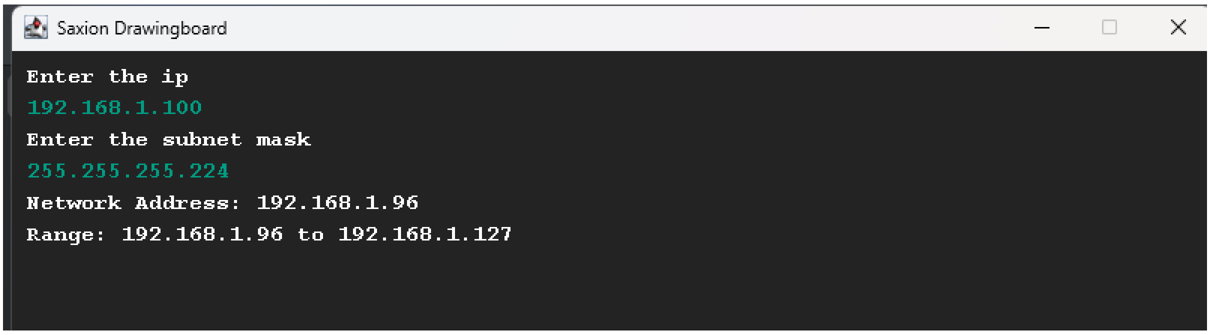
Bonus Point Assignment - Week 6



```
Enter the ip
192.168.1.100
Enter the subnet mask
255.255.255.224
Network Address: 192.168.1.96
Range: 192.168.1.96 to 192.168.1.127
```

```
import nl.saxion.app.SaxionApp;
public class Application implements Runnable {

    public static void main(String[] args) {
        SaxionApp.start(new Application(), 800, 600);
    }

    public void run() {
        SaxionApp.printLine("Enter the ip");
        String ipAddress = SaxionApp.readString();

        SaxionApp.printLine("Enter the subnet mask");
        String subnetMask = SaxionApp.readString();

        //converting from string to int
        int ip = ipToInteger(ipAddress);
        int mask = ipToInteger(subnetMask);
//         SaxionApp.printLine(mask);
//         SaxionApp.printLine(ip);

        int networkAddress = ip & mask;

        // calc num of addresses and last address in subnet
        int numAddresses = 1 << (32 - Integer.bitCount(mask));
        int endAddress = networkAddress + numAddresses - 1;

        // Output results
        SaxionApp.printLine("Network Address: " +
integerToIp(networkAddress));
        SaxionApp.printLine("Range: " + integerToIp(networkAddress) + "
to " + integerToIp(endAddress));
    }

    // Convert IP address string to an integer
    private static int ipToInteger(String ip) {
        //split at decmials
        String[] parts = ip.split("\\.");
        int result = 0;
        //loop through each part
        for (int i = 0; i < 4; i++) {
            //convert to integer,shift left, and add shifted value into
result so that the ip is in correct order
            result |= Integer.parseInt(parts[i]) << (24 - (i * 8));
        }
        return result;
    }
    // Convert integer back to string
    private static String integerToIp(int value) {
        return ((value >> 24) & 0xFF) + "." +
                ((value >> 16) & 0xFF) + "." +
                ((value >> 8) & 0xFF) + "." +
                (value & 0xFF);
    }
}
```