

Physical Computing

<http://itp.nyu.edu/physcomp/>

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Questions?

interaction design concepts

- visibility - how the user interacts should be apparent
- affordance - perception of how something works
- constraints - inherent limitations to work around
- mapping - the relationship between multiple things
- conceptual models - imagining how it works
- feedback - information about what has happened

project presentations

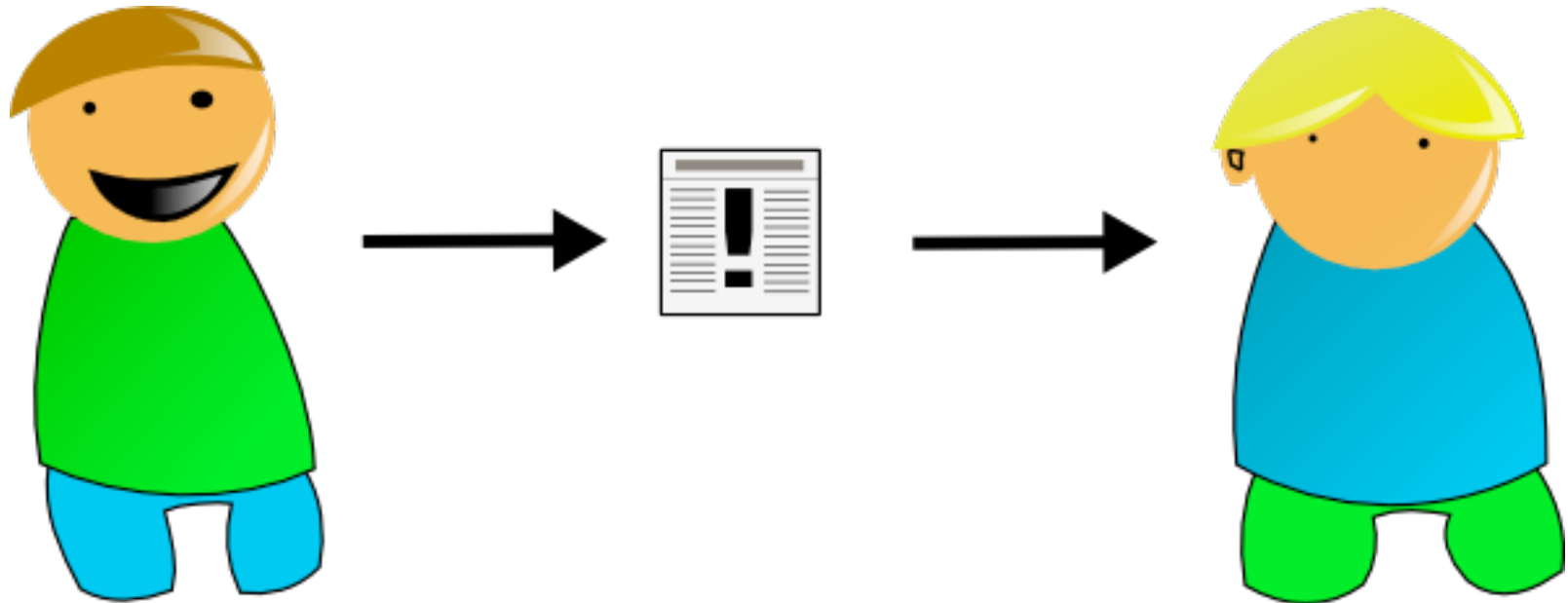
- laptops closed, please!
- 15 minutes for each group
- questions after presentation
- next group setup during Q&A
- group order: 1, 2, 3, 4

