PRACTICAL REPORT

PRACTICAL 1

OPERATING SYSTEMS

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Question 1

What is meant by the "ASCII" code?, Make a complete ASCII code table enough that the standard ASCII code does not need to be extended, write the ASCII code in decimal, binary, and hexadecimal number formats and encoded characters and symbol!

Answer:

ASCII is the acronym for the **A***merican* **S***tandard* **C***ode for* **I***nformation* **I***nterchange*. It is a code for representing 128 English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase *M* is 77. Most computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another.

ASCII TABLE

Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char
0	0	[NULL]	32	20	[SPACE]	64	40	@	96	60	`
1	1	[START OF HEADING]	33	21	!	65	41	A	97	61	a
2	2	[START OF TEXT]	34	22	"	66	42	B	98	62	b
3	3	[END OF TEXT]	35	23	#	67	43	C	99	63	c
4	4	[END OF TRANSMISSION]	36	24	$	68	44	D	100	64	d
5	5	[ENQUIRY]	37	25	%	69	45	E	101	65	e
6	6	[ACKNOWLEDGE]	38	26	&	70	46	F	102	66	f
7	7	[BELL]	39	27	'	71	47	G	103	67	g
8	8	[BACKSPACE]	40	28	(	72	48	H	104	68	h
9	9	[HORIZONTAL TAB]	41	29	)	73	49	I	105	69	i
10	A	[LINE FEED]	42	2A	*	74	4A	J	106	6A	j
11	B	[VERTICAL TAB]	43	2B	+	75	4B	K	107	6B	k
12	C	[FORM FEED]	44	2C	,	76	4C	L	108	6C	l
13	D	[CARRIAGE RETURN]	45	2D	-	77	4D	M	109	6D	m
14	E	[SHIFT OUT]	46	2E	.	78	4E	N	110	6E	n
15	F	[SHIFT IN]	47	2F	/	79	4F	O	111	6F	o
16	10	[DATA LINK ESCAPE]	48	30	0	80	50	P	112	70	p
17	11	[DEVICE CONTROL 1]	49	31	1	81	51	Q	113	71	q
18	12	[DEVICE CONTROL 2]	50	32	2	82	52	R	114	72	r
19	13	[DEVICE CONTROL 3]	51	33	3	83	53	S	115	73	s
20	14	[DEVICE CONTROL 4]	52	34	4	84	54	T	116	74	t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85	55	U	117	75	u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86	56	V	118	76	v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87	57	W	119	77	w
24	18	[CANCEL]	56	38	8	88	58	X	120	78	x
25	19	[END OF MEDIUM]	57	39	9	89	59	Y	121	79	y
26	1A	[SUBSTITUTE]	58	3A	:	90	5A	Z	122	7A	z
27	1B	[ESCAPE]	59	3B	;	91	5B	[	123	7B	{
28	1C	[FILE SEPARATOR]	60	3C	<	92	5C	\	124	7C	|
29	1D	[GROUP SEPARATOR]	61	3D	=	93	5D	]	125	7D	}
30	1E	[RECORD SEPARATOR]	62	3E	>	94	5E	^	126	7E	~
31	1F	[UNIT SEPARATOR]	63	3F	?	95	5F	_	127	7F	[DEL]

Question 2

Look for a complete list of assembly language commands for the x86 family Intel machine! (from reference books or the internet). This list of commands can be used as a guide to understanding the "boot.asm" and "kernel.asm" programs.

Answer:

Instructions & Abbreviation Description

1. ACALL - Absolute Call
2. ADD - Add
3. ADDC - Add with Carry
4. AJMP - Absolute Jump
5. ANL - AND Logic
6. CJNE - Compare and Jump if Not Equal
7. CLR - Clear
8. CPL - Complement
9. DA - Decimal Adjust
10. DEC - Decrement
11. DIV - Divide
12. DJNZ - Decrement and Jump if Not Zero
13. INC - Increment
14. JB - Jump if Bit Set
15. JBC - Jump if Bit Set and Clear Bit
16. JC - Jump if Carry Set
17. JMP - Jump to Address
18. JNB - Jump if Not Bit Set
19. JNC - Jump if Carry Not Set
20. JNZ - Jump if Accumulator Not Zero
21. JZ - Jump if Accumulator Zero
22. LCALL - Long Call
23. LJMP - Long Jump
24. MOV - Move from Memory
25. MOVC - Move from Code Memory
26. MOVX - Move from Extended Memory

27. MUL - Multiply
28. NOP - No Operation
29. ORL - OR Logic
30. POP - Pop Value From Stack
31. PUSH - Push Value Onto Stack
32. RET - Return From Subroutine
33. RETI - Return From Interrupt
34. RL - Rotate Left
35. RLC - Rotate Left through Carry
36. RR - Rotate Right
37. RRC - Rotate Right through Carry
38. SETB - Set Bit
39. SJMP - Short Jump
40. SUBB - Subtract With Borrow
41. SWAP - Swap Nibbles
42. XCH - Exchange Bytes
43. XCHD - Exchange Digits
44. XRL - Exclusive OR Logic