SYSC 3303 Project Report

Group 2

Ali Farah 100937214

Lava Tahir 100933449

Tosin Oni 100961759

Mohamed Dahrouj 100951843

Vanja Veselinovic 100946517

April 11 2018

Contents

Breakdown of Responsibilities: 3

Diagrams: 5

Set up instructions: 13

Breakdown of Responsibilities:

For Iteration 1:

Team Member	Contributions
Ali Farah	Client Code, Helper Classes
Lava Tahir	Server Code, Helper Classes
Tosin Oni	Client Code, Helper Classes, UCM Diagrams
Mohamed Dahrouj	Server Code, Helper Classes
Vanja Veselinovic	Server Code, Helper Classes, UML Diagrams, Error Simulator

For Iteration 2:

Team Member	Contributions
Ali Farah	Error Code 1, 2 I/O error handlers
Lava Tahir	Error Code 1, 2 I/O error handlers
Tosin Oni	Error Code 3, 6 I/O error handlers
Mohamed Dahrouj	Error Code 1, 2 I/O error handlers, Timing Diagrams for all error scenarios
Vanja Veselinovic	Error Code 3, 6 I/O error handlers

For Iteration 3:

Team Member	Contributions
Ali Farah	Sorceror's Apprentice fix, lost packet, delayed packet, timeout timing diagram
Lava Tahir	Sorceror's Apprentice fix, delayed packet, duplicated packet, retransmit timing diagram
Tosin Oni	Test menu error simulator, space between duplicates
Mohamed Dahrouj	Delayed packet, duplicated packet
Vanja Veselinovic	Delayed packet, duplicated packet, updated UML

For Iteration 4:

Team Member	Contributions
Ali Farah	Error code 4, error code 5, timing diagrams error 5
Lava Tahir	Error code 4, error code 5, updating UML diagrams

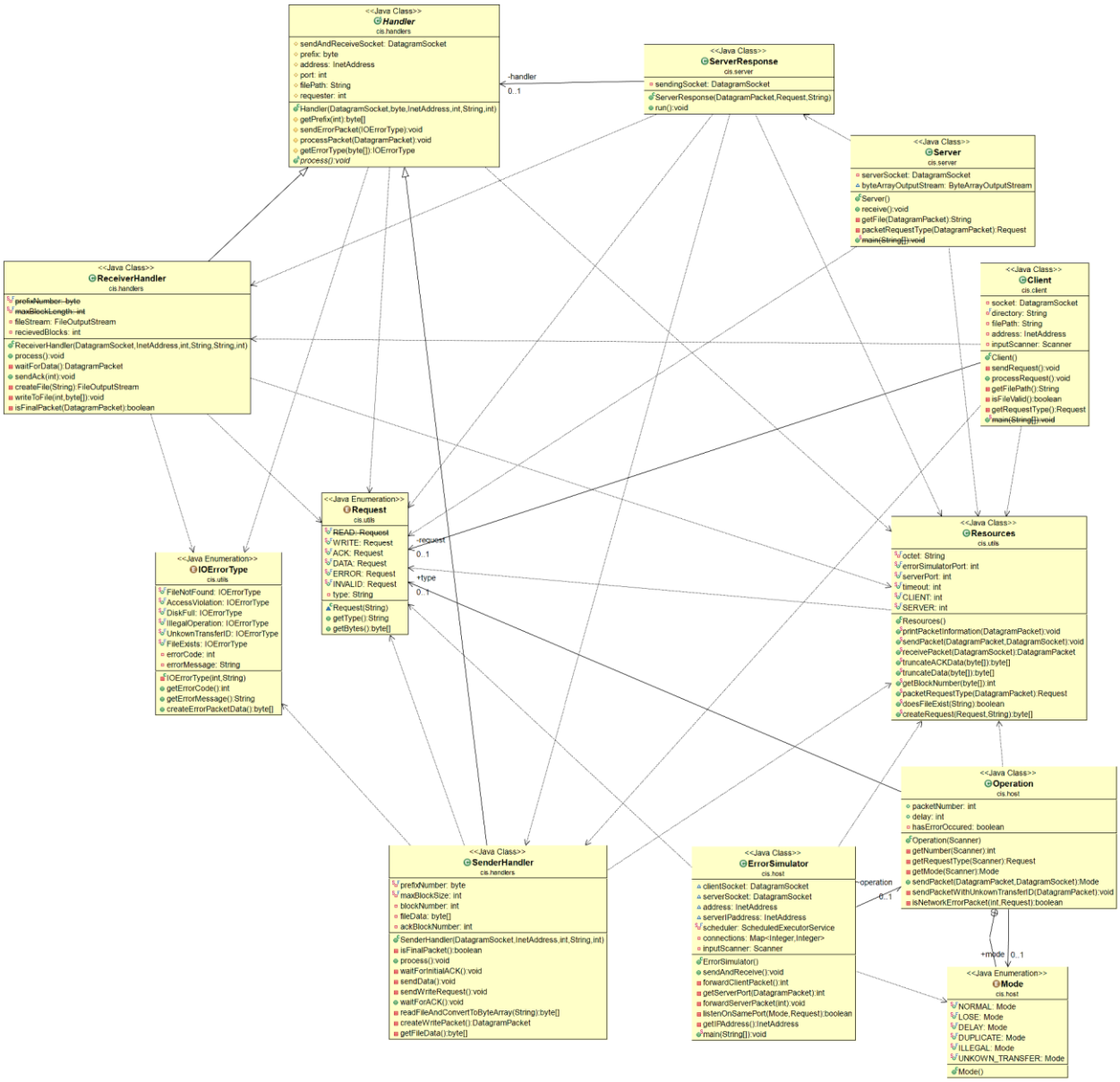
Tosin Oni	Updating test menu, error simulator
Mohamed Dahrouj	Error code 4, error code 5, timing diagrams error 4
Vanja Veselinovic	Updating test menu, error simulator

