Current mood → Psych. Diag. Own meas.

time available → chart

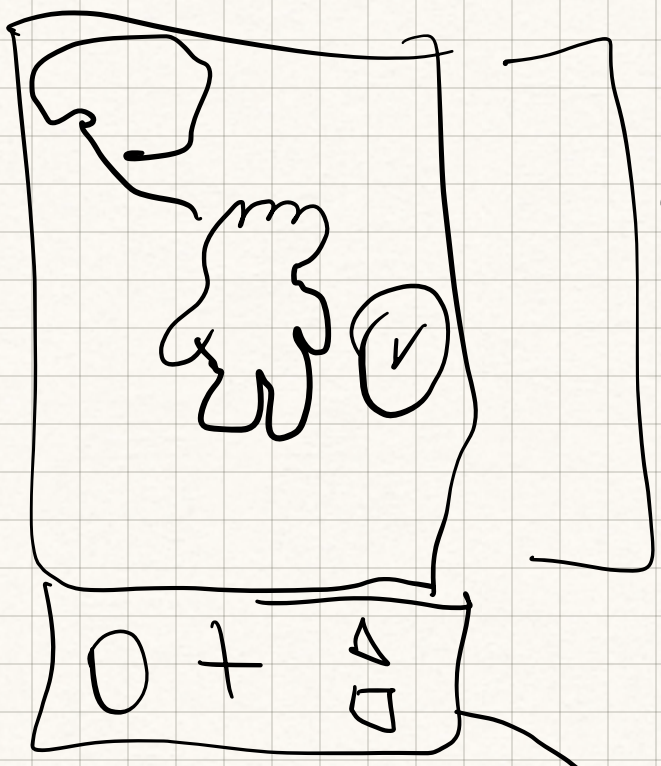
time management

↘ Pomodoro et.
calendar integ.
being active timer

1

Behind

Shield/ Circuit Board

