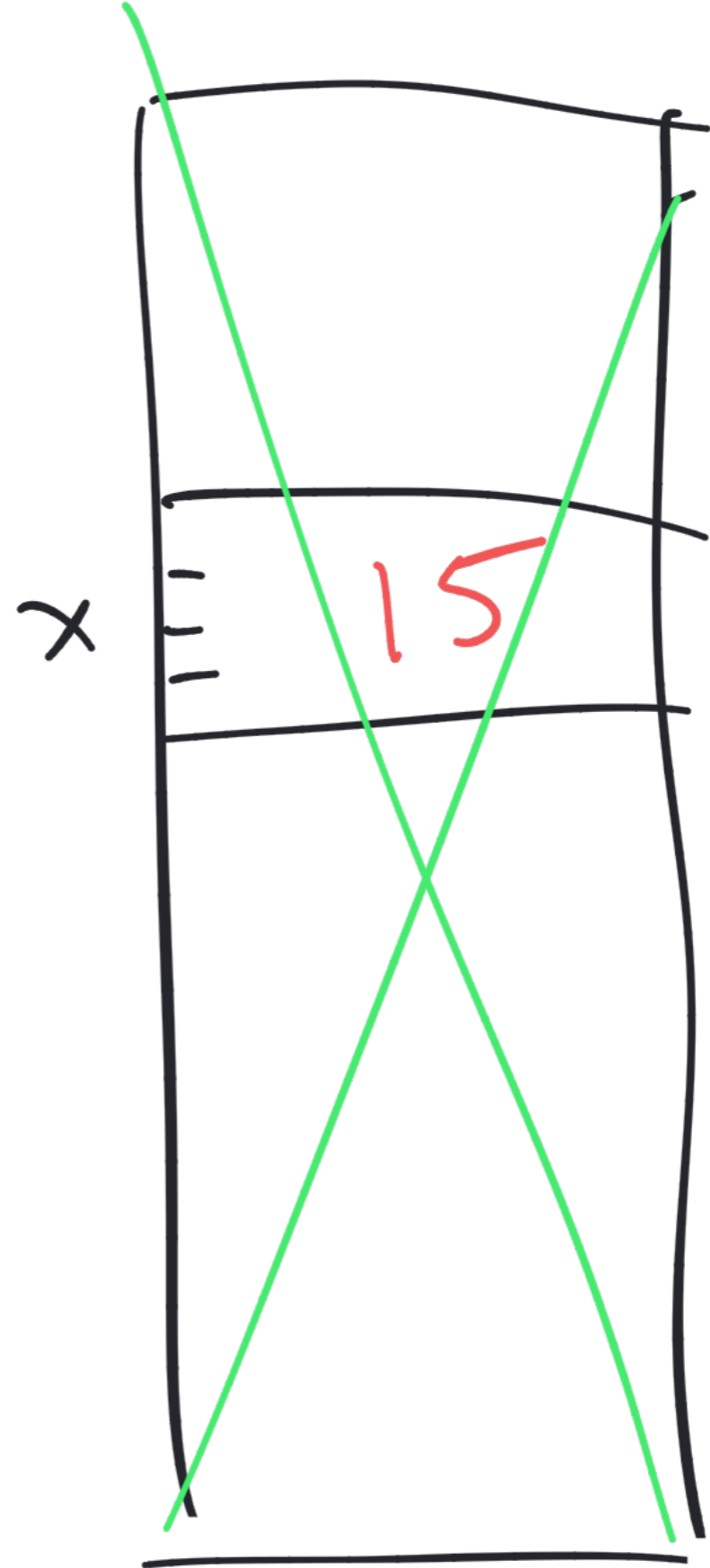
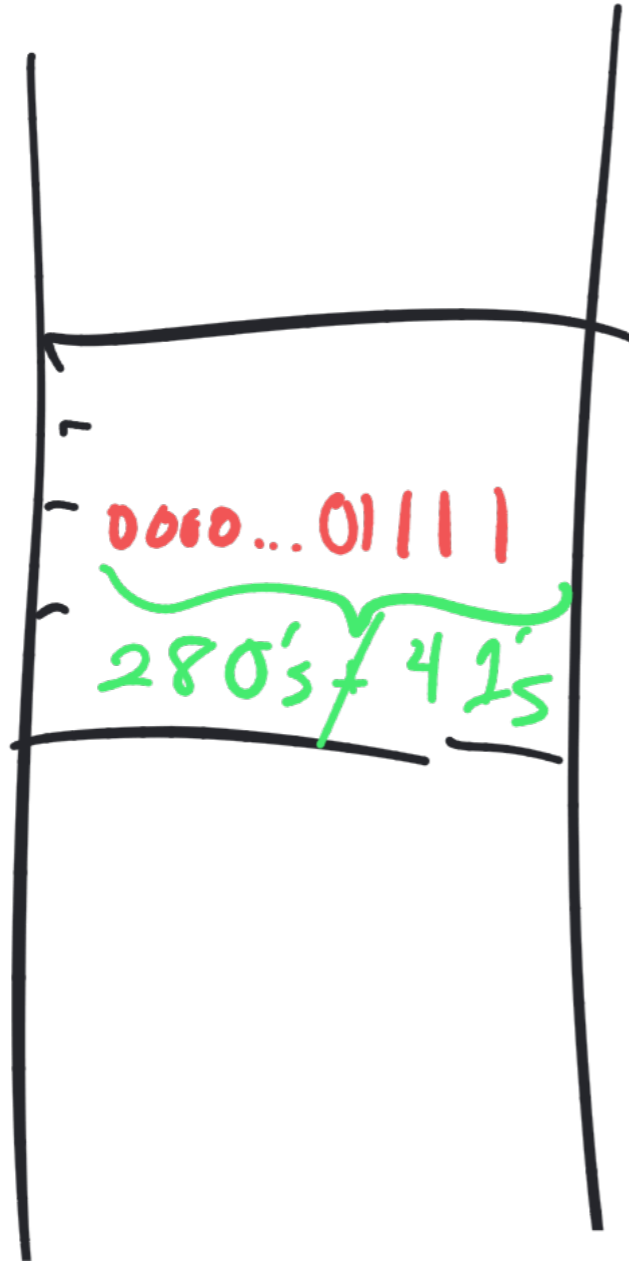


CS 208

Mon, 25 Sep 2023

int x = 15;
4 bytes = 32 bits



int x = 15;



or



Motorola
ARM (?)
Internet protocols
(where relevant)

Intel
AMD

mantis

8	0	1	1	0
	1	1	0	1
	0	1	0	0

Bitwise AND

result = 1 if
 & only if both
 operand bits are 1

| OR (1 if either or both inputs are)

	0	1	1	0
	1	1	0	0
	1	1	1	0

"inclusive OR"



1 if exactly
1 input bit
is 1

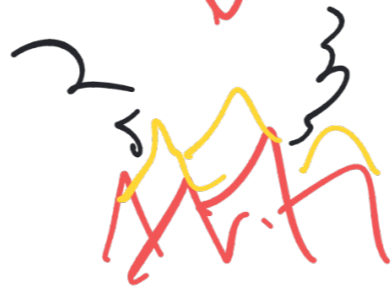
NOT ~

~ 1101

→ 0010

>>, SHIFTRIGHT

10010110 >> 3 = 0010010



<< SHIFT LEFT

10010110 << 3 1001011000

j 0xB9
k 0xC3

10111001
11000011

&
10111001
11000011

10000001

t
10111001
11000011

11111011

^
10111001
11000011

01111010

~
10111001

01000110

0x 4 6

ASCII

	<u>#s</u>	<u>chars</u>
0x41	65	'A'
0x61	97	'a'
0x21	33	'!'

"33 is the ASCII
value of '!"

ASCII is 7-bit codes

How many chars? $2^7 = 128$

Unicode (unicode.org)

Goal: assign integers to characters
for the world's writing systems

int
"codepoint"

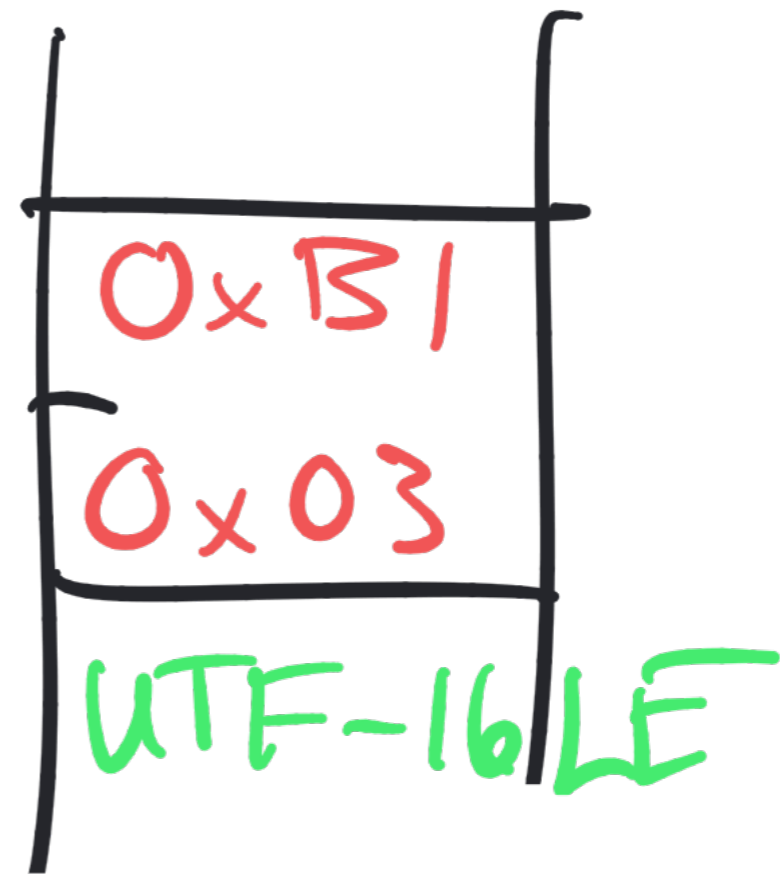
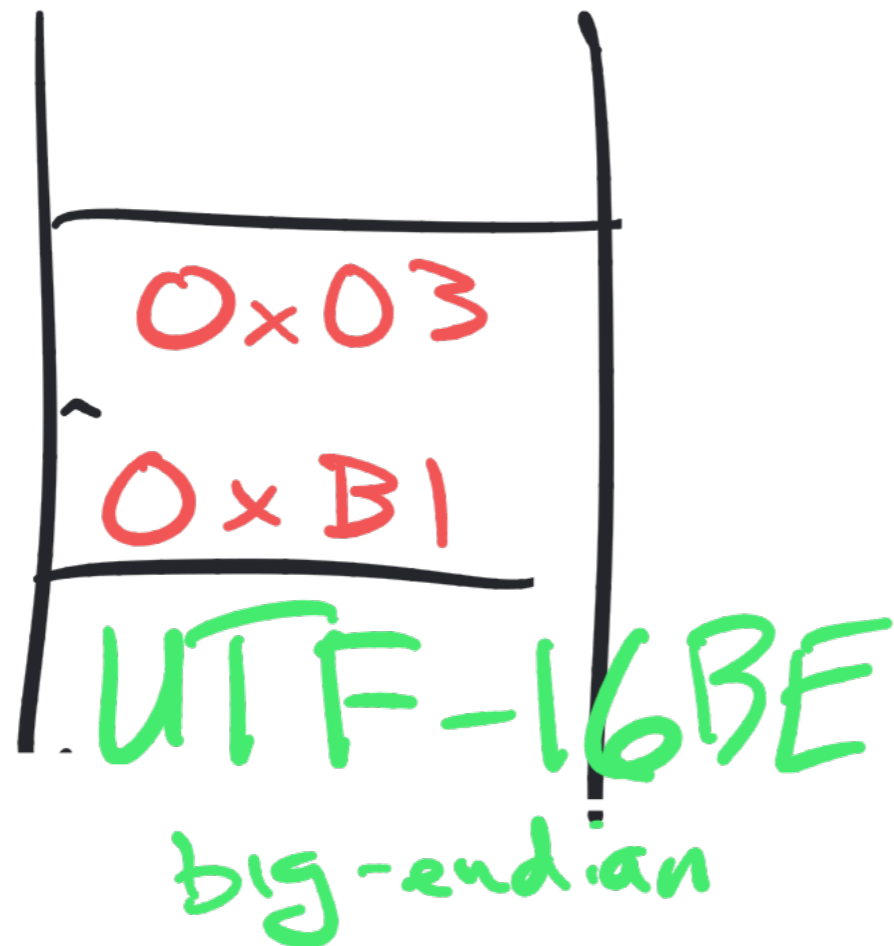
character
"character"

U+03B1

(standard notation
for Unicode codepoints)

Greek α

Store in two bytes



Codepoint: an integer
representing a character

Encoding
going to
integer?

how are you
store that
(in memory)
(in files)