For Iteration 5:

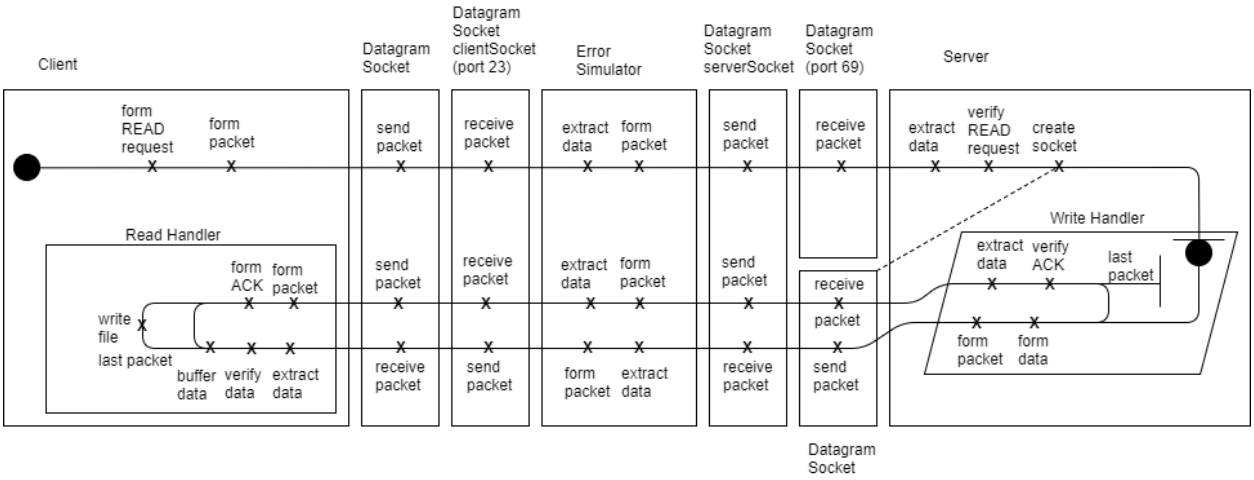
Team Member	Contributions
Ali Farah	Updating Server Host Address
Lava Tahir	Change UI to update Server Host Address
Tosin Oni	Change UI to update Server Host Address
Mohamed Dahrouj	Updating Server Host Address
Vanja Veselinovic	Testing, Updating Server Host Address

Diagrams:

