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CS 380
Exercise 2

My repository for this class is under CS 380 – Computer Networks
https://github.com/jarodNakamoto/College-CS-Courses.git


Source Code Below:

```java
import java.io.InputStream;
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.OutputStream;
import java.io.PrintStream;
import java.net.Socket;
import java.util.Scanner;
import java.util.Random;
import java.io.IOException;
import java.util.zip.CRC32;

public final class Ex2Client {

    public static void main(String[] args) throws Exception {

            try (Socket socket = new Socket("18.221.102.182", 38102)) {

                    //display that server connection was successful
                    String address = socket.getInetAddress().getHostAddress();
                    System.out.printf("Connected to: %s%n", address);

                    //recieves bytes
            InputStream is = socket.getInputStream();

                    System.out.print("Received bytes:");
                    byte[] bytesTranslated = new byte[100];

                    for(int i = 0; i < 100; i++)
                    {
                            if(i%10 == 0)
                            {
                                    System.out.println();
                                    System.out.print("   ");
                            }
                            int halfByte1 = is.read();
```

```java
                        int halfByte2 = is.read();

                        halfByte1 = halfByte1 << 4;
                        bytesTranslated[i] = (byte)(halfByte1 ^ halfByte2);
                        System.out.print(String.format("%02X", bytesTranslated[i]));
                }

                //create CRC-32 value
                CRC32 crc32 = new CRC32();
                crc32.update(bytesTranslated);

                Long crcVal = new Long(crc32.getValue());
                byte[] crcValBytes = new byte[4];
                Long copy = new Long(crcVal.longValue());

                //take the long and make it into four bytes
                for(int i = 0; i < 4; i++)
                {
                        crcValBytes[i] = copy.byteValue();
                        copy = copy >> 4;
                }

                System.out.println("\nGenerated CRC32: " + String.format("%08X",
crcVal.intValue()) +".");

                //sends bytes to server
                OutputStream os = socket.getOutputStream();
                os.write(crcValBytes);

                //receive if crc is correct
                if(is.read() == 1)
                        System.out.println("Response good");
                else
                        System.out.println("Response good");
                System.out.println("Disconnected from server.");
                is.close();
        }
      }
}
```