Template Week 6 – Networking

Student number: 562505

Assignment 6.1: Working from home

Screenshot installation openssh-server:

Screenshot successful SSH command execution:

Screenshot successful execution SCP command:

Screenshot remmina:

Assignment 6.2: IP addresses websites

Relevant screenshots nslookup command:

Screenshot website visit via IP address:

Assignment 6.3: subnetting

How many IP addresses are in this network configuration 192.168.110.128/25?

What is the usable IP range to hand out to the connected computers?

Check your two previous answers with this calculator:
https://www.calculator.net/ip-subnet-calculator.html

Explain the above calculation in your own words.

Assignment 6.4: HTML

Screenshot IP address Ubuntu VM:

Screenshot of Site directory contents:

Screenshot python3 webserver command:

Screenshot web browser visits your site

Bonus point assignment – week 6

Remember that bitwise java application you've made in week 2? Expand that application so that you can also calculate a network segment as explained in the PowerPoint slides of week 6. Use the bitwise & AND operator. You need to be able to input two Strings. An IP address and a subnet.

IP: 192.168.1.100 and subnet: 255.255.255.224 for /27

```
Example: 192.168.1.100/27
Calculate the network segment
IP Address:   11000000.10101000.00000001.01100100
Subnet Mask:  11111111.11111111.11111111.11100000
-----------------------------------------------
Network Addr: 11000000.10101000.00000001.01100000

This gives 192.168.1.96 in decimal as the network address.
For a /27 subnet, each segment (or subnet) has 32 IP addresses (2^5).
The range of this network segment is from 192.168.1.96 to 192.168.1.127.
```

Paste source code here, with a screenshot of a working application.

```
public class Main {

   public static void main(String[] args)

      int ip1 = SaxionApp.readInt("Enter first part of the IP address (IP1): ");

      int ip2 = SaxionApp.readInt("Enter second part of the IP address (IP2): ");
```

```
        int ip3 = SaxionApp.readInt("Enter third part of the IP address (IP3): ");
        int ip4 = SaxionApp.readInt("Enter fourth part of the IP address (IP4): ");

        int mask1 = SaxionApp.readInt("Enter first part of the subnet mask (Mask1): ");
        int mask2 = SaxionApp.readInt("Enter second part of the subnet mask (Mask2): ");
        int mask3 = SaxionApp.readInt("Enter third part of the subnet mask (Mask3): ");
        int mask4 = SaxionApp.readInt("Enter fourth part of the subnet mask (Mask4): ");

        int net1 = ip1 & mask1;
        int net2 = ip2 & mask2;
        int net3 = ip3 & mask3;
        int net4 = ip4 & mask4;

        SaxionApp.printLine("Network Address: " + net1 + "." + net2 + "." + net3 + "." + net4);
    }
}
```

```
Network Address: 192.168.1.96

Process finished with exit code 0
```

Ready? Save this file and export it as a pdf file with the name: **week6.pdf**