

ECE 448
Spring 2023

Homework 2
due Sunday, May 14, 2023, 11:59 PM

Specify your Day of Birth Number, *dd*, and your Month of Birth Number, *mm*.

The day of the month on which you were born is your Day of Birth Number.
The month of the year when you were born is your Month of Birth Number.

Important Note: These numbers will be used only for the purpose of differentiating problems attempted by various students. However, if you do not feel comfortable revealing these numbers due to privacy concerns, you have the right to specify randomly chosen numbers that belong to a valid range.

dd = [must be a number between 1 and 31]

mm = [must be a number between 1 and 12]

In the following problems, please replace *dd* and *mm* by numerical values defined and specified above.

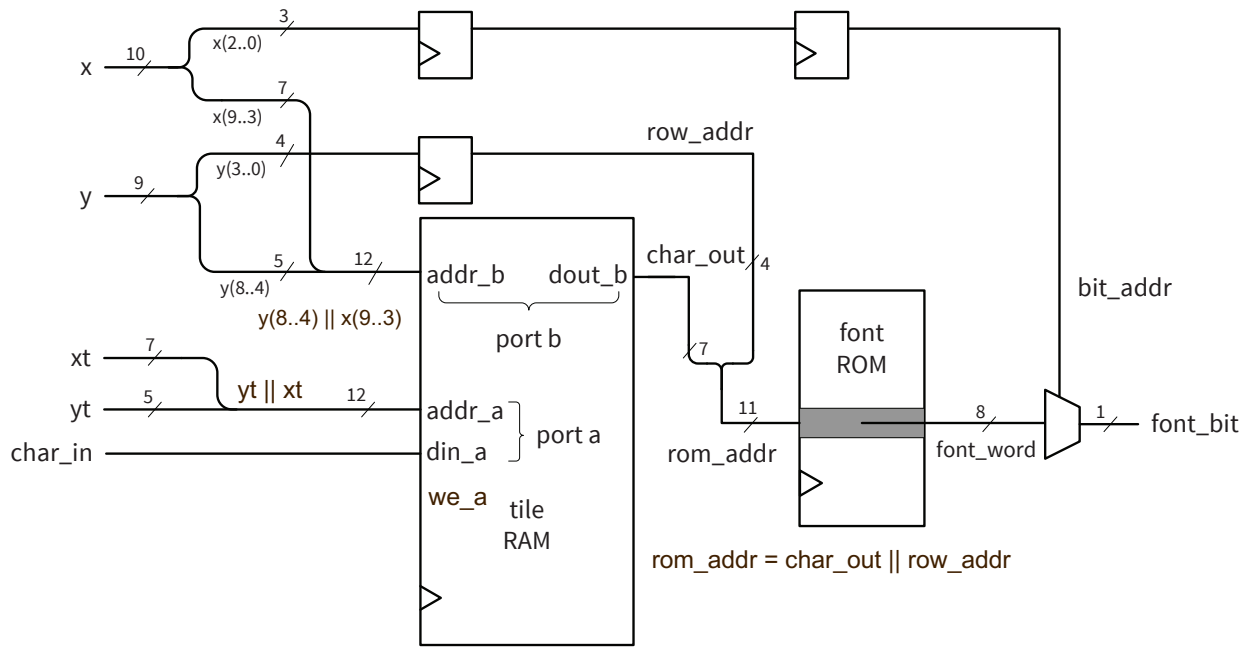
Based on the

- block diagram of the Text Generation Circuit with Tile Memory, and
- ASCII table with the Code columns in hexadecimal notation,

given on the next page, please provide the following information:

- A. Range of locations in the font ROM used to represent a font pattern of the first character of your FIRST name treated as a capital letter. Please provide your answer in the format:
<minimum address in the range>..<maximum address in the range>.
- B. Address of the location holding the ASCII code of the tile with the coordinates
 $xt=2*dd+17$, $yt=2*mm+5$. Please note that an address is a single number.

For both questions, please provide your answers in both hexadecimal and decimal notation.



Control characters replaced by useful shapes

Code	Char	Code	Char	Code	Char	Code	Char
00	(nul)	20	(sp)	40	@	60	'
01	(soh)	21	!	41	A	61	a
02	(stx)	22	"	42	B	62	b
03	(etx)	23	#	43	C	63	c
04	(eot)	24	\$	44	D	64	d
05	(enq)	25	%	45	E	65	e
06	(ack)	26	&	46	F	66	f
07	(bel)	27	'	47	G	67	g
08	(bs)	28	(	48	H	68	h
09	(ht)	29	)	49	I	69	i
0a	(nl)	2a	*	4a	J	6a	j
0b	(vt)	2b	+	4b	K	6b	k
0c	(np)	2c	,	4c	L	6c	l
0d	(cr)	2d	-	4d	M	6d	m
0e	(so)	2e	.	4e	N	6e	n
0f	(si)	2f	/	4f	O	6f	o
10	(dle)	30	0	50	P	70	p
11	(dc1)	31	1	51	Q	71	q
12	(dc2)	32	2	52	R	72	r
13	(dc3)	33	3	53	S	73	s
14	(dc4)	34	4	54	T	74	t
15	(nak)	35	5	55	U	75	u
16	(syn)	36	6	56	V	76	v
17	(etb)	37	7	57	W	77	w
18	(can)	38	8	58	X	78	x
19	(em)	39	9	59	Y	79	y
1a	(sub)	3a	:	5a	Z	7a	z
1b	(esc)	3b	;	5b	[	7b	{
1c	(fs)	3c	i	5c	\	7c	—
1d	(gs)	3d	=	5d	]	7d	}
1e	(rs)	3e	¿	5e	~	7e	~
1f	(us)	3f	?	5f	-	7f	(del)