

Topics for today:

Still more on number  
representations  
Characters

### Positive & negative integers

4. Recall: Signed magnitude representation
  - Simple and obvious
  - Drawbacks

### Positive & negative integers

5. Recall: One's complement representation
  - Drawbacks
5. Two's complement representation

### Character representations

The traditional most common representation for characters in single byte is ASCII (pronounced “askey”)

- *American Standard Code for Information Interchange*

[illegible]

8	BAH	16 DUB	30	48.0	64.8	80.0	96	112	9
9	MDL	17 OCT	30	49.1	65.8	81.0	97	113	9
2	STK	18 DEC	34	50.2	66.8	82.0	98	114	9
3	ETH	19 DEC	36	51.3	67.6	83.0	99	115	9
4	ECF	20 DEC	36	52.4	68.6	84.0	100	116	9
5	ADP	21 DEC	36	53.5	69.6	85.0	101	117	9
6	ACH	22 DEC	36	54.6	70.6	86.0	102	118	9
7	BEL	23 ETH	36	55.7	71.6	87.0	103	119	9
8	BBS	24 GAN	40	56.8	72.8	88.0	104	120	9
9	HT	25 EM	41	57.9	73.9	89.0	105	121	9
10	LP	26 SUB	42	58	74	90	106	122	9
11	VT	27 FR	43	59.1	75.0	91	107	123	9
12	FF	28 FR	43	60.2	76.0	92	108	124	9
13	CR	29 GUS	45	61.3	77.0	93	109	125	9
14	SO	30 FRI	46	62.4	78.0	94	110	126	9
15	SI	31 AU	47	63.5	79.0	95	111	127	DEL

Abbreviations			
HUI	Null	DLE	Data-link escape
SOH	Start of heading	DC1	Device control 1
STX	Start of text	DC2	Device control 2
ETX	End of text	DC3	Device control 3
EOT	End of transmission	DC4	Device control 4
ENQ	Enquiry	NAK	Negative acknowledge
ACK	Acknowledge	SYN	Synchronous idle
BEL	Bell (beep)	ETB	End of transmission block
BS	Backspace	CAN	Cancel
HT	Horizontal tab	EM	End of medium
LF	Line feed, new line	SUB	Substitute
VT	Vertical tab	ESC	Escape
FF	Form feed, new page	FS	File separator
CR	Carriage return	GS	Group separator
SO	Shift out	RS	Record separator
SI	Shift in	US	Unit separator
		DEL	Delete/del

There are many variations/extensions outside the range of 32 – 127.  
(Why wasn't the range from 128 – 255 standardized?)