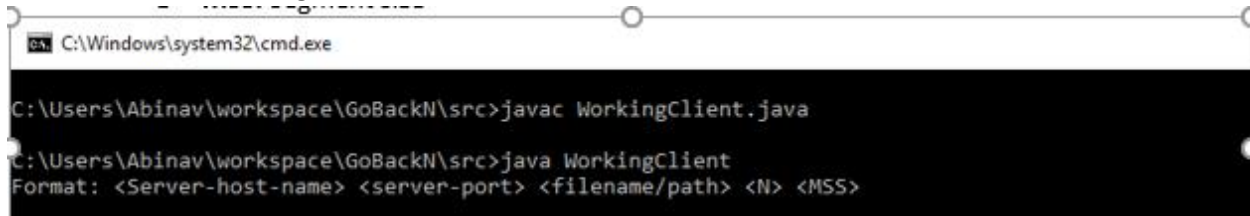


Project 2 – Go BackN

Unity ID's: apothug & ipatel

Steps to compile & execute Client:

- javac WorkingClient.java
- java WorkingClient <Parameters>
 - **Server-host-name:** Server's IP address
 - **Server-port:** Port on which the server is running
 - **Filename/path:** Provide filename (if it is the same directory as the code file or provide full path of the file)
 - **N:** Window size
 - **MSS:** Segment size



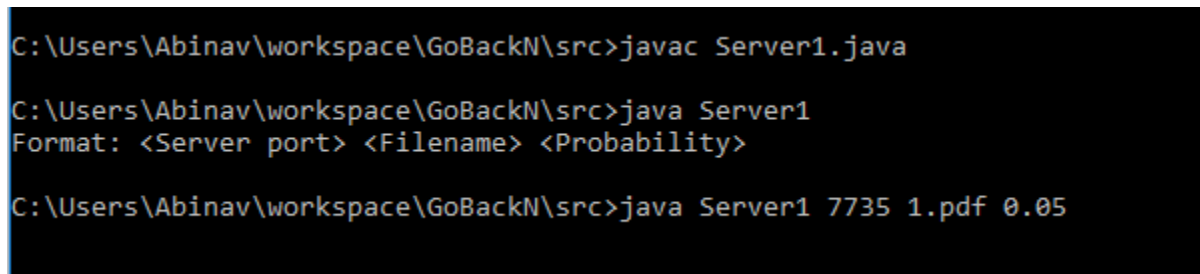
```
C:\Windows\system32\cmd.exe

C:\Users\Abinav\workspace\GoBackN\src>javac WorkingClient.java

C:\Users\Abinav\workspace\GoBackN\src>java WorkingClient
Format: <Server-host-name> <server-port> <filename/path> <N> <MSS>
```

Steps to compile & execute Server:

- javac Server1.java
- java Server1 <Parameters>
 - **Server port:** Port on which the server is running
 - **Filename:** Name of the file to be downloaded on the server
 - **Probability:** Provide the (p) value – (Loss Probability)



```
C:\Users\Abinav\workspace\GoBackN\src>javac Server1.java

C:\Users\Abinav\workspace\GoBackN\src>java Server1
Format: <Server port> <Filename> <Probability>

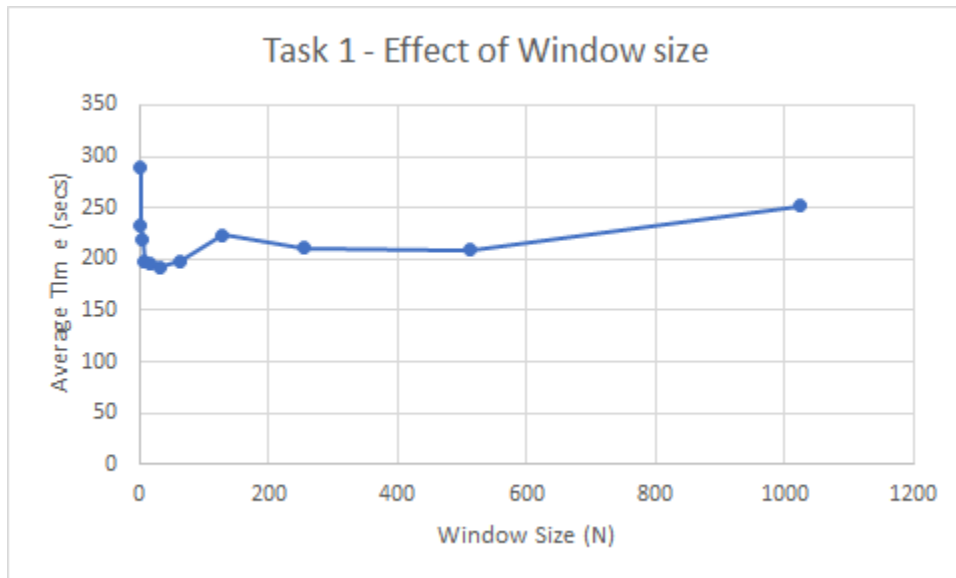
C:\Users\Abinav\workspace\GoBackN\src>java Server1 7735 1.pdf 0.05
```

Steps followed for completing tasks:

- File size used: **1.64 MB**
- Client IP: **192.168.0.9**
- Server IP: **152.1.13.60**
- Timeout value set: **1 sec**

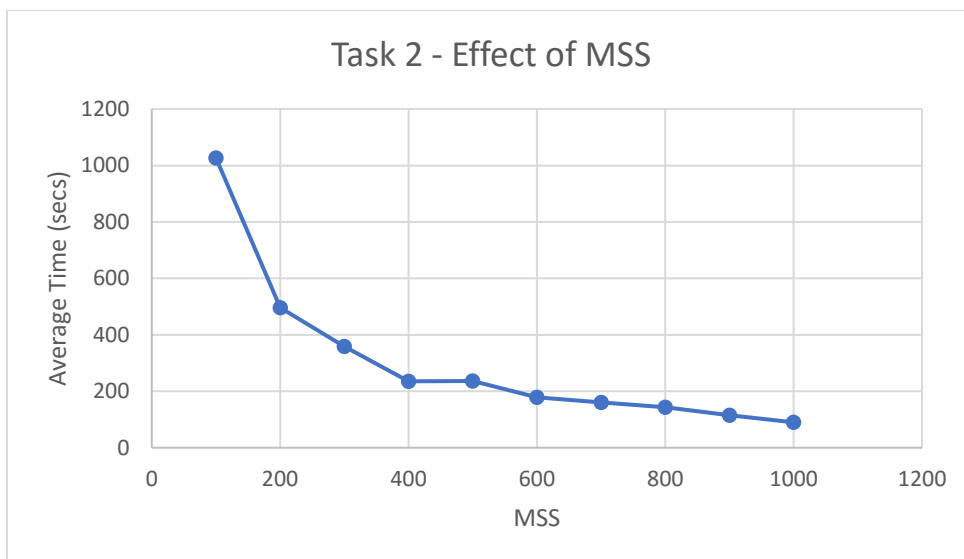
Task 1 – Effect of window size (N):

Ideally (w/o packet losses), the average time should decrease as the window size is increased. However, in this experiment the behavior is not ideal as packet losses are occurring. From the graph, it's clear that for window sizes 1, 2, ..., 64 the behavior is ideal i.e. the time taken to transfer the file is decreasing. However, we see that for the window sizes of 128,...1024 the average time is slightly higher than for previous window sizes which indicates that there were more losses and more timeouts and hence more retransmissions for the respective window sizes leading to a higher delay.



Task 2 – Effect of MSS:

The below graph shows that with increase in MSS the average time for the file transfer decreases. This is because as MSS is increased it means that more data is put into fragments leading to decrease in number of fragments which eventually leads to lower transmission delay and thus lowering the overall delay of the file transfer.



Task 3 – Effect of Loss Probability (p):

The nature of the following graph is of linear increment. This suggests that if the loss probability of a packet increases, it will take more time to transfer the file as the greater the probability gets there's more chance of loss causing time-out and eventually increasing the delay.

