

Computer Networks Assignment 3 Group Report

Date: 2020-11-30

Group Members:

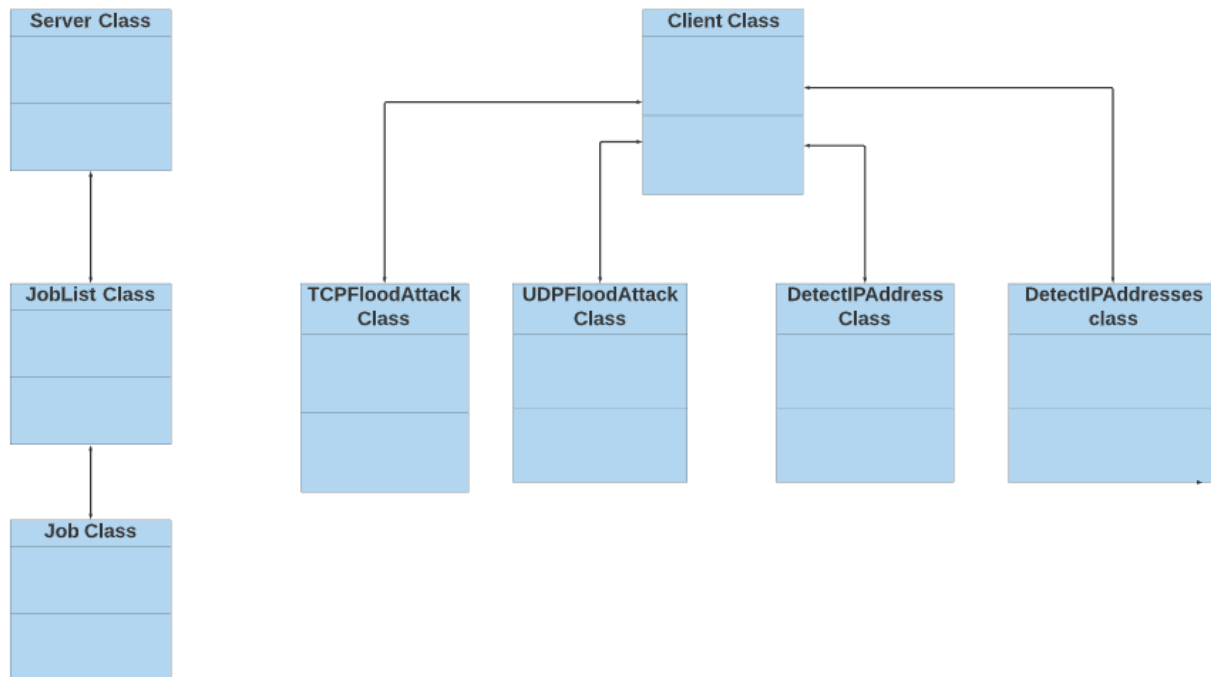
Abdul Arif (105075345)

Ayokunle Olufemi Ayoola (110021647)

Brett Shepley (104826157)

Katerina Pace (104380084)

Application Structure:



Questions:

Q1) Select any two jobs from the One-To-One Jobs category, design and implement the create-assign-execute-report. [25 points]

Classes:

Job - This class is used purely for creating objects of itself to be added into a list. The parameter of the constructor include; JobCreator, JobName, NumOfSeekers, FullJob, and JobSeekerList

JobList - This class is used to create, add, start, and join Jobs. An object of this class is made in the Server class to allow for the manipulation of the JobList and Jobs

DetectIPAddress - This class will take in a specific IPAddress which is given from the Client (Job Creator) and will ping that address and determine if that IPAddress is online or offline.

DetectIPAddresses - This class will take in a specific IPAddress which is given from the Client (Job Creator) and will connect to that IPAddress and return what ports are open, closed, or filtered.

Detect if a given IP address or Host Name is online or not. The job creator would like the job seeker to find out if a given IP address is contacted to the network or not. The job description contains at least the target IP

This task was completed by Katerina Pace (104380084)

Detect all live IP addresses on a given subnet. The job description contains the target subnet in a.b.c.d/x format

This task was completed by Abdul Arif (105075345)

Q2) Select any two jobs from the One-To-Many Jobs category design and implement the create-assign-execute-report. [25 points]

Classes:

Job - This class is used purely for creating objects of itself to be added into a list. The parameter of the constructor include; JobCreator, JobName, NumOfSeekers, FullJob, and JobSeekerList

JobList - This class is used to create, add, start, and join Jobs. An object of this class is made in the Server class to allow for the manipulation of the JobList and Jobs

TCPFloodAttack - This class will take in a specific IPAddress and Port which is given from the Client (Job Creator) and will use the targets information to constantly send TCP packets to the specified IP and Port.

UDPFloodAttack - This class will take in a specific IPAddress and Port which is given from the Client (Job Creator) and will use the targets information to constantly send UDP packets to the specified IP and Port.

The job creator ask more than one job seeker to execute a TCP flood attack (any TCP flood attack) against a given port on a given IP

This task was completed by Ayokunle Olufemi Ayoola (110021647)

The job creator ask more than one job seeker to execute a UDP flood attack against a given port on a given IP

This task was completed by Brett Robert Shepley (104826157)

Q3) Implement test cases to test your implementation [10 points]

ONE TO ONE Jobs:

Part 1:

```
C:\Users\Katpa\Documents\GitHub\Network-Project>py detectIPOnline.py
Enter the host to be scanned: 192.168.5.1
Looking to see if host is online...

Pinging 192.168.5.1 with 32 bytes of data:
Request timed out.
Request timed out.
Reply from 10.0.80.5: Destination net unreachable.
Request timed out.

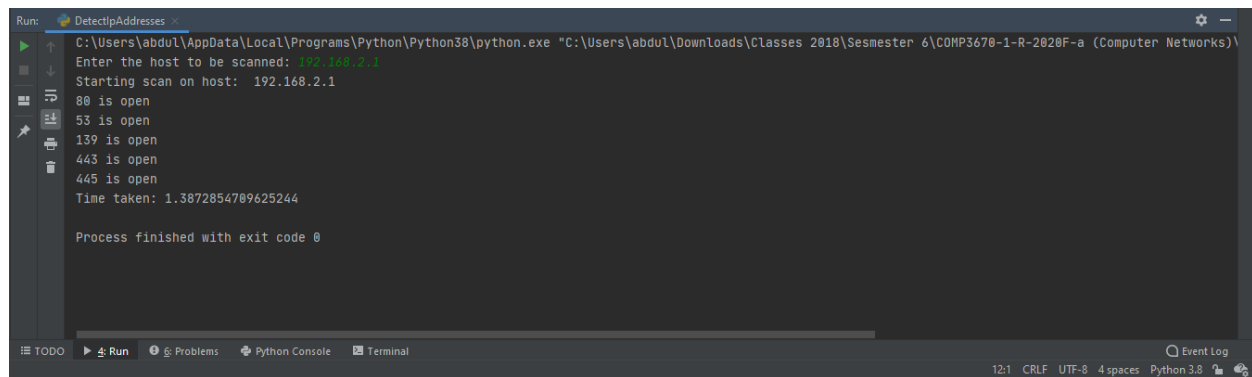
Ping statistics for 192.168.5.1:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),
192.168.5.1 is online!
```

```
C:\Users\Katpa\Documents\GitHub\Network-Project>py detectIPOnline.py
Enter the host to be scanned: 192.168.1.108
Looking to see if host is online...

Pinging 192.168.1.108 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

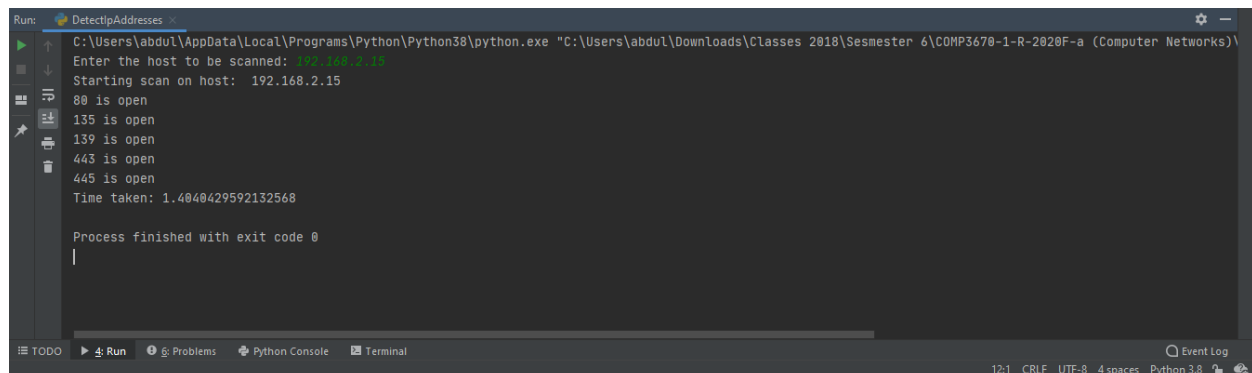
Ping statistics for 192.168.1.108:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
192.168.1.108 is not online!
```