midterm project

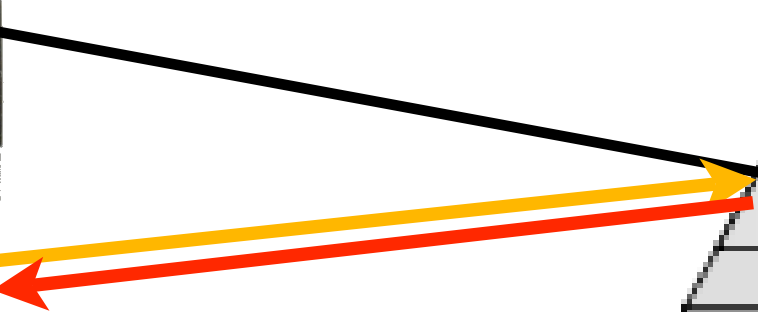
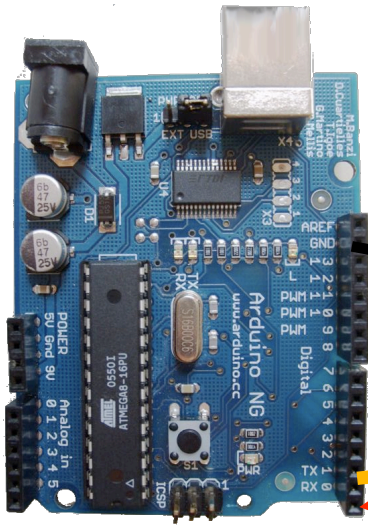
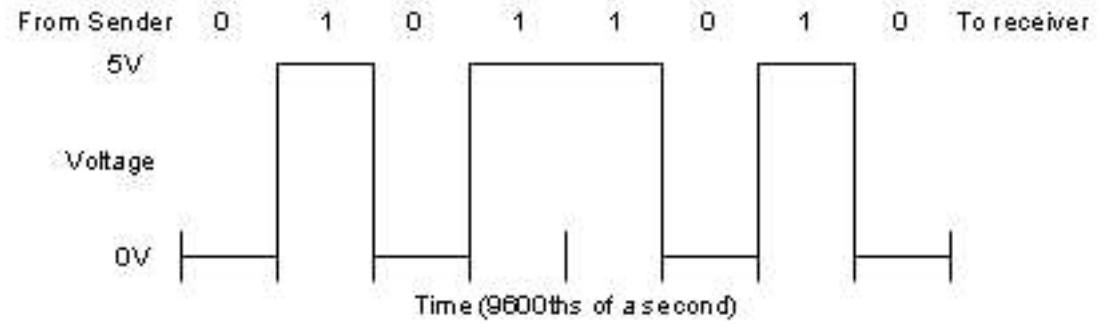
<http://itp.nyu.edu/physcomp/Intro/MidtermAssignment>

- make first prototype and present it next week
- why will someone want to use your device?
- how will they know how to use it?
- what context will people use your device?
- starting thinking of people to test it on for week 3

