

## Worksheet 2

Try to solve these problems by hand first before checking your answers using Python.

Helpful Python function examples: `int("1010", 2)` , `bin(12345)` , `int("3E8", 16)` , `hex(12345)` , `ord('q')` , `chr(32)`

Refer to the slides for more information.

1. Convert these binary numbers to decimal (base 2 to base 10):  
a)  $10101010_2$  b)  $11110000_2$  c)  $0_2$
2. Convert these decimal numbers to binary (base 10 to base 2):  
a)  $3000_{10}$  b)  $2048_{10}$
3. Check your answers above using Python.
4. Convert these binary numbers to hexadecimal (base 2 to base 16):  
a)  $1111\ 1110\ 1110\ 1101\ 1011\ 1110\ 1110\ 1111_2$  b)  $1100\ 0000\ 1111\ 1111\ 1110\ 1110_2$
5. Convert this hexadecimal numbers to binary (base 16 to base 2):  
 $DECAF123_{16}$
6. Check your answers above using Python.
7. Find the character with ASCII code 73.
8. Convert the letter A into its ASCII code.
9. What do the ASCII codes 97, 115, 99, 105, and 105 spell?
10. Check your answers above using Python.