part 2: Submit a copy of your Excel workbook (with 3 tabs) to Canvas.

Problem 1: Excel Function to Practice: “If” statement, nested “IFs”

The Flybynight Airline flight from Seattle to New York has a capacity of 250 people. 270 tickets have been sold for the flight at a price of $300 per ticket. Tickets are non-refundable. The fixed cost of flying a passenger (mostly food costs and fuel costs) is $30 per passenger. If more than 250 ticket holders show up for the flight, then the flight is overbooked and Flybynight must pay overbooking compensation of $350 per person to each overbooked passenger. Develop a spreadsheet that computes Flybynight’s profit based on the number of ticket holders who show up for the flight.

The spreadsheet is to have “named” variables (use Formulas/Define Name) for the following (you can add more if you need):

- Flight Capacity
- Number Ticket Holders Showing Up
- Fixed cost of flying a passenger
- Tickets Sold
- Overbook cost per passenger
- Revenue In
- Cost for flying all passengers
- Cost for overbooking
- Profit

Use of “IF” is required!! (hint: Use the IF statement to calculate Profit, testing the condition “Number passengers showing up <= capacity”)

<table>
<thead>
<tr>
<th>Flight Capacity</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Ticket Holders Showing Up</td>
<td>255</td>
</tr>
<tr>
<td>Fixed cost of flying a passenger</td>
<td>30</td>
</tr>
<tr>
<td>Tickets Sold</td>
<td>260</td>
</tr>
<tr>
<td>Overbook cost per passenger</td>
<td>350</td>
</tr>
<tr>
<td>Revenue In</td>
<td>78000</td>
</tr>
<tr>
<td>Cost for flying all passengers</td>
<td>7500</td>
</tr>
<tr>
<td>Cost for overbooking</td>
<td>1750</td>
</tr>
<tr>
<td>Profit</td>
<td>68750</td>
</tr>
</tbody>
</table>
**Problem 2: Excel Function to practice:** Nested IF and vlookup

Add a new TAB to your Excel Workbook, and label it “Tax Penalty”.

Late fees for private property tax are determined by date (degree of lateness) and as a percent of the tax revenue owed. Using the following data, create an application (in Excel) that will accept a DATE of tax submission as input, and will output the proper late fee penalty. Your spreadsheet is to have a cell labeled: **Please Enter a Date.** A second cell is to be labeled: **Tax Penalty.** When the user enters a date, the formula in the Tax Penalty cell will determine and display the proper penalty.

<table>
<thead>
<tr>
<th>When Property Tax is Submitted</th>
<th>Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.1 – March 15</td>
<td>0</td>
</tr>
<tr>
<td>March 16 – June 30</td>
<td>5%</td>
</tr>
<tr>
<td>July 1 – Sept 30</td>
<td>10%</td>
</tr>
<tr>
<td>Oct 1 – Dec. 31</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Problem 3: Excel Solver**

Add another tab to your Excel Workbook, label it “Happy Workforce”

Your Health-Care Online Exchange is having some problems, so you have hired telephone consultants to enroll people in health insurance via telephone. You have determined (based on load and demand) that you need the following number of people each day or the week:

M=17  Tu=13  Wed=15  Th=17  F=9  Sa=9  Su=12
Each consultant works 5 consecutive days, then 2 days off. You have hired 22 consultants. How many people should start their 5 day workweek on each day of the week (like 5 start M, 6 start Tu, 10 start Wed..) in order to maximize the number of weekend days off?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total workers on this day</td>
<td>Workers start on this day</td>
</tr>
<tr>
<td>2</td>
<td>Monday</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Tuesday</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Wednesday</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Thursday</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>Friday</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>Saturday</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>Sunday</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>total worker=</td>
<td>22</td>
</tr>
<tr>
<td>10</td>
<td>Total working weekend days(number of worker*day)</td>
<td>21</td>
</tr>
</tbody>
</table>