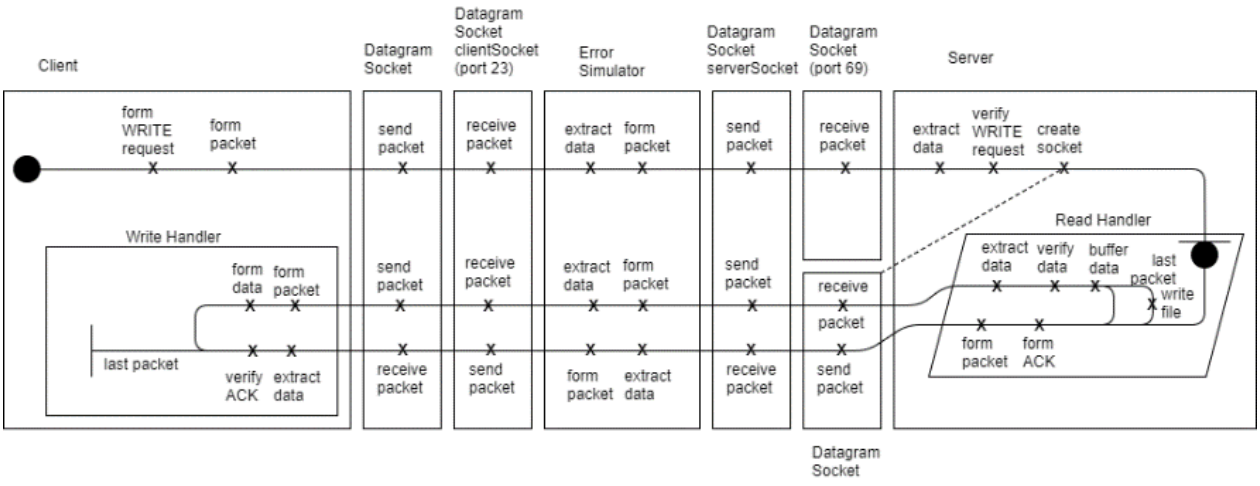
UML Class Diagram:



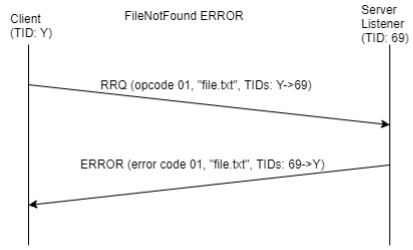
UCM Read:

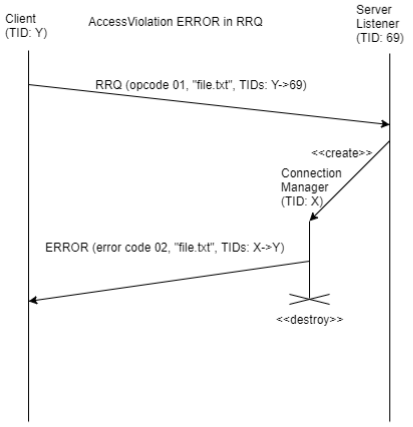


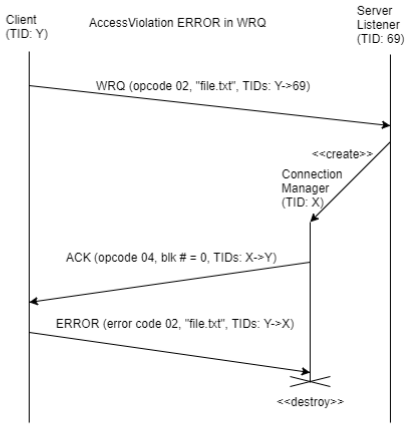
UCM Write:

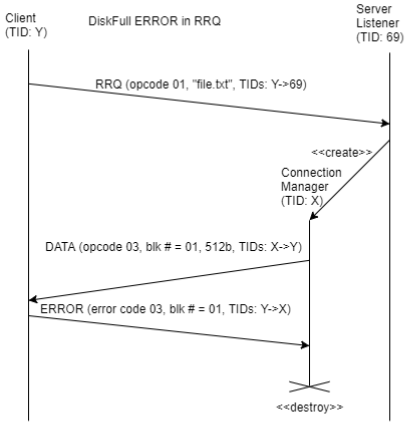


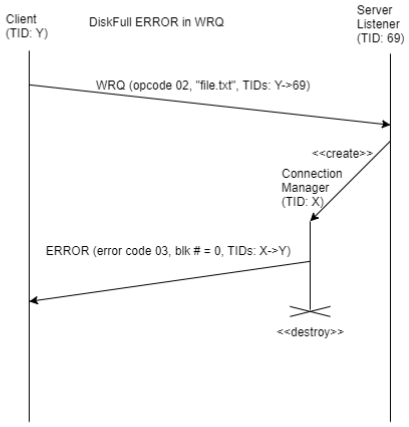
Timing Diagrams for FNF, AV, DF, FE:

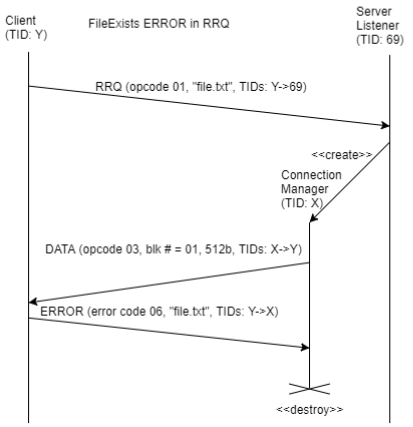


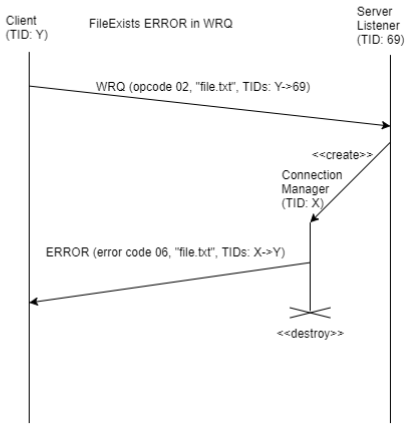






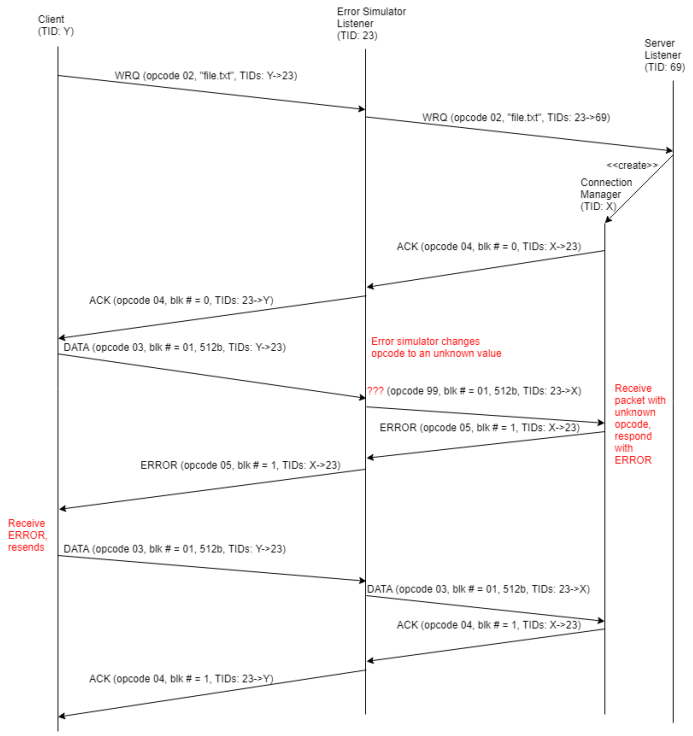




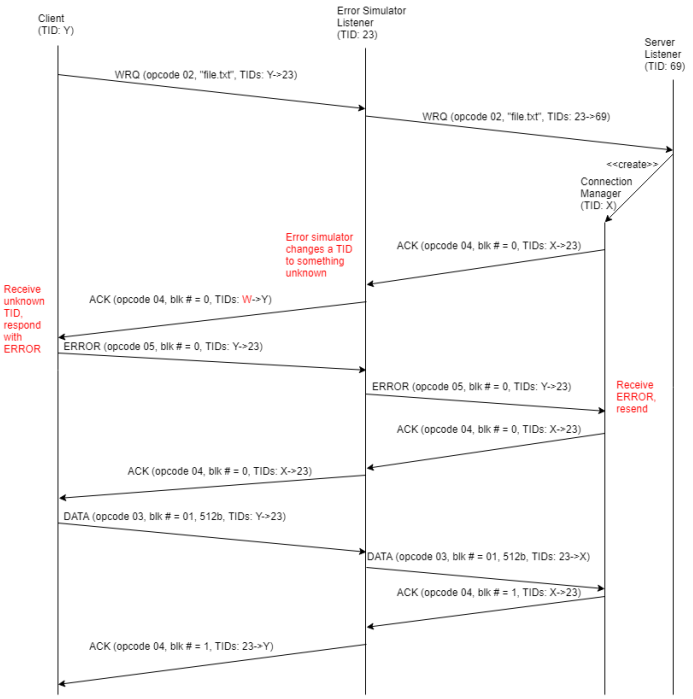


Timing Diagrams for invalid TFTP, transfer ID:

