Template Week 1 – Bits & Bytes

Student number: 562505

Assignment 1.1: Bits & Bytes intro

What are Bits & Bytes?

A bit is either a 1 or a 0.

A byte is 8 bits together to form some kind of output.

What is a nibble?

A nibble is 4 bits or half a byte that also outputs something.

What relationship does a nibble have with a hexadecimal value?

A nibble can show perfectly 16 unique values, so that aligns perfectly with a hexadecimal.

Why is it wise to display binary data as hexadecimal values?

Much simpler, readable.

What kind of relationship does a byte have with a hexadecimal value?

An IPv4 subnet is 32-bit, show with a calculation why this is the case.

Assignment 1.2: Your favourite colour

Hexadecimal colour code:

Assignment 1.3: Manipulating binary data

Colour	Colour code hexadecimaal (RGB)	Big Endian	Little Endian
RED			
GREEN			
BLUE			
WHITE			
Favourite (previous assignment)			

Screenshot modified BMP file in hex editor:

Bonus point assignment – week 1

Convert your student number to a hexadecimal number and a binary number.

Explain in detail that the calculation is correct. Use the PowerPoint slides of week 1.

I got the hexadecimal by dividing 562505 with 16 and getting the remainder each time until 0

HEX 89549

The same thing with Binary, I just divided with 2 instead of 16.

BIN 10001001010111101001

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