Template Week 1 – Bits & Bytes

Student number:

Assignment 1.1: Bits & Bytes intro

What are Bits & Bytes?

Datatypes die bestaan uit nulletjes en minnetjes (uit het binaire stelsel)

What is a nibble?

What relationship does a nibble have with a hexadecimal value?

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

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.

Studentennummer: 547367

547367/2=273683,5

2*273683=547366

1

273683/2=136841,5

2*136841=273682

1

136841/2=68420,5

2*68420=136840

1

68420/2=34210

34210*2=68420

0

34210/2=17105

2*17105 = 34210

0

17105/2=8552,5

2*8552=17104

1

8552/2=4276

2*4276 = 8552

0

4276 /2=2138

2*2138=4276

0

2138/2=1069

2*1069 = 2138

0

1069 /2=534,5

2*534=1.068

1

534/2=267

2*267=534

0

267/2=133,5

133*2=266

1

133/2=66,5

2*66=132

1

66/2=33

2*33=66

0

33/2=16,5

16*2=32

1

16/2=8

2*8=16

0

8/2=4

2*4=8

0

4/2=2

2*2=4

0

2/2=1

2*1=2

0

1/2=0,5

2*0,5=1

0

0,5/2=0,25

2*0,25=0,5

Dus 547367 is 11100100010110100000 in binair

1110|0100|0101|0110|0000

Dus het is e6780 in hexadecimaal

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