Template Week 1 – Bits & Bytes

Student number: 592513

Assignment 1.1: Bits & Bytes intro

What are Bits & Bytes?

1 en 8 nullen en enen achter elkaar

What is a nibble?

4 nullen en eenen

What relationship does a nibble have with a hexadecimal value?

Een nibble kan 16 values laten zien

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

Het is makkelijk te gebruiken

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

2097152

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

Je kunt naar een enorm hoog getal

Assignment 1.2: Your favourite color

Hexadecimal color code:

245, 192, 20

Assignment 1.3: Manipulating binary data

Color	Color code hexadecimaal (RGB)	Big Endian	Little Endian
RED	255, 0 , 0	001F	1F00
GREEN	0, 255 ,0	03E0	E003
BLUE	0, 0, 255	7C00	007C
WHITE	255, 255, 255	7FFF	FF7F
Favourite (previous assignment)	245, 192, 20	0000	0000

Screenshot modified BMP file in hex editor:
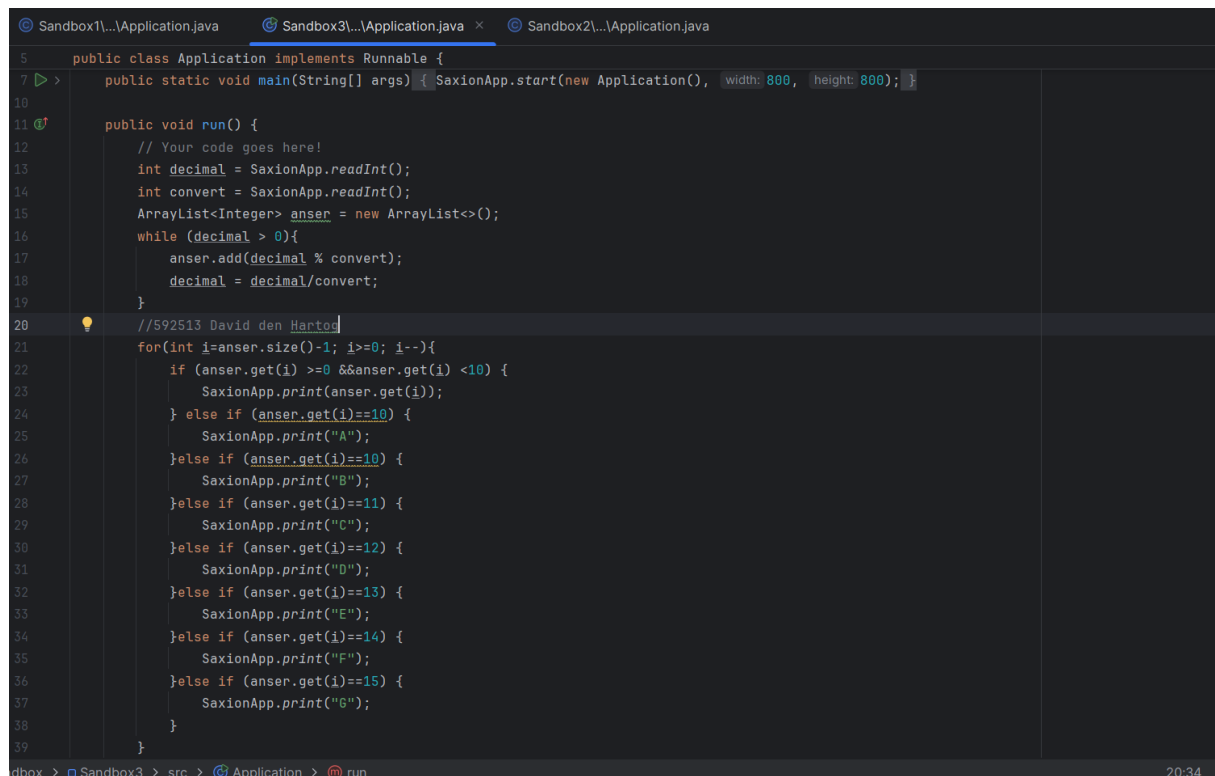
Assignment 1.4: Student number to HEX and Binary

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.

10010000101010000001

2205201

90A81

```java
public class Application implements Runnable {
    public static void main(String[] args) { SaxionApp.start(new Application(), width: 800, height: 800); }

    public void run() {
        // Your code goes here!
        int decimal = SaxionApp.readInt();
        int convert = SaxionApp.readInt();
        ArrayList<Integer> anser = new ArrayList<>();
        while (decimal > 0){
            anser.add(decimal % convert);
            decimal = decimal/convert;
        }
        //592513 David den Hartog
        for(int i=anser.size()-1; i>=0; i--){
            if (anser.get(i) >=0 &&anser.get(i) <10) {
                SaxionApp.print(anser.get(i));
            } else if (anser.get(i)==10) {
                SaxionApp.print("A");
            }else if (anser.get(i)==10) {
                SaxionApp.print("B");
            }else if (anser.get(i)==11) {
                SaxionApp.print("C");
            }else if (anser.get(i)==12) {
                SaxionApp.print("D");
            }else if (anser.get(i)==13) {
                SaxionApp.print("E");
            }else if (anser.get(i)==14) {
                SaxionApp.print("F");
            }else if (anser.get(i)==15) {
                SaxionApp.print("G");
            }
        }
    }
```

504238

8,75

6,7

1,04

7,6

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