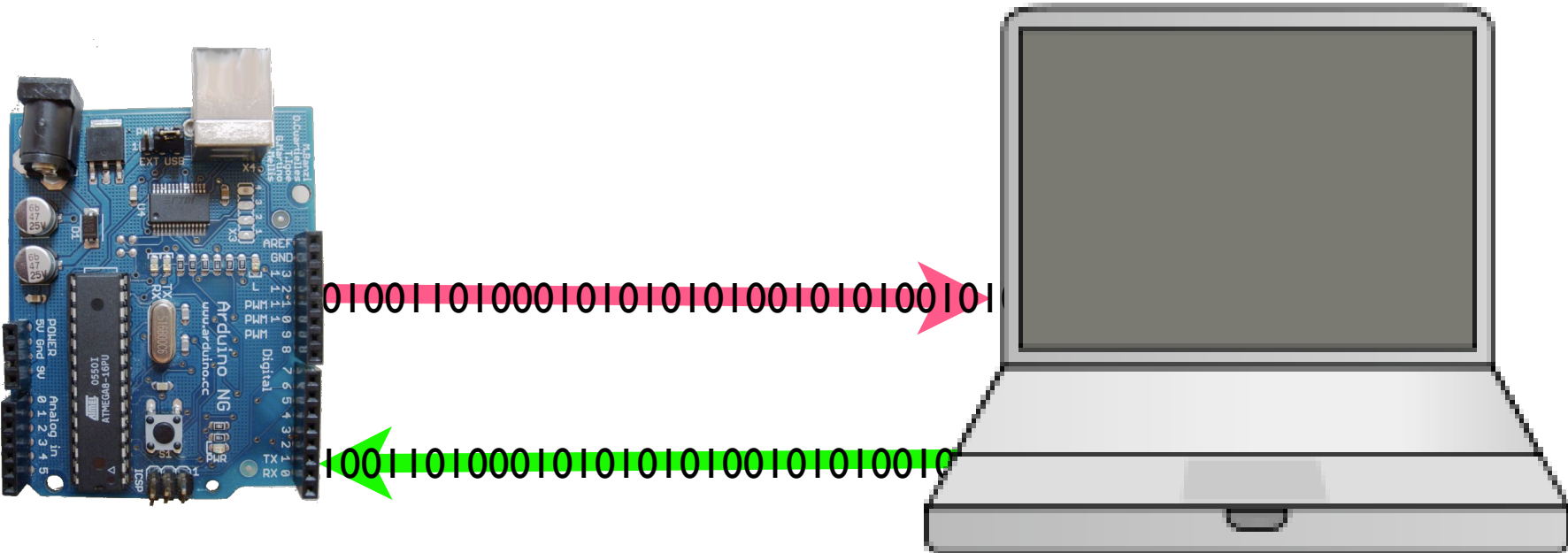
serial communication



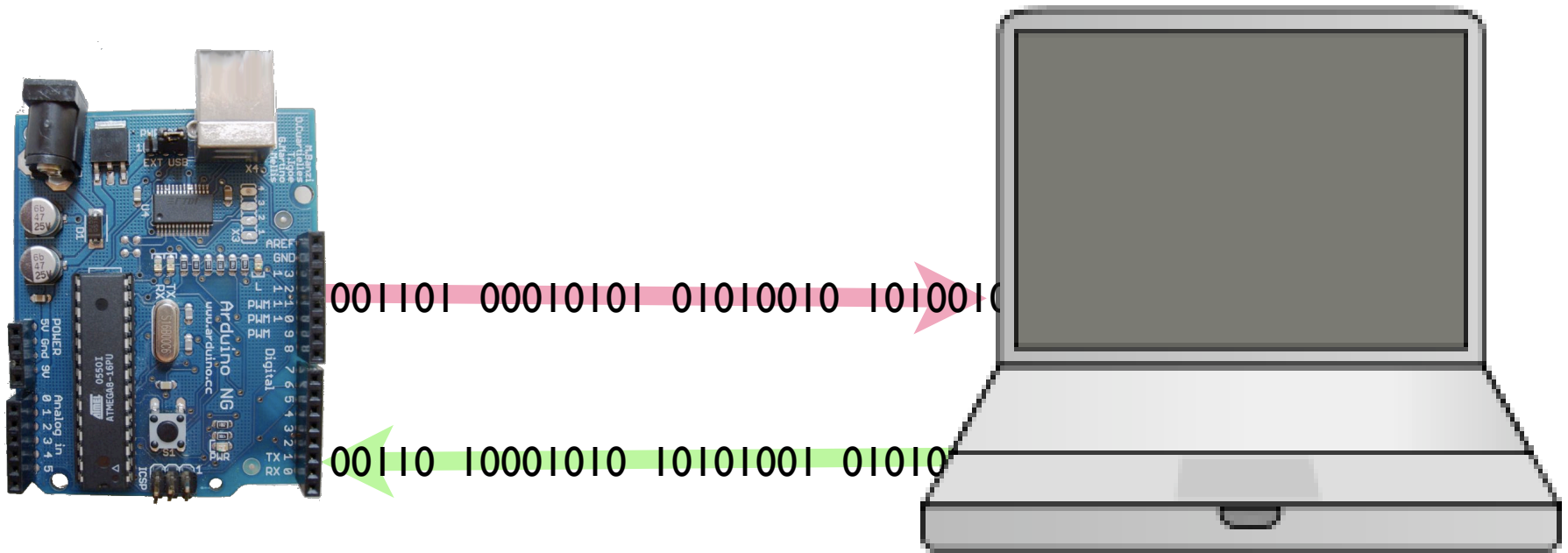
digital signals



bitstream



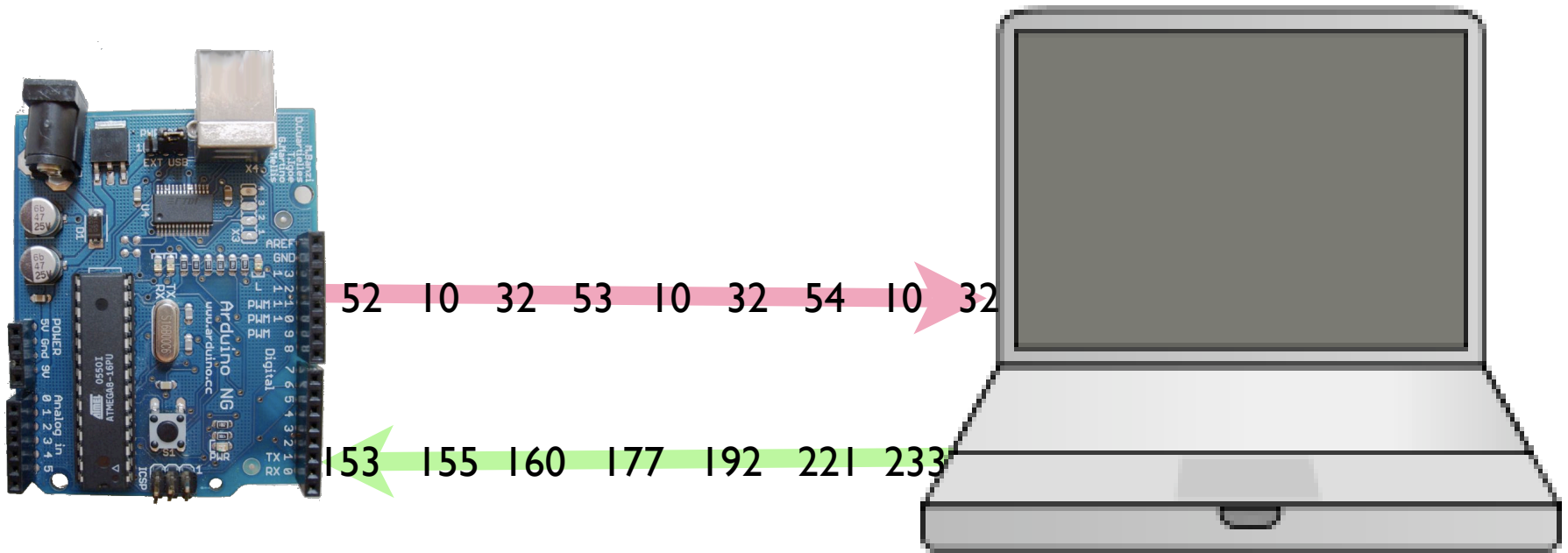
bytestream



binary

ASCII	binary	octal	decimal	hexadecimal
!	100001	41	33	21
"	100010	42	34	22
#	100011	43	35	23
\$	100100	44	36	24
%	100101	45	37	25
&	100110	46	38	26
'	100111	47	39	27
{	101000	50	40	28
}	101001	51	41	29
*	101010	52	42	2A
+	101011	53	43	2B
,	101100	54	44	2C
-	101101	55	45	2D
.	101110	56	46	2E
/	101111	57	47	2F
0	110000	60	48	30
1	110001	61	49	31
2	110010	62	50	32
3	110011	63	51	33
4	110100	64	52	34
5	110101	65	53	35
6	110110	66	54	36
7	110111	67	55	37
8	111000	70	56	38
9	111001	71	57	39
:	111010	72	58	3A
:	111011	73	59	3B
<	111100	74	60	3C
=	111101	75	61	3D
>	111110	76	62	3E
?	111111	77	63	3F
@	1000000	100	64	40
A	1000001	101	65	41
B	1000010	102	66	42
C	1000011	103	67	43
D	1000100	104	68	44

