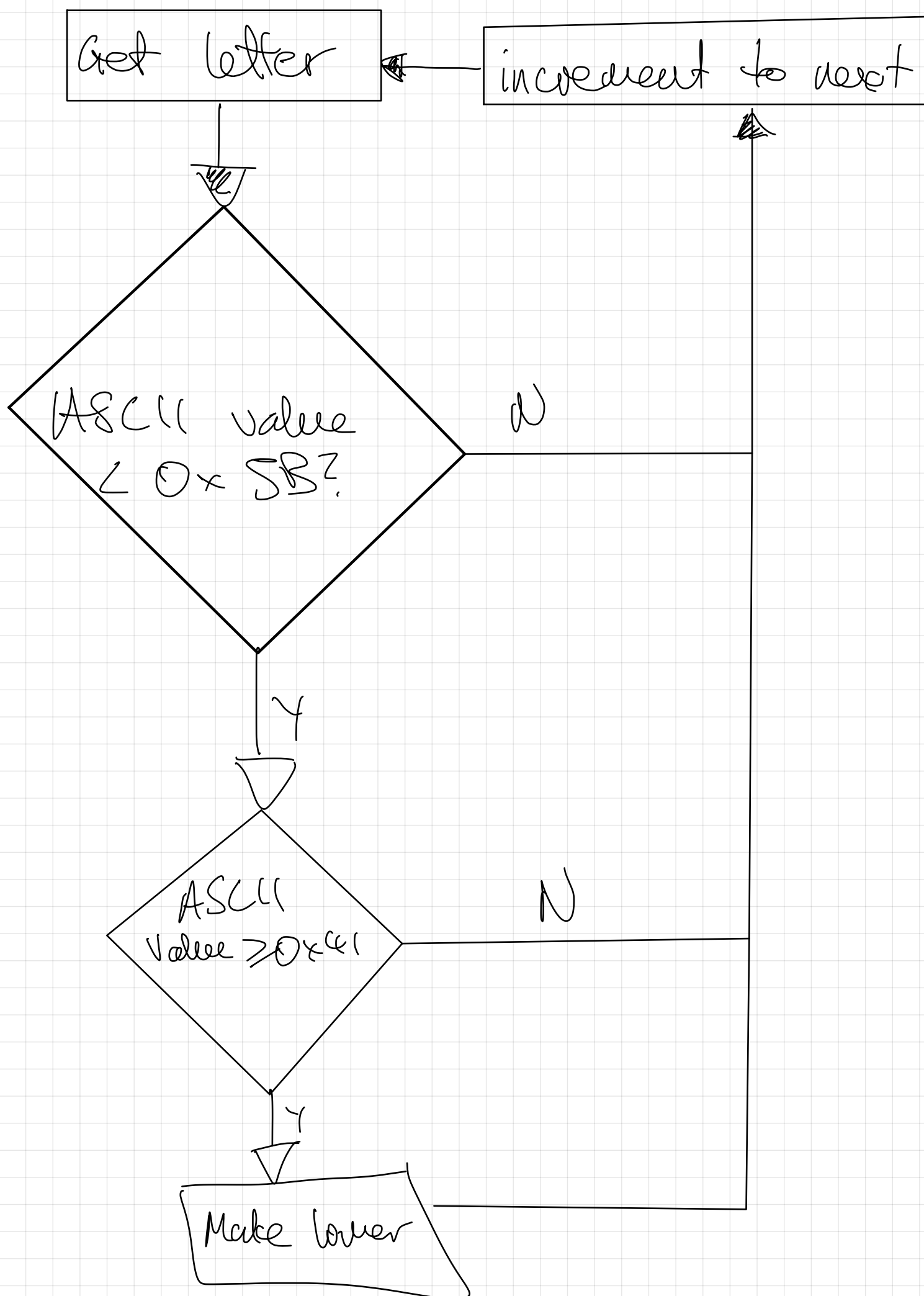


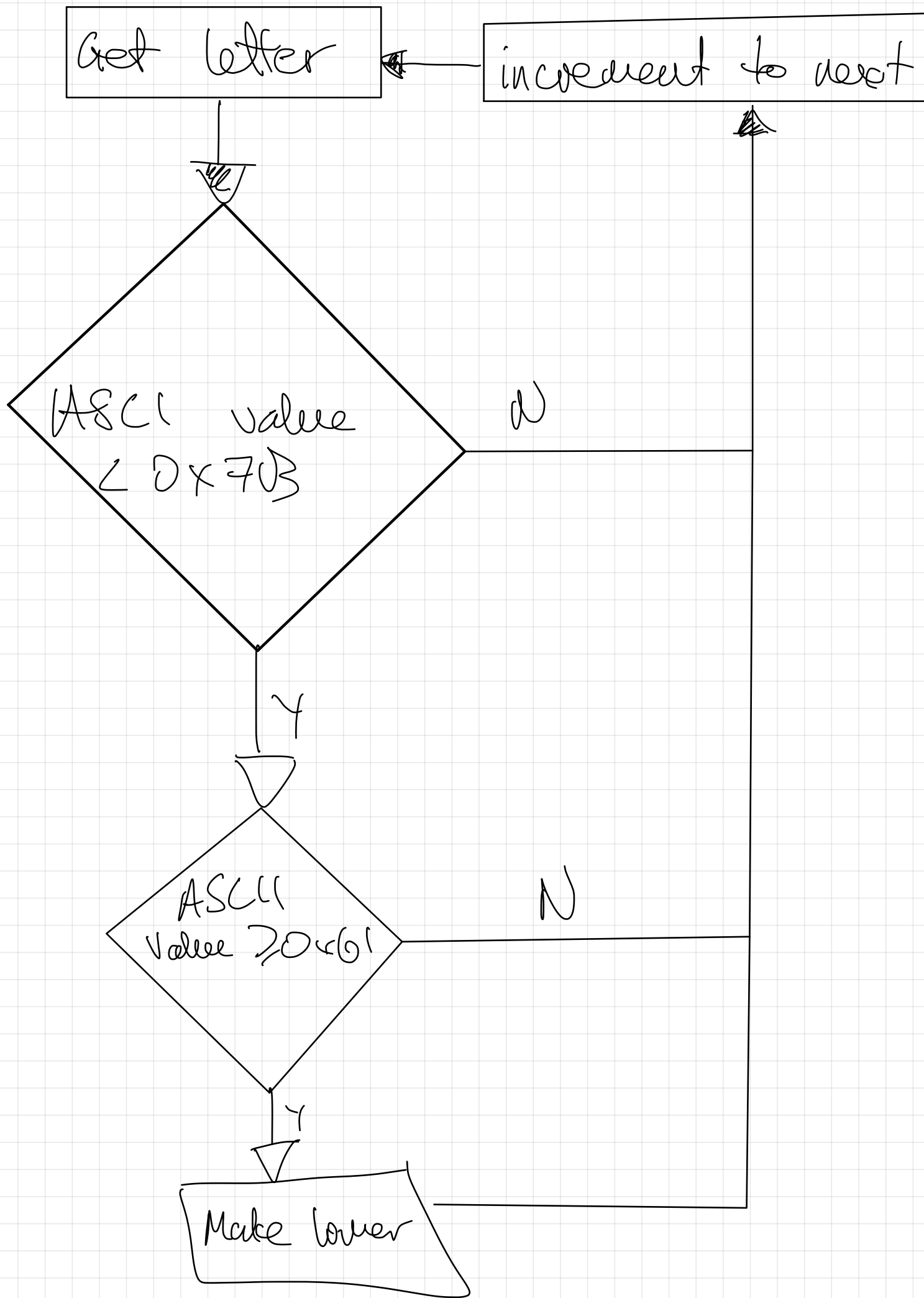
Logical flow diagrams:

Task 1:

a) All lowercase:

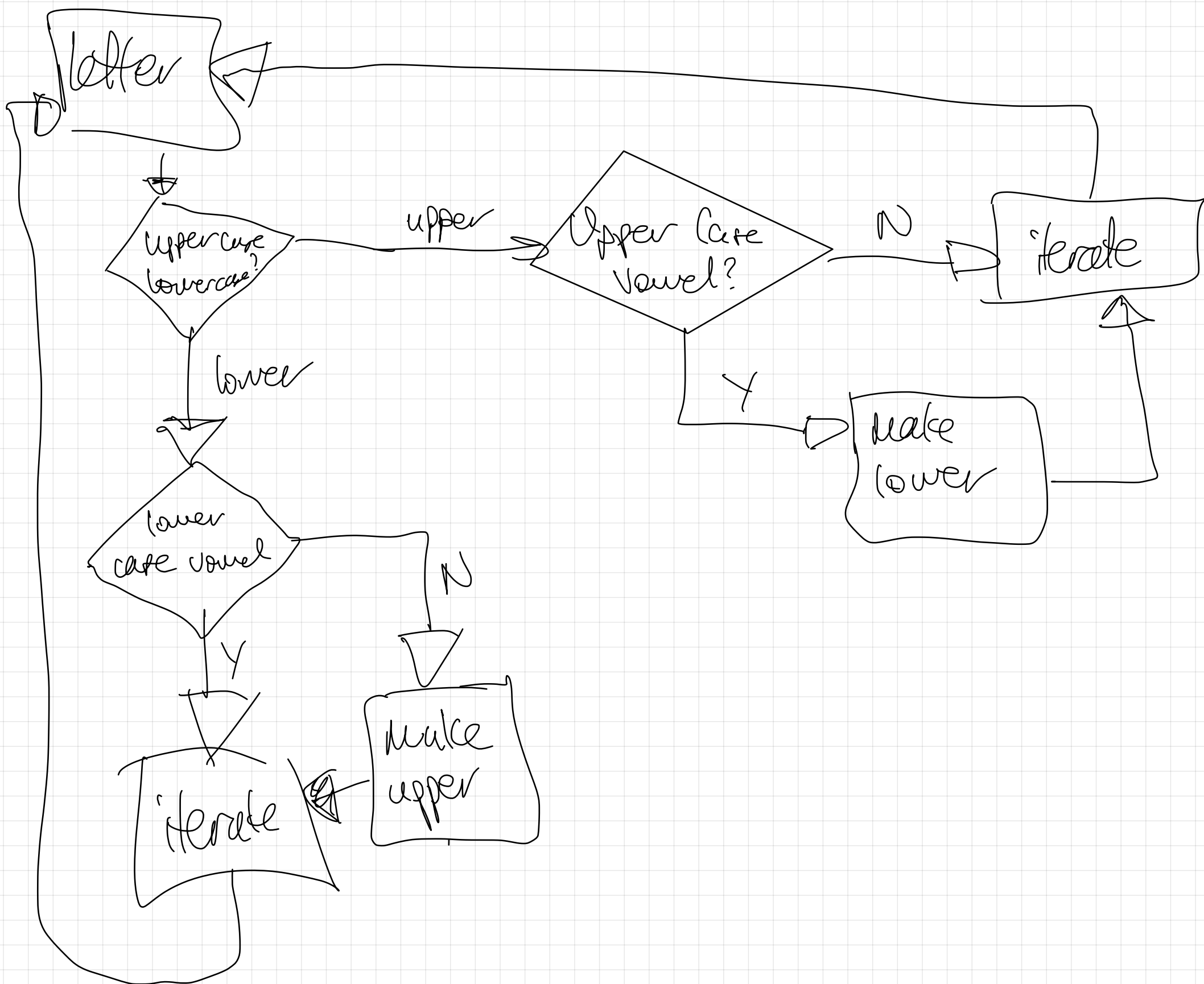


All upper case :

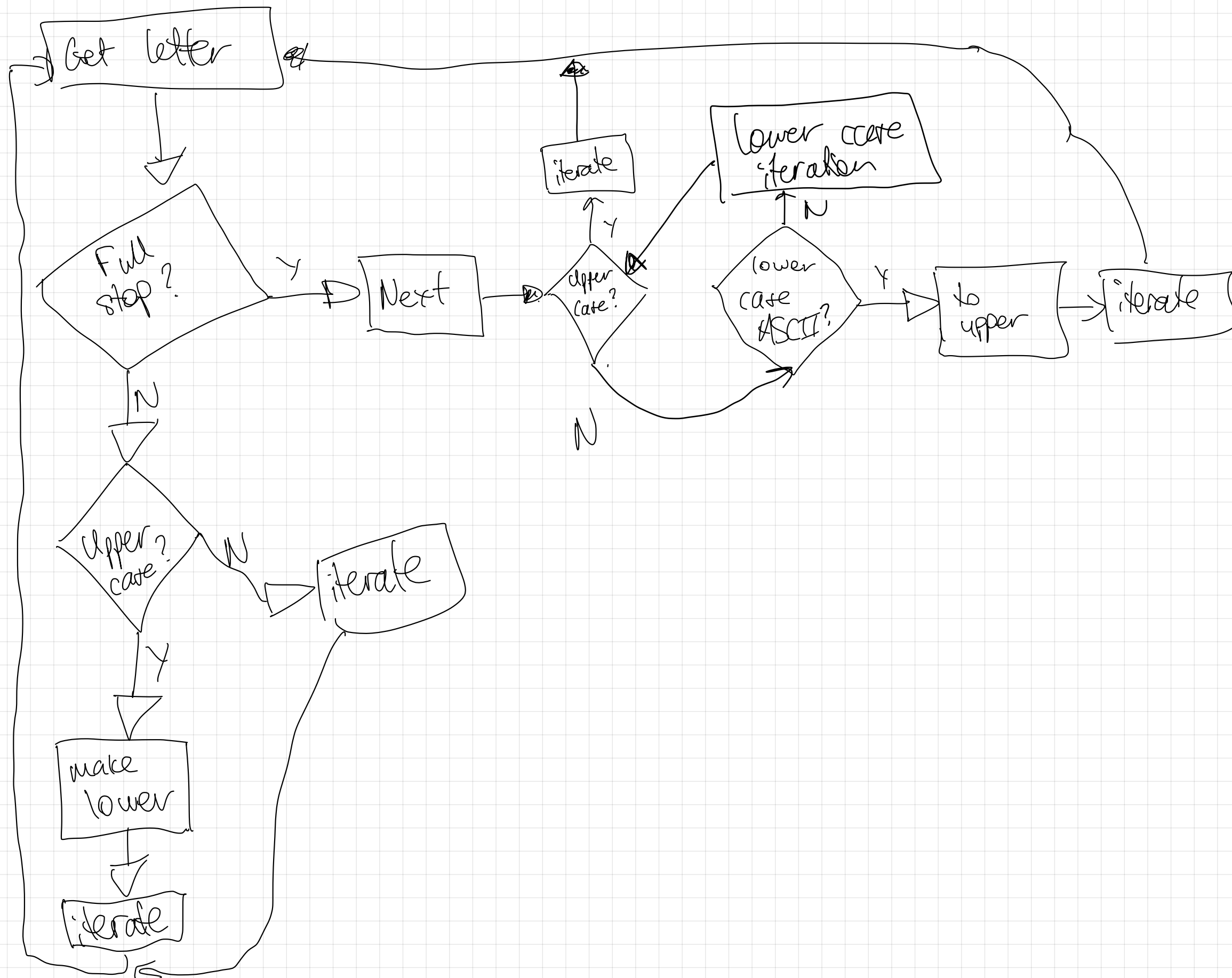


Dec	Hex	Oct	Char	Dec	Hex	Oct	Char
64	40	100	@	96	60	140	`
65	41	101	A	97	61	141	a
66	42	102	B	98	62	142	b
67	43	103	C	99	63	143	c
68	44	104	D	100	64	144	d
69	45	105	E	101	65	145	e
70	46	106	F	102	66	146	f
71	47	107	G	103	67	147	g
72	48	110	H	104	68	150	h
73	49	111	I	105	69	151	i
74	4A	112	J	106	6A	152	j
75	4B	113	K	107	6B	153	k
76	4C	114	L	108	6C	154	l
77	4D	115	M	109	6D	155	m
78	4E	116	N	110	6E	156	n
79	4F	117	O	111	6F	157	o
80	50	120	P	112	70	160	p
81	51	121	Q	113	71	161	q
82	52	122	R	114	72	162	r
83	53	123	S	115	73	163	s
84	54	124	T	116	74	164	t
85	55	125	U	117	75	165	u
86	56	126	V	118	76	166	v
87	57	127	W	119	77	167	w
88	58	130	X	120	78	170	x
89	59	131	Y	121	79	171	y
90	5A	132	Z	122	7A	172	z

b)

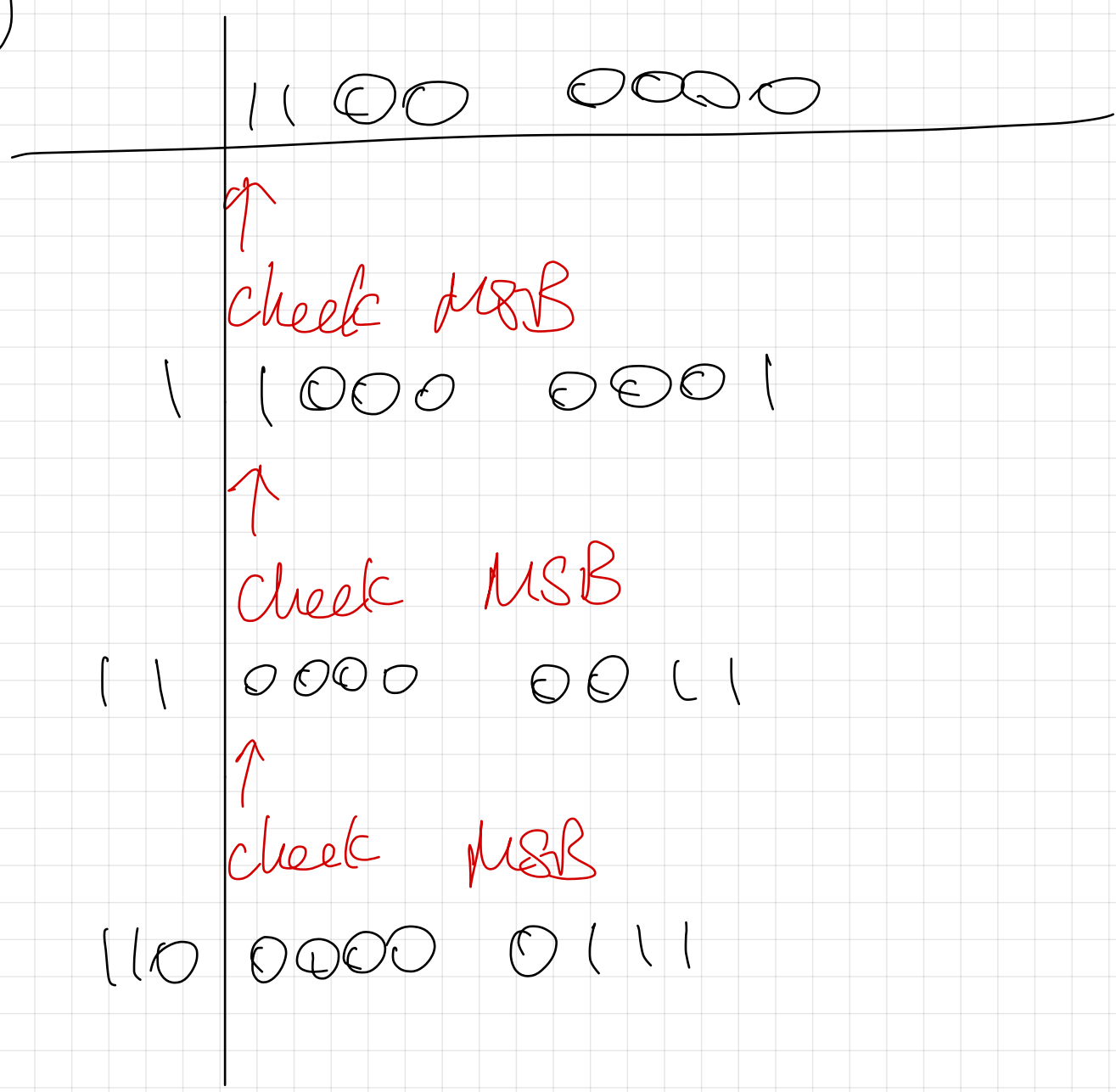


C)

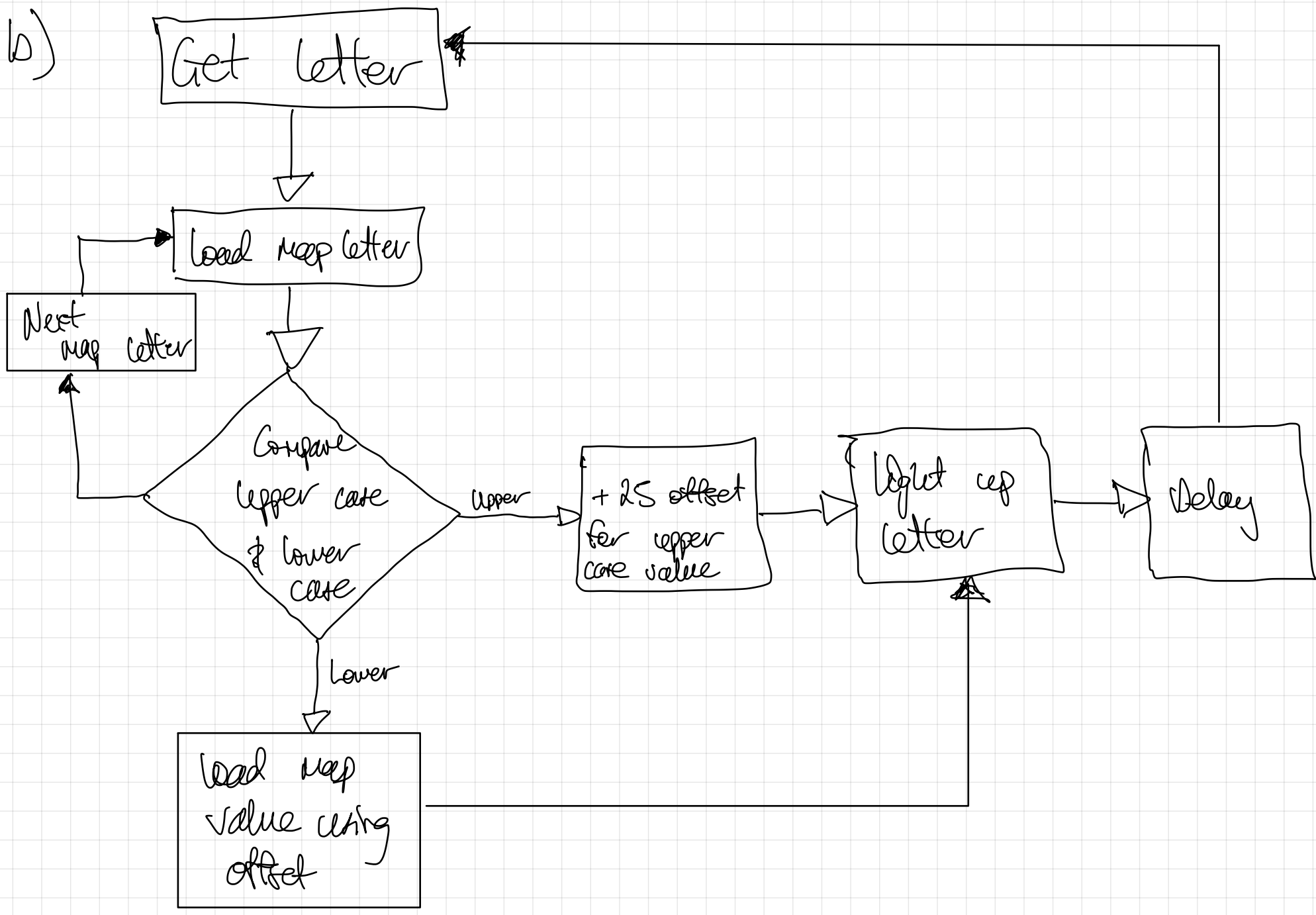


Task 2:

a)



b)



2.4.2 b)

* Anything that isn't an alphabetical character
it is not important and all LEDs
light up.

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	...
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	...