Error 4 - invalid TFTP operation

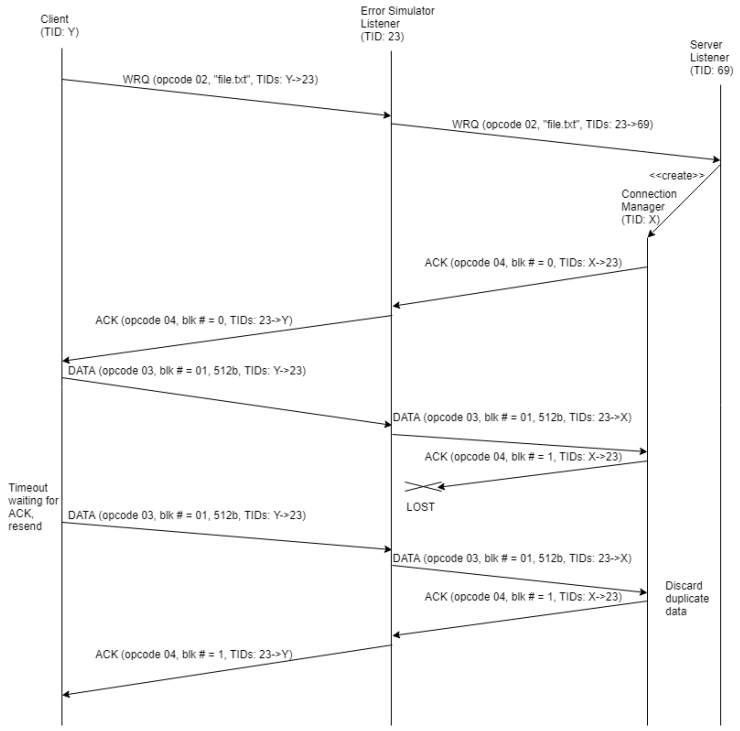


Error 5 - invalid transfer ID

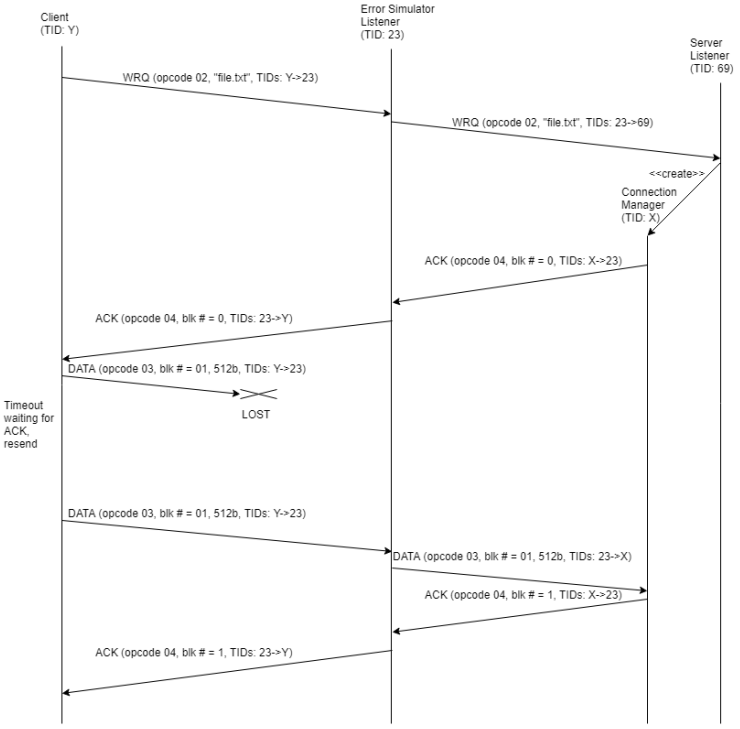


Timing Diagrams for lost ACK and Data packets:

