**Lecture 2 – numbers, range**

Decimal – base 10 with digits: 0,1,2,3,4,5,6,7,8,9

Binary – base 2 with digits: 0,1

Octal base 8 with digits: 0,1,2,3,4,5,6,7

Hexadecimal – with digits 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

Most significant digit -> 10101011 <- Least significant digit

Special

Binary – octal 0 hexadecimal

Binary 100 111 011 111 010 100

Octal 4 7 3 7 2 4

Binary 0001 0011 1011 1110 1010 0000

Hexadecimal 1 3 B E A 0

Presentation of numbers in the computer, integer

Integers

Unsigned (0, thru max 1)

Signed (-(max 1) through max)

In unsigned numbers the most significant bit is part of the value

In signed numbers the most significant bit is a sign of the numbers

0 – if the number is positive or zero

1 – if the number is negative