

Problem A. Hex Code

Time Limit: 1 sec



In the movie *The Martian* (2015), astronaut Mark Watney, one of the crew members of Mission Ares III, was left behind on Mars due to an unexpected incident during the surface exploration on the planet Mars. The communication with Earth was quasi-inexistent. Fortunately, Mark Watney managed to establish a very simple way to communicate with NASA at the mission control base on Earth through hexadecimal codes.

Mark could receive one simple code at a time which he could detect as a hexadecimal digit or hex code including 0–9 and A–F. Then he could transform *a pair of hex digits* into *a character* since he knows how to look up the ASCII table. Fortunately enough he has an ASCII table at hand (who would miss an ASCII table on voyage to Mars!! ^_^).

Dec	Hex	Name	Char	Ctrl-char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	0	Null	NUL	CTRL-@	32	20	Space	64	40	@	96	60	`
1	1	Start of heading	SOH	CTRL-A	33	21	!	65	41	A	97	61	a
2	2	Start of text	STX	CTRL-B	34	22	"	66	42	B	98	62	b
3	3	End of text	ETX	CTRL-C	35	23	#	67	43	C	99	63	c
4	4	End of xmit	EOT	CTRL-D	36	24	\$	68	44	D	100	64	d
5	5	Enquiry	ENQ	CTRL-E	37	25	%	69	45	E	101	65	e
6	6	Acknowledge	ACK	CTRL-F	38	26	&	70	46	F	102	66	f
7	7	Bell	BEL	CTRL-G	39	27	'	71	47	G	103	67	g
8	8	Backspace	BS	CTRL-H	40	28	(	72	48	H	104	68	h
9	9	Horizontal tab	HT	CTRL-I	41	29	)	73	49	I	105	69	i
10	0A	Line feed	LF	CTRL-J	42	2A	*	74	4A	J	106	6A	j
11	0B	Vertical tab	VT	CTRL-K	43	2B	+	75	4B	K	107	6B	k
12	0C	Form feed	FF	CTRL-L	44	2C	,	76	4C	L	108	6C	l
13	0D	Carriage feed	CR	CTRL-M	45	2D	-	77	4D	M	109	6D	m
14	0E	Shift out	SO	CTRL-N	46	2E	.	78	4E	N	110	6E	n
15	0F	Shift in	SI	CTRL-O	47	2F	/	79	4F	O	111	6F	o
16	10	Data line escape	DLE	CTRL-P	48	30	0	80	50	P	112	70	p
17	11	Device control 1	DC1	CTRL-Q	49	31	1	81	51	Q	113	71	q
18	12	Device control 2	DC2	CTRL-R	50	32	2	82	52	R	114	72	r
19	13	Device control 3	DC3	CTRL-S	51	33	3	83	53	S	115	73	s
20	14	Device control 4	DC4	CTRL-T	52	34	4	84	54	T	116	74	t
21	15	Neg acknowledge	NAK	CTRL-U	53	35	5	85	55	U	117	75	u
22	16	Synchronous idle	SYN	CTRL-V	54	36	6	86	56	V	118	76	v
23	17	End of xmit block	ETB	CTRL-W	55	37	7	87	57	W	119	77	w
24	18	Cancel	CAN	CTRL-X	56	38	8	88	58	X	120	78	x
25	19	End of medium	EM	CTRL-Y	57	39	9	89	59	Y	121	79	y
26	1A	Substitute	SUB	CTRL-Z	58	3A	:	90	5A	Z	122	7A	z
27	1B	Escape	ESC	CTRL-[	59	3B	;	91	5B	[	123	7B	{
28	1C	File separator	FS	CTRL-\	60	3C	<	92	5C	\	124	7C	|
29	1D	Group separator	GS	CTRL-]	61	3D	=	93	5D	]	125	7D	}
30	1E	Record separator	RS	CTRL-^	62	3E	>	94	5E	^	126	7E	~
31	1F	Unit separator	US	CTRL-`	63	3F	?	95	5F	_	127	7F	DEL

If Mark receives a code sequence “4869204D61726B”, he can decode it into the message “Hi Mark”. However, decoding the hex codes manually is very slow and inefficient. Therefore your task is to help Mark Watney write a program to decode these hex codes.

Input

The input contains several lines of hex codes only (0–9, A–F). Each line contains an *even number* of hex digits that you have to transform into a plain text message. One pair of hex digits corresponds to a single character. There are less than 250 hex digits in each line. The input contains several lines of strings. You do not know in advance how many lines there are but it is guaranteed that the input contains less than 1,000 lines.

Output

For each line of hex codes, print out the corresponding text message.

Sample Input	Sample Output
4869204D61726B 41726520796F7520616C6976653F	Hi Mark Are you alive?