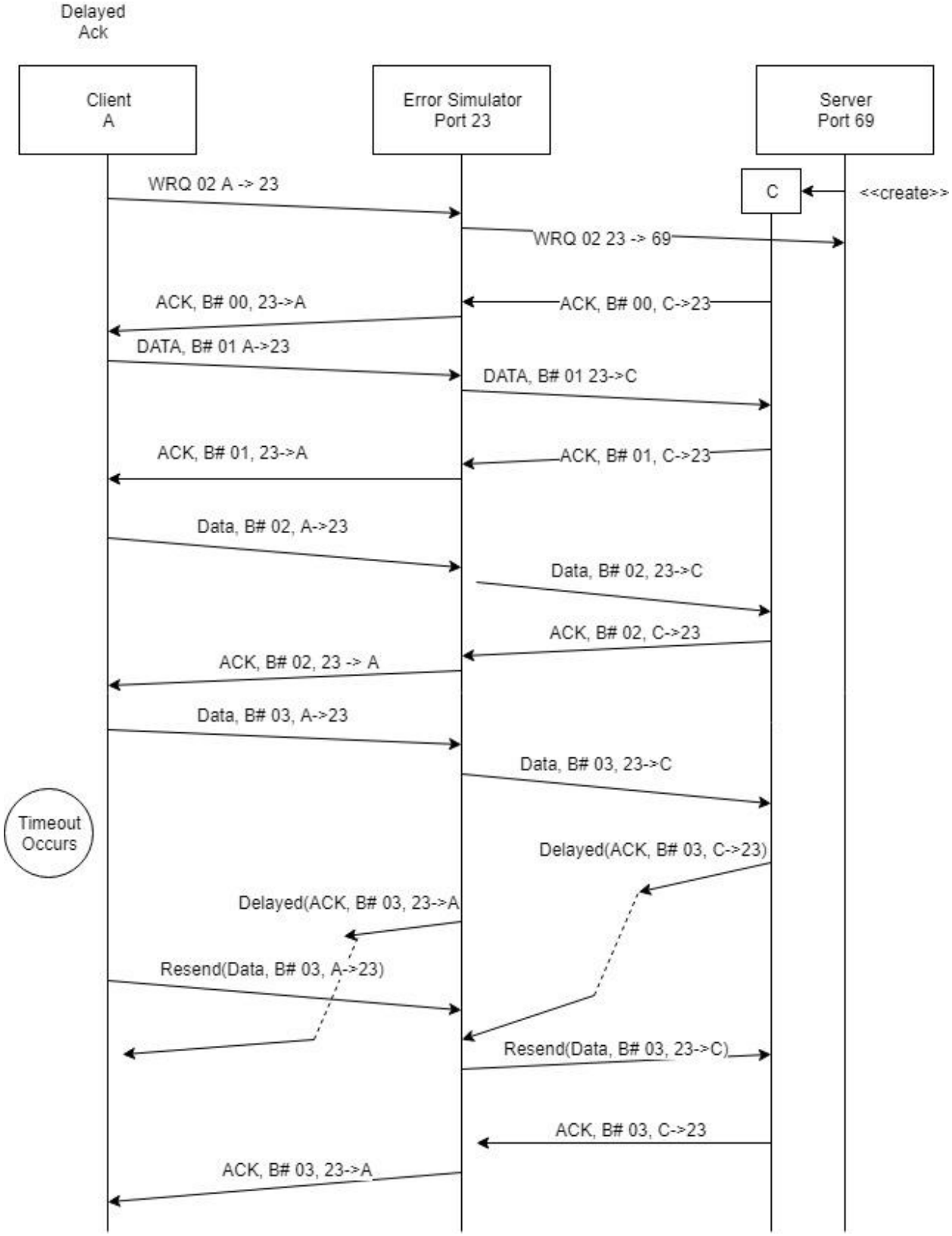
Lost ACK



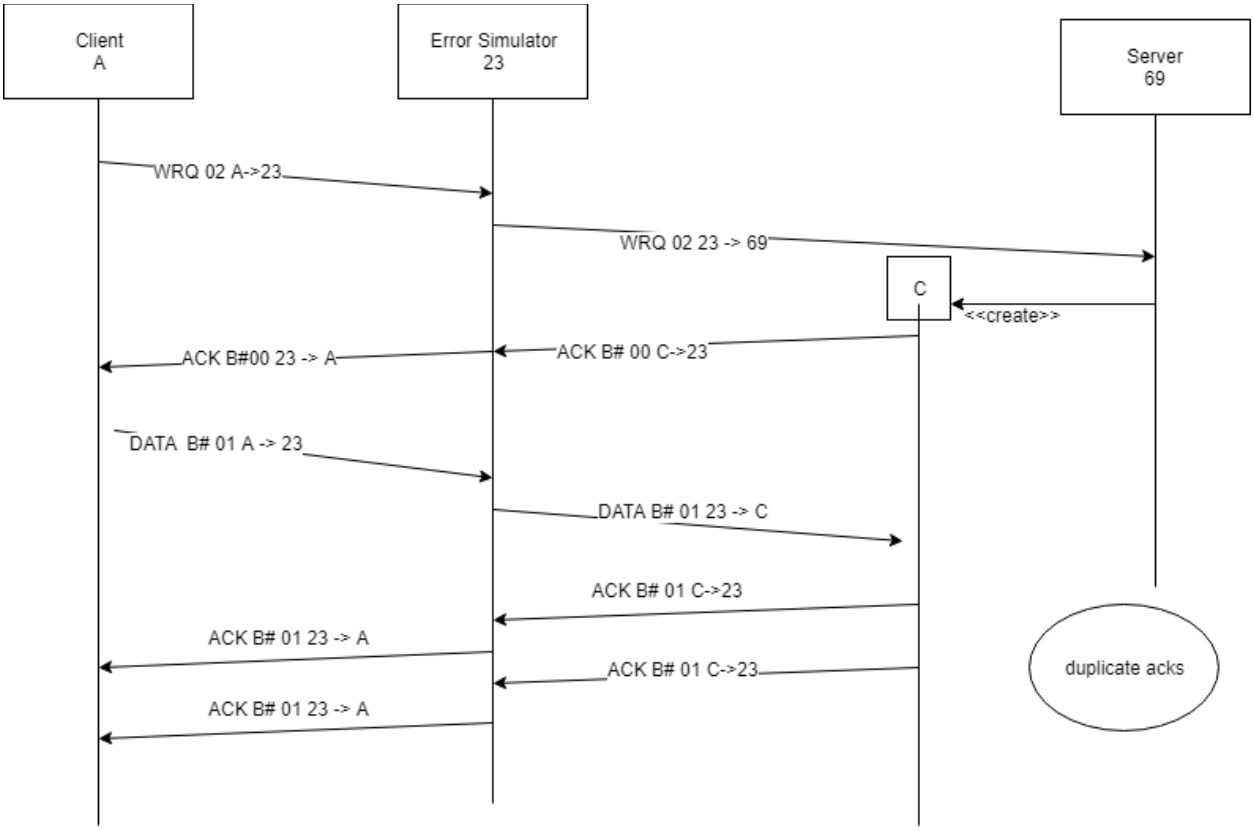
Lost DATA



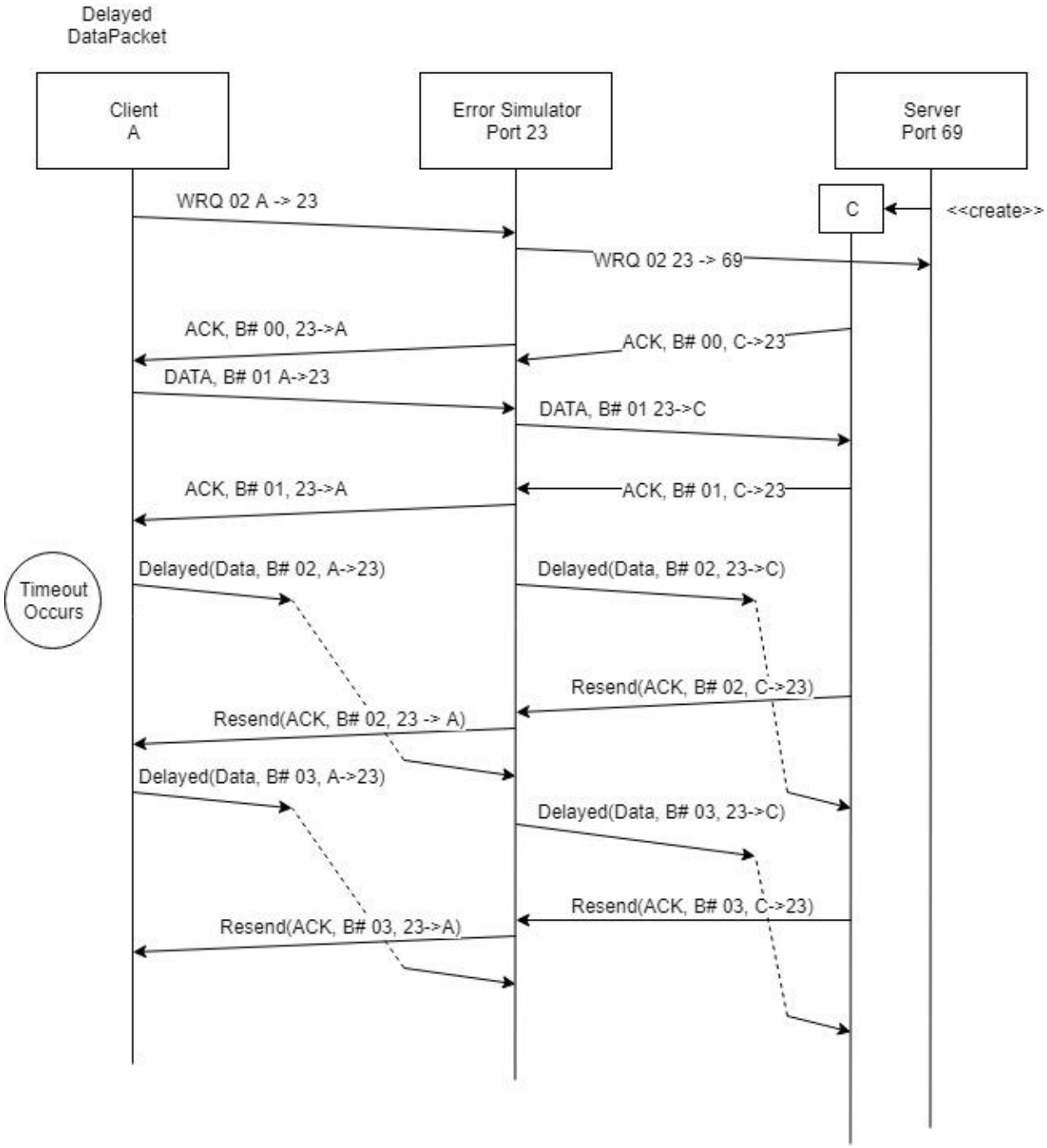
ACK Delay:


Delayed Ack
Client A
Error Simulator Port 23
Server Port 69
C
<<create>>
WRQ 02 A -> 23
WRQ 02 23 -> 69
ACK, B# 00, 23->A
ACK, B# 00, C->23
DATA, B# 01 A->23
DATA, B# 01 23->C
ACK, B# 01, 23->A
ACK, B# 01, C->23
Data, B# 02, A->23
Data, B# 02, 23->C
ACK, B# 02, C->23
ACK, B# 02, 23 -> A
Data, B# 03, A->23
Data, B# 03, 23->C
Timeout Occurs
Delayed(ACK, B# 03, C->23)
Delayed(ACK, B# 03, 23->A
Resend(Data, B# 03, A->23)
Resend(Data, B# 03, 23->C)
ACK, B# 03, C->23
ACK, B# 03, 23->A

ACK Duplicate:



Packet Delay:



Set up instructions:

1. Execute the Server.java in server folder (main)
2. Execute the ErrorSimulator.java in host folder (main)
3. Execute the Client.java in client folder (main)
4. After starting the Error Simulator you will be prompted to enter whether or not you want to delay/duplicate/ lose packet or send a illegal packet.
5. After starting the Client you will be prompted to enter the request type. Type `R` for a read request or `W` for a write request.
6. Then you will be prompted to enter the path of a file. 7a. If you enter a read request then the contents of the file that you specified will be transferred to a file of the same name in the Client folder. 7b. If you enter a write request then the contents of the file that you specified will be transferred to a file of the same name in the Server folder.
7. The client and the server response will timeout after 1s.
8. The server and the ErrorSimulator will shutdown after 300s of inactivity.

There are 5 folders within the source code.

Client:

```
Client.java : Represents the client class which interacts with the system
```

Host:

```
 ErrorSimulator.java : Represents the intermediate host which interacts between
client and server and simulates errors.
```

Server:

```
 Server.java : Represents the server which sends and receives to the intermediate
host.
```

Handlers:

```
 Handler.java: Is the base class of the WriteHandler and ReadHandler.
 WriteHandler.java: This class will send the contents of a file to the receiver.
 ReadHandler.java: This class will receive data from a file and write it to a local
file.
```

Utils:

```
 Request.java: Is an enumerated class that represents the request types of the
packets in the simulation
 Resources.java : Is a common class that is used by all the Client, ErrorSimulator
and Server to print, send and receive packets.
 IOErrorType.java : A class that enumerates the different IO error types.
```