2020-09-01 Binary

Tuesday, September 1, 2020 11:09 AM

- In our class, we do up to 16 bit "words"
- Often we look at 8-bit "words"
  - 8 bits -> 1 byte
- It is very helpful to know powers of two up to 2^10 (1024)

Converting from binary to decimal

11001101

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
128	64	32	16	8	4	2	1
1	1	0	0	1	1	0	1

128 + 64 + 8 + 4 +1 = 205

01111011
1 + 2 + 8 + 16 + 32 + 64 = 123

Powers of 2

1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024

Converting from decimal to binary

1; 244 - 128 = 116
1; 116 - 64 = 52
1; 52 - 32 = 20
1; 20 - 16 = 4
0; X8
1; 4 - 4 = 0
0; X2
0; X1

11110100

2^32 = 4.2 billion = 4GB