NB: LEDs from MSB \rightarrow LSB
are 6, 8, 10, 9, 7, 5, 3, 4

Test string of "Hello world! \0"

H: is 8 + 25 long as its upper case

\Rightarrow 33 in binary is 00100001

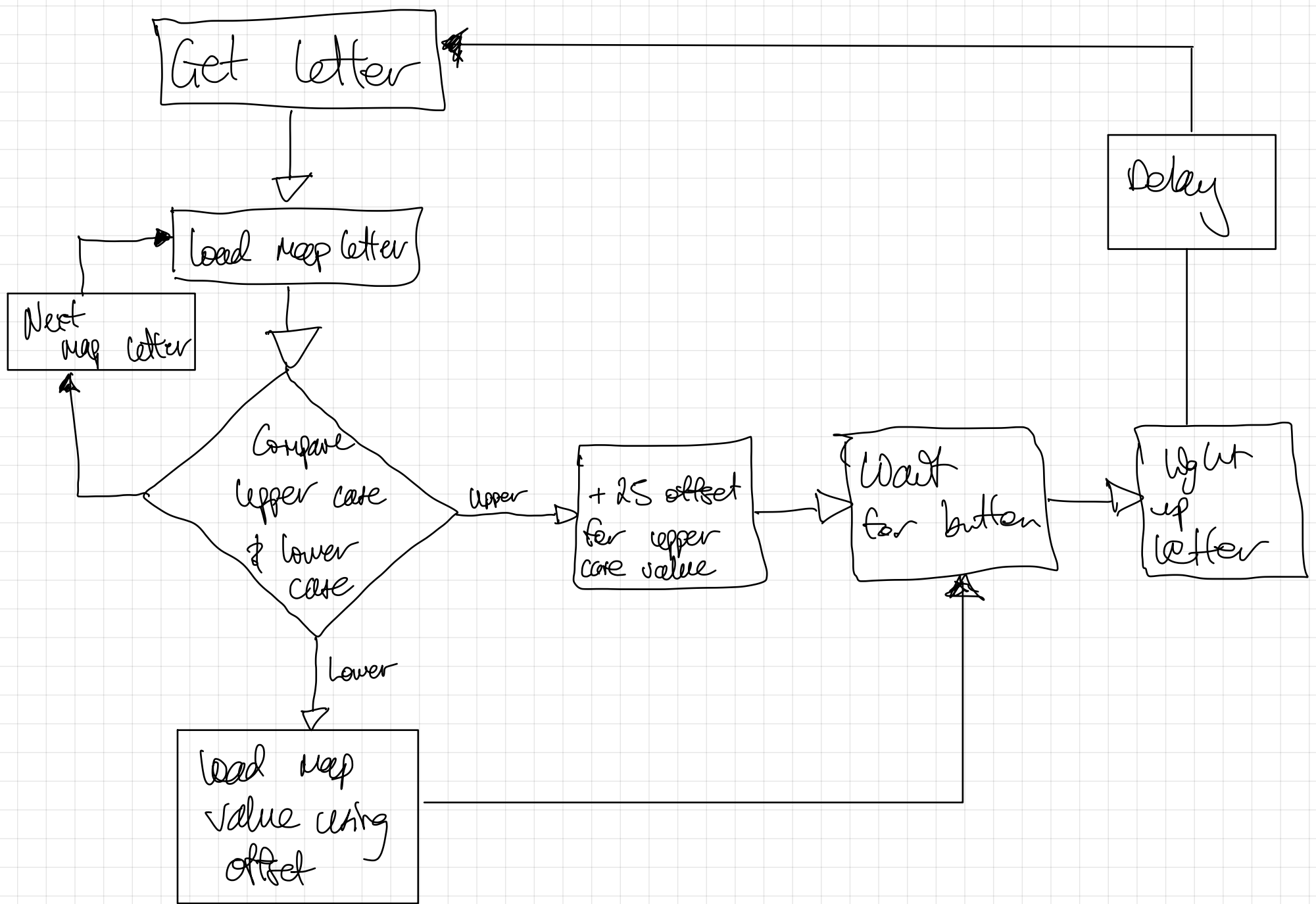
\Rightarrow LED 10 & 4 are lit.

e: is 5, 00000101

\Rightarrow LED 5 & 4 are lit.

etc.

c)



Task 4:

