Computer Networks Assignment 3 Group Report

Date: 2020-11-30

Group Members:

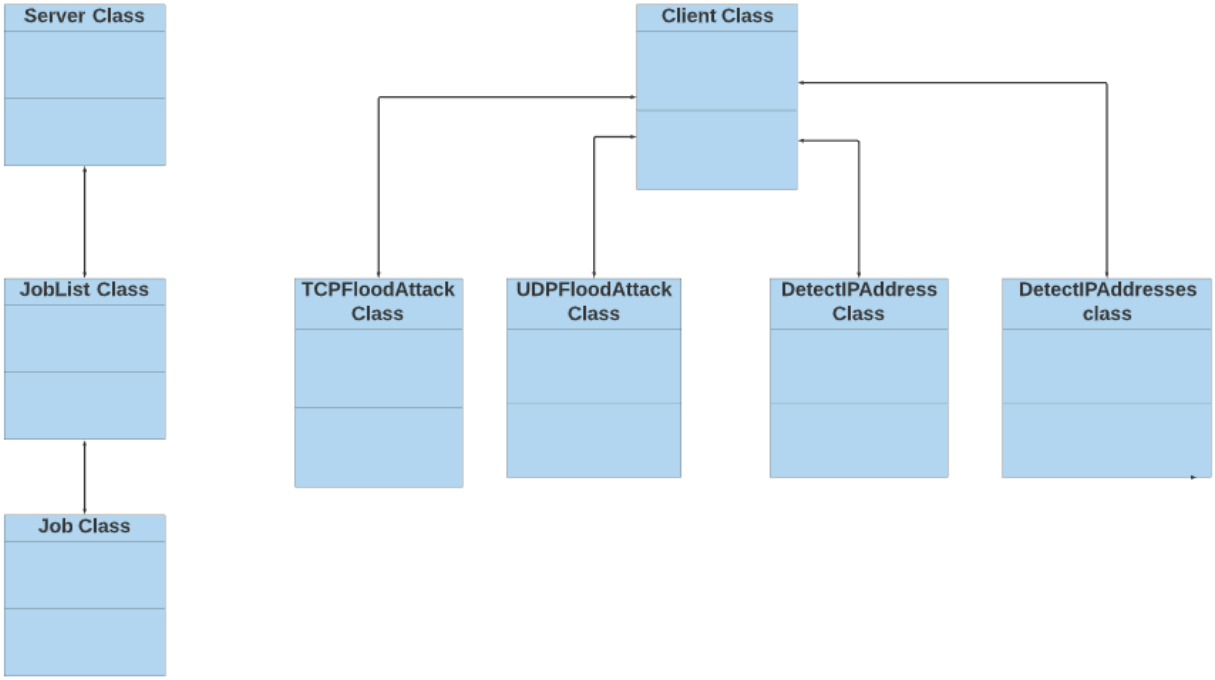
Abdul Arif (105075345)

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.

DetectIPAddesses - 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]

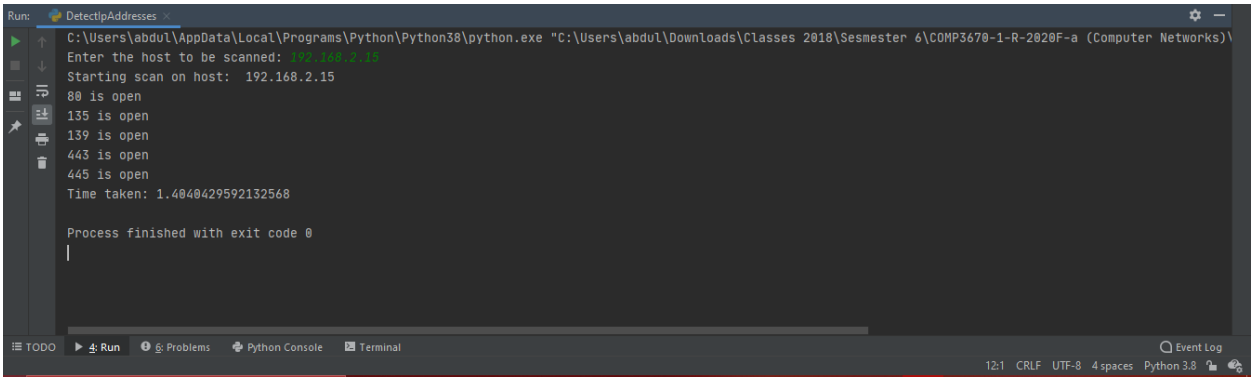
ONE TO ONE Jobs:

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!
```

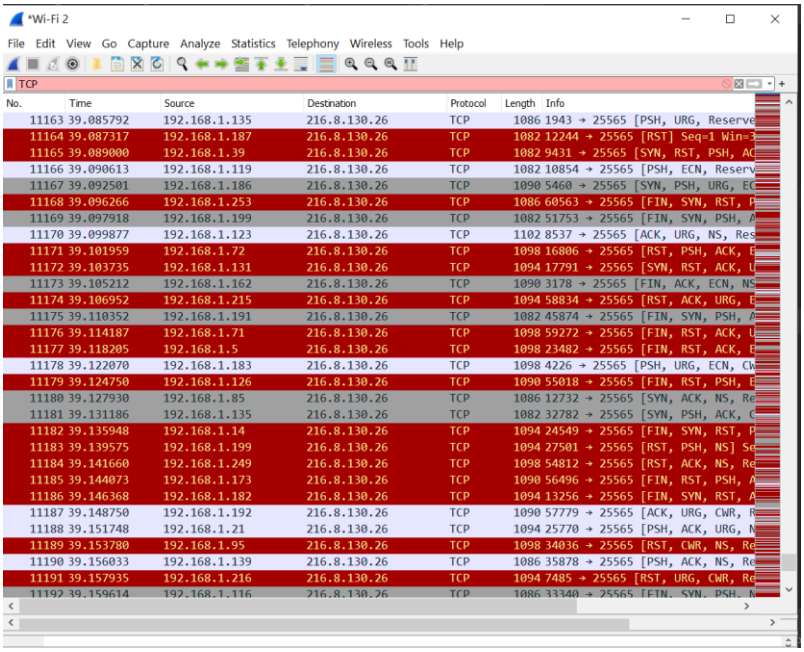
```
C:\Users\Katpa\Documents\GitHub\Network-Project>py detectIPOnline.py
Enter the host to be scanned: 192.168.1.108
Looking to see if host is online...

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:



ONE TO MANY Jobs:

Part 2:



Part 3: