Project 3 Report

Leah Lee

- The programs work well. If you want to see the screenshots, they are on the next two pages
- To communicate with our server
 - 1. Type java ServerTCP 10015 (10010 + group number 5)
 - 2. Type java ClientTCP tux____ 10015
 - 3. Type user inputs for x, a3, a2, a1, and a0 to send a request
 - 4. Type any character(s) after receiving a response message to send another request
 - 5. Otherwise, type q to quit the client program
 - 6. To end the server program, press control + c
- To communicate with another server
 - 1. Wait for another server to run their server
 - 2. Type java ClientTCP tux____ 10011 (10010 + group number 1)
 - 3. Type user inputs for x, a3, a2, a1, and a0 to send a request
 - 4. Type any character(s) after receiving a response message to send another request
 - 5. Otherwise, type q to quit the client program
- To communicate with another client
 - 1. Type java ServerTCP 10015 (10010 + group number 5)
 - 2. Wait for another client to send their request
 - 3. Our server will send the response message
 - 4. To end the server program, press control + c

```
jzl0213@tux059:~/Project3$ java ClientTCP tux056 10015
jzl0213@tux056:~/Project3$ java ServerTCP 10015
Received Binary-Encoded Request:
                                                                   User Prompt:
Total Message Length = 0x09
reqID = 0x00 0x01
                                                                   Enter x for P(x) = a3x^3 + a2x^2 + a1x + a0: 12
x = 0x0C
                                                                   Enter the coefficient a3: 8
a3 = 0x08
                                                                   Enter the coefficient a2: 5
a2 = 0x05
                                                                   Enter the coefficient a1: 3
                                                                   Enter the coefficient a0: 9
a1 = 0x03
a0 = 0x09
                                                                   Received Response message:
Checksum = 0x0D
Client will print this message:
                                                                   Total Message Length = 0x09
                                                                   request ID = 0 \times 00 \ 0 \times 01
Total Message Length = 0x09
                                                                   error code = 0x00
request ID = 0 \times 000 \ 0 \times 01
                                                                   result = 0x00 0x00 0x38 0xFD
                                                                   checksum = 0x0D
error code = 0x00
result = 0x00 0x00 0x38 0xFD
                                                                   Original polynomial P(x) is 8x^3 + 5x^2 + 3x + 9
checksum = 0x0D
                                                                   Original x is 12
Therefore, P(x) = a3x^3 + a2x^2 + a1x + a1 = 14589
Original polynomial P(x) is 8x^3 + 5x^2 + 3x + 9
Original x is 12
Therefore, P(x) = a3x^3 + a2x^2 + a1x + a1 = 14589
                                                                    Time expressed (Round Trip): 23.0 ms
                                                                   Enter q if you want to quit this program. Otherwhise, type any other character(s): \hfill\Box
```

First request

```
Otherwhise, type any other character(s): g
                                                                User Prompt:
Received Binary-Encoded Request:
                                                                Enter x for P(x) = a3x^3 + a2x^2 + a1x + a0: 5
Total Message Length = 0x09
                                                               [Enter the coefficient a3: 2
[Enter the coefficient a2: 7
[Enter the coefficient a1: 64
reqID = 0x00 0x02
x = 0x05
a3 = 0x02
a2 = 0x07
                                                                Enter the coefficient a0: 17
a1 = 0x40
a0 = 0x11
                                                                Received Response message:
Checksum = 0x04
                                                                Total Message Length = 0x09
Client will print this message:
                                                                reqest ID = 0x00 0x02
                                                                error code = 0x00
Total Message Length = 0x09
                                                                result = 0x00 0x00 0x02 0xFA
request ID = 0x00 0x02
                                                                checksum = 0x04
error code = 0x00
result = 0x00 0x00 0x02 0xFA
                                                                Original polynomial P(x) is 2x^3 + 7x^2 + 64x + 17
                                                                Original x is 5
checksum = 0x04
                                                                Therefore, P(x) = a3x^3 + a2x^2 + a1x + a1 = 762
Original polynomial P(x) is 2x^3 + 7x^2 + 64x + 17
                                                                Time expressed (Round Trip): 3.0 ms
Original x is 5
Therefore, P(x) = a3x^3 + a2x^2 + a1x + a1 = 762
                                                                Enter q if you want to quit this program.
                                                                Otherwhise, type any other character(s):
```

Second request

```
Received Binary-Encoded Request:
                                                                                                                 Enter q if you want to quit this program.
                                                                                                                Otherwhise, type any other character(s): g
Total Message Length = 0x09
reqID = 0x00 0x03
x = 0x0A
a3 = 0x02
a2 = 0x03
a1 = 0x00
a0 = 0x04
Checksum = 0x0E
                                                                                                                User Prompt:
                                                                                                                [Enter x for P(x) = a3x^3 + a2x^2 + a1x + a0: 10
                                                                                                                Enter the coefficient a3: 2
Enter the coefficient a2: 3
                                                                                                                Enter the coefficient a1: 0
Enter the coefficient a0: 4
                                                                                                                Received Response message:
Client will print this message:
                                                                                                                Total Message Length = 0x09
reqest ID = 0x00 0x03
error code = 0x00
result = 0x00 0x00 0x09 0x00
checksum = 0x0E
Total Message Length = 0x09
reqest ID = 0x00 0x03
error code = 0x00
result = 0x00 0x00 0x09 0x00
 checksum = 0x0E
                                                                                                                Original polynomial P(x) is 2x^3 + 3x^2 + \theta x + 4
Original x is 10
Therefore, P(x) = 33x^3 + 32x^2 + 31x + 31 = 2304
Original polynomial P(x) is 2x^3 + 3x^2 + \theta x + 4
Original x is 10
Therefore, P(x) = a3x^3 + a2x^2 + a1x + a1 = 2304
                                                                                                                 Time expressed (Round Trip): 4.0 ms
                                                                                                                Enter q if you want to quit this program. Otherwhise, type any other character(s): q jzl02130tux059:~/Project3$ []
```

Third request and quit