Part 3:



```
Run: DetectIpAddresses
C:\Users\abdul\AppData\Local\Programs\Python\Python38\python.exe "C:\Users\abdul\Downloads\Classes 2018\Sesemster 6\COMP3670-1-R-2020F-a (Computer Networks)\
Enter the host to be scanned: 192.168.2.1
Starting scan on host: 192.168.2.1
80 is open
53 is open
139 is open
443 is open
445 is open
Time taken: 1.3872854709625244

Process finished with exit code 0
```



```
Run: DetectIpAddresses
C:\Users\abdul\AppData\Local\Programs\Python\Python38\python.exe "C:\Users\abdul\Downloads\Classes 2018\Sesemster 6\COMP3670-1-R-2020F-a (Computer Networks)\
Enter the host to be scanned: 192.168.2.15
Starting scan on host: 192.168.2.15
80 is open
135 is open
139 is open
443 is open
445 is open
Time taken: 1.4040429592132568

Process finished with exit code 0
```

ONE TO MANY Jobs:

Part 2:

Wi-Fi 2						
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help						
TCP						
No.	Time	Source	Destination	Protocol	Length	Info
11163	39.085792	192.168.1.135	216.8.130.26	TCP	1086	1943 → 25565 [PSH, URG, Reserve
11164	39.087317	192.168.1.187	216.8.130.26	TCP	1082	12244 → 25565 [RST] Seq=1 Min=3
11165	39.089000	192.168.1.39	216.8.130.26	TCP	1082	9431 → 25565 [SYN, RST, PSH, AC
11166	39.090613	192.168.1.119	216.8.130.26	TCP	1082	10854 → 25565 [PSH, ECN, Reserv
11167	39.092501	192.168.1.186	216.8.130.26	TCP	1090	5460 → 25565 [SYN, PSH, URG, EC
11168	39.096266	192.168.1.253	216.8.130.26	TCP	1086	60563 → 25565 [FIN, SYN, RST, P
11169	39.097918	192.168.1.199	216.8.130.26	TCP	1082	51753 → 25565 [FIN, SYN, PSH, A
11170	39.099877	192.168.1.123	216.8.130.26	TCP	1102	8537 → 25565 [ACK, URG, NS, Res
11171	39.101959	192.168.1.172	216.8.130.26	TCP	1090	16086 → 25565 [RST, PSH, ACK, E
11172	39.103735	192.168.1.131	216.8.130.26	TCP	1094	17791 → 25565 [SYN, RST, ACK, U
11173	39.105212	192.168.1.162	216.8.130.26	TCP	1090	3178 → 25565 [FIN, ACK, ECN, NS
11174	39.106952	192.168.1.215	216.8.130.26	TCP	1094	58834 → 25565 [RST, ACK, URG, E
11175	39.110352	192.168.1.191	216.8.130.26	TCP	1082	45874 → 25565 [FIN, SYN, PSH, A
11176	39.114187	192.168.1.171	216.8.130.26	TCP	1098	59272 → 25565 [FIN, RST, ACK, U
11177	39.118205	192.168.1.5	216.8.130.26	TCP	1098	23482 → 25565 [FIN, RST, ACK, E
11178	39.122070	192.168.1.183	216.8.130.26	TCP	1098	4226 → 25565 [PSH, URG, ECN, Ck
11179	39.124750	192.168.1.126	216.8.130.26	TCP	1090	55018 → 25565 [FIN, RST, PSH, E
11180	39.127930	192.168.1.85	216.8.130.26	TCP	1086	12732 → 25565 [SYN, ACK, NS, Re
11181	39.131186	192.168.1.135	216.8.130.26	TCP	1082	32782 → 25565 [SYN, PSH, ACK, C
11182	39.135948	192.168.1.14	216.8.130.26	TCP	1094	24549 → 25565 [FIN, SYN, RST, P
11183	39.139575	192.168.1.199	216.8.130.26	TCP	1094	27501 → 25565 [RST, PSH, NS] Se
11184	39.141660	192.168.1.249	216.8.130.26	TCP	1098	54812 → 25565 [RST, ACK, NS, Re
11185	39.144073	192.168.1.173	216.8.130.26	TCP	1090	56496 → 25565 [FIN, RST, PSH, A
11186	39.146368	192.168.1.182	216.8.130.26	TCP	1094	13256 → 25565 [FIN, SYN, RST, A
11187	39.148750	192.168.1.192	216.8.130.26	TCP	1090	57779 → 25565 [ACK, URG, CwR, R
11188	39.151748	192.168.1.21	216.8.130.26	TCP	1094	25770 → 25565 [PSH, ACK, URG, N
11189	39.153780	192.168.1.95	216.8.130.26	TCP	1098	34036 → 25565 [RST, CwR, NS, Re
11190	39.156033	192.168.1.139	216.8.130.26	TCP	1086	35878 → 25565 [PSH, ACK, NS, Re
11191	39.157935	192.168.1.216	216.8.130.26	TCP	1094	7485 → 25565 [RST, URG, CwR, Re
11192	39.159614	192.168.1.116	216.8.130.26	TCP	1086	33340 → 25565 [FIN, SYN, PSH, N

Part 3:

358131	665.064458	24.57.4.177	192.168.50.205	UDP	60	6452 → 25565 Len=0
358133	665.068617	24.57.4.177	192.168.50.203	UDP	60	25970 → 25565 Len=0
358135	665.074575	24.57.4.177	192.168.50.203	UDP	60	48634 → 25565 Len=0
358136	665.074609	24.57.4.177	192.168.50.203	UDP	60	1208 → 25565 Len=0
358137	665.074662	24.57.4.177	192.168.50.203	UDP	60	41220 → 25565 Len=0
358138	665.080844	24.57.4.177	192.168.50.203	UDP	60	61511 → 25565 Len=0
358139	665.080871	24.57.4.177	192.168.50.203	UDP	60	44028 → 25565 Len=0
358140	665.086000	24.57.4.177	192.168.50.203	UDP	60	21716 → 25565 Len=0
358141	665.086037	24.57.4.177	192.168.50.203	UDP	60	57251 → 25565 Len=0
358142	665.086086	24.57.4.177	192.168.50.203	UDP	60	9410 → 25565 Len=0
358143	665.086127	24.57.4.177	192.168.50.203	UDP	60	21590 → 25565 Len=0
358148	665.090429	24.57.4.177	192.168.50.203	UDP	60	23553 → 25565 Len=0
358149	665.096195	24.57.4.177	192.168.50.203	UDP	60	24343 → 25565 Len=0
358150	665.096217	24.57.4.177	192.168.50.203	UDP	60	60997 → 25565 Len=0
358151	665.096237	24.57.4.177	192.168.50.203	UDP	60	54331 → 25565 Len=0
358152	665.101743	24.57.4.177	192.168.50.203	UDP	60	59081 → 25565 Len=0
358153	665.101769	24.57.4.177	192.168.50.203	UDP	60	48853 → 25565 Len=0
358154	665.101832	24.57.4.177	192.168.50.203	UDP	60	50878 → 25565 Len=0
358155	665.101916	24.57.4.177	192.168.50.203	UDP	60	48580 → 25565 Len=0
358156	665.106100	24.57.4.177	192.168.50.203	UDP	60	27821 → 25565 Len=0
358160	665.110710	24.57.4.177	192.168.50.203	UDP	60	33242 → 25565 Len=0
358161	665.110710	24.57.4.177	192.168.50.203	UDP	60	31778 → 25565 Len=0
358162	665.116395	24.57.4.177	192.168.50.203	UDP	60	53122 → 25565 Len=0
358163	665.116421	24.57.4.177	192.168.50.203	UDP	60	29973 → 25565 Len=0
358164	665.120130	24.57.4.177	192.168.50.203	UDP	60	17366 → 25565 Len=0
358165	665.120157	24.57.4.177	192.168.50.203	UDP	60	2908 → 25565 Len=0
358168	665.124491	24.57.4.177	192.168.50.203	UDP	60	49941 → 25565 Len=0
358169	665.124491	24.57.4.177	192.168.50.203	UDP	60	29793 → 25565 Len=0
358170	665.124547	24.57.4.177	192.168.50.203	UDP	60	59203 → 25565 Len=0
358173	665.129476	24.57.4.177	192.168.50.203	UDP	60	34688 → 25565 Len=0
358174	665.134709	24.57.4.177	192.168.50.203	UDP	60	47136 → 25565 Len=0
358175	665.134800	24.57.4.177	192.168.50.203	UDP	60	36339 → 25565 Len=0
358176	665.134845	24.57.4.177	192.168.50.203	UDP	60	58052 → 25565 Len=0
358177	665.139526	24.57.4.177	192.168.50.203	UDP	60	2611 → 25565 Len=0
358178	665.154782	24.57.4.177	192.168.50.203	UDP	60	4925 → 25565 Len=0
358179	665.155576	24.57.4.177	192.168.50.203	UDP	60	28432 → 25565 Len=0
358180	665.155616	24.57.4.177	192.168.50.203	UDP	60	26632 → 25565 Len=0
358182	665.161005	24.57.4.177	192.168.50.203	UDP	60	5083 → 25565 Len=0
358189	665.163261	24.57.4.177	192.168.50.203	UDP	60	52405 → 25565 Len=0
358190	665.163261	24.57.4.177	192.168.50.203	UDP	60	51827 → 25565 Len=0
358192	665.165707	24.57.4.177	192.168.50.203	UDP	60	7947 → 25565 Len=0
358193	665.165811	24.57.4.177	192.168.50.203	UDP	60	15062 → 25565 Len=0
358194	665.167719	24.57.4.177	192.168.50.203	UDP	60	48236 → 25565 Len=0
358195	665.168320	24.57.4.177	192.168.50.203	UDP	60	31994 → 25565 Len=0