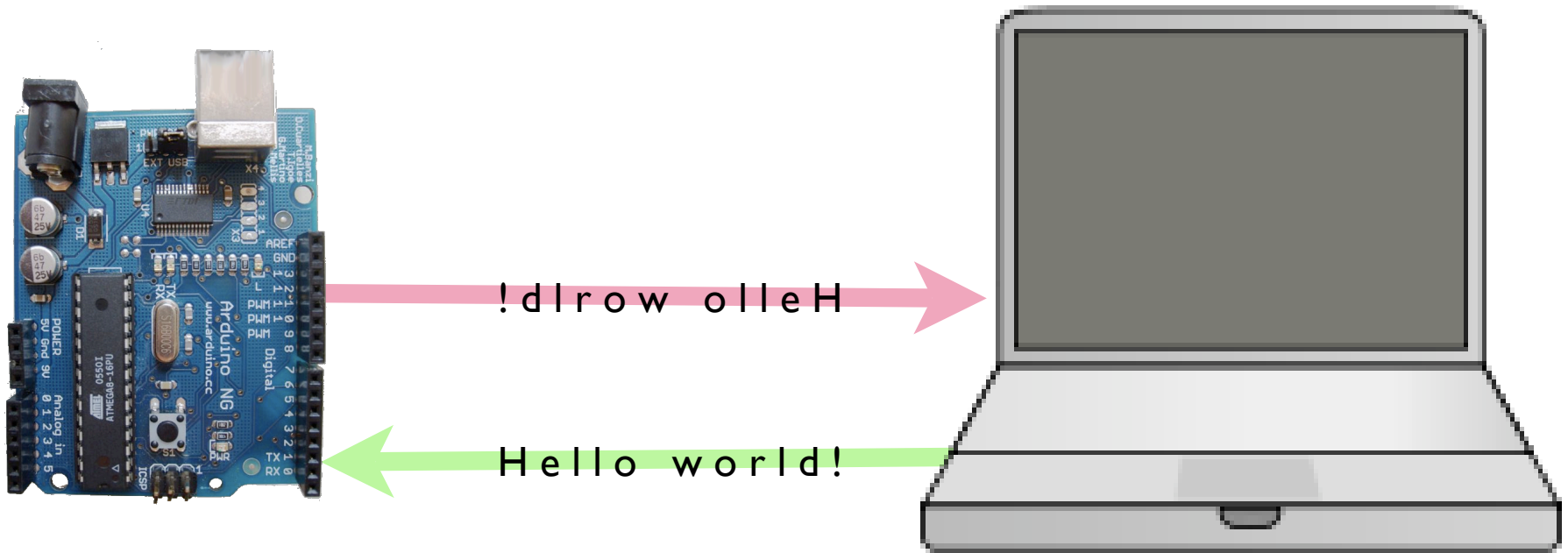
bytes as values



ASCII Table

Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char
0	0	0		32	20	40	[space]	64	40	100	@	96	60	140	`
1	1	1		33	21	41	!	65	41	101	A	97	61	141	a
2	2	2		34	22	42	"	66	42	102	B	98	62	142	b
3	3	3		35	23	43	#	67	43	103	C	99	63	143	c
4	4	4		36	24	44	\$	68	44	104	D	100	64	144	d
5	5	5		37	25	45	%	69	45	105	E	101	65	145	e
6	6	6		38	26	46	&	70	46	106	F	102	66	146	f
7	7	7		39	27	47	'	71	47	107	G	103	67	147	g
8	8	10		40	28	50	(	72	48	110	H	104	68	150	h
9	9	11		41	29	51	)	73	49	111	I	105	69	151	i
10	A	12		42	2A	52	*	74	4A	112	J	106	6A	152	j
11	B	13		43	2B	53	+	75	4B	113	K	107	6B	153	k
12	C	14		44	2C	54	,	76	4C	114	L	108	6C	154	l
13	D	15		45	2D	55	-	77	4D	115	M	109	6D	155	m
14	E	16		46	2E	56	.	78	4E	116	N	110	6E	156	n
15	F	17		47	2F	57	/	79	4F	117	O	111	6F	157	o
16	10	20		48	30	60	0	80	50	120	P	112	70	160	p
17	11	21		49	31	61	1	81	51	121	Q	113	71	161	q
18	12	22		50	32	62	2	82	52	122	R	114	72	162	r
19	13	23		51	33	63	3	83	53	123	S	115	73	163	s
20	14	24		52	34	64	4	84	54	124	T	116	74	164	t
21	15	25		53	35	65	5	85	55	125	U	117	75	165	u
22	16	26		54	36	66	6	86	56	126	V	118	76	166	v
23	17	27		55	37	67	7	87	57	127	W	119	77	167	w
24	18	30		56	38	70	8	88	58	130	X	120	78	170	x
25	19	31		57	39	71	9	89	59	131	Y	121	79	171	y
26	1A	32		58	3A	72	:	90	5A	132	Z	122	7A	172	z
27	1B	33		59	3B	73	;	91	5B	133	[	123	7B	173	{
28	1C	34		60	3C	74	<	92	5C	134	\	124	7C	174	|
29	1D	35		61	3D	75	=	93	5D	135	]	125	7D	175	}
30	1E	36		62	3E	76	>	94	5E	136	^	126	7E	176	~
31	1F	37		63	3F	77	?	95	5F	137	_	127	7F	177	

bytes as characters



talking bytes to Processing

assignment for next week

- midterm project: make first prototype
- lab: serial output and talking to Processing
- read Myron Krueger's "Responsive Environments", and Physical Computing, chapter 7
- keep writing in your journals, whatever inspires you