COMP-3670 Final Project Test Cases

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This document contains four different test cases with screenshots we used to test the features and limits of our project.

Test Case 1: Client inputs a server IP they would like to connect to but rejects the confirmation. In this case the client process will immediately terminate following the input "no". On the server side it will display that a client has connected but when the client refuses the confirmation it will state the client terminated the connection. Both perspectives are shown in screenshots below.

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports


Connected to a Client

Client has terminated the connection
```

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
no
```

Test Case 2: In this test case the Client connects to the Server by entering 127.0.0.1 then the connection is established. The Client enters youtube.com for the hostname and the Server obtains this hostname and collects all the Network Information. The Client receives this data and outputs to the file. The connection is then terminated. In this case, the WHOIS Lookup is completed successfully and IP Addresses are found but are not reachable.

DiscoveryData.txt:

DiscoveryData - Notepad

File Edit Format View Help

```
Network Information For youtube.com

WHOIS Lookup:
    Domain Name: YOUTUBE.COM
    Registry Domain ID: 142504053_DOMAIN_COM-VRSN
    Registrar WHOIS Server: whois.markmonitor.com
    Registrar URL: http://www.markmonitor.com
    Updated Date: 2020-01-14T10:32:46Z
    Creation Date: 2005-02-15T05:13:12Z
    Registry Expiry Date: 2021-02-15T05:13:12Z
    Registrar: MarkMonitor Inc.
    Registrar IANA ID: 292
    Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
    Registrar Abuse Contact Phone: +1.2083895740
    Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
    Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
    Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
    Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
    Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
    Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
    Name Server: NS1.GOOGLE.COM
    Name Server: NS2.GOOGLE.COM
    Name Server: NS3.GOOGLE.COM
-
-
-
All IP Addresses found:
172.217.0.238
2607:f8b0:400b:808:0:0:0:200e
-
-
-
IP Address 172.217.0.238 is not Reachable
IP Address 2607:f8b0:400b:808:0:0:0:200e is not Reachable
-
-
```

Client:

raffoulr@cs.uwindsor.ca:22 - Bitvise xterm - raffoulr@alpha: ~/CompNetworks/FinalProject

```
raffoulr@alpha:~/CompNetworks/FinalProject$ java Client
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
Only Enter Hostname and extension (ex. do not write www.google.com, write only google.com)
youtube.com
The network data will be stored into the text file: DiscoveryData.txt

Would you like to give the server another HostName? (yes/no)
no
raffoulr@alpha:~/CompNetworks/FinalProject$
```

Server:

Test Case 3: In this test case the client enters a University of Windsor Server
(charlie.cs.uwindsor.ca) instead of a website name as a hostname to the server. The
WHOIS feature will not work but it will find the IP addresses and if the addresses are
reachable and open ports. Screenshots of the results are below.

DataDiscovery.txt:

Server:

```
raffoulr@cs.uwindsor.ca:22 - Bitvise xterm - raffoulr@alpha: ~/CompNetworks/FinalProject
raffoulr@alpha:~/CompNetworks/FinalProject$ java Server
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports


Connected to a Client

Received charlie.cs.uwindsor.ca from the Client
Getting and Sending Data now
Sent all Data to the Client
Client terminated the connection
```

Client:

```
raffoulr@cs.uwindsor.ca:22 - Bitvise xterm - raffoulr@alpha: ~/CompNetworks/FinalProject
raffoulr@alpha:~/CompNetworks/FinalProject$ java Client
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
Only Enter Hostname and extension (ex. do not write wwww.google.com, write only google.com)
charlie.cs.uwindsor.ca
The network data will be stored into the text file: DiscoveryData.txt
Error Server Message: Did not do a WHOIS lookup because of incompatible extension

Would you like to give the server another HostName? (yes/no)
no
raffoulr@alpha:~/CompNetworks/FinalProject$
```

Test Case 4: In this final test case the client agrees to send another hostname to the client after already completing one. The server will then be prompted if they would like to continue with the same client. If both answer yes, this will restart the same process and will be executed the same way. The data from the second hostname will overwrite the text file from the first hostname so the client would need to save the text file before giving a second hostname if they wanted to save the information. In this example the hostnames youtube.com and google.com are used. You will be able to see the information gathered from google if found in the text file where it written over the YouTube information. Screenshots can be found below.

Server:

```
This is a Network Discovery Tool

Server is available at Port 8080 looking for a Client to get a Hostname (Not IP Address) do the following:
Do a WHOIS Lookup for Hostnames that qualify
Find all IP Addresses for this Hostname
For all IP Addresses found: Check if the IP is reachable and find all Open Ports


Connected to a Client

Received youtube.com from the Client
Getting and Sending Data now
Sent all Data to the Client
Client wants the Server to do another Network Discovery Job
Would you like to continue with this Client? (yes/no)
yes
Received google.com from the Client
Getting and Sending Data now
Sent all Data to the Client
Client terminated the connection
```

Client:

```
Enter ip of server you would like to connect to:
127.0.0.1
Valid server, would you like to connect? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
youtube.com
The network data will be stored into the text file: DiscoveryData.txt

Would you like to give the server another HostName? (yes/no)
yes

Connected, Enter Hostname for server to:
1 - Perform a WHOIS Lookup for Hostnames that qualify
2 - Find all IP Addresses for this Hostname
3 - For all IP Addresses found: Check if the IP is reachable and find all Open Ports
google.com
The network data will be stored into the text file: DiscoveryData.txt

Would you like to give the server another HostName? (yes/no)
no
```

DataDiscovery.txt:

DiscoveryData - Notepad
File Edit Format View Help

Network Information For google.com

WHOIS Lookup:
    Domain Name: GOOGLE.COM
    Registry Domain ID: 2138514_DOMAIN_COM-VRSN
    Registrar WHOIS Server: whois.markmonitor.com
    Registrar URL: http://www.markmonitor.com
    Updated Date: 2019-09-09T15:39:04Z
    Creation Date: 1997-09-15T04:00:00Z
    Registry Expiry Date: 2028-09-14T04:00:00Z
    Registrar: MarkMonitor Inc.
    Registrar IANA ID: 292
    Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
    Registrar Abuse Contact Phone: +1.2083895740
    Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
    Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
    Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
    Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
    Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
    Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
    Name Server: NS1.GOOGLE.COM
    Name Server: NS2.GOOGLE.COM
    Name Server: NS3.GOOGLE.COM
-
-
-
All IP Addresses found:
172.217.1.14
2607:f8b0:400b:80f:0:0:0:200e
-
-
-
IP Address 172.217.1.14 is not Reachable
IP Address 2607:f8b0:400b:80f:0:0:0:200e is not Reachable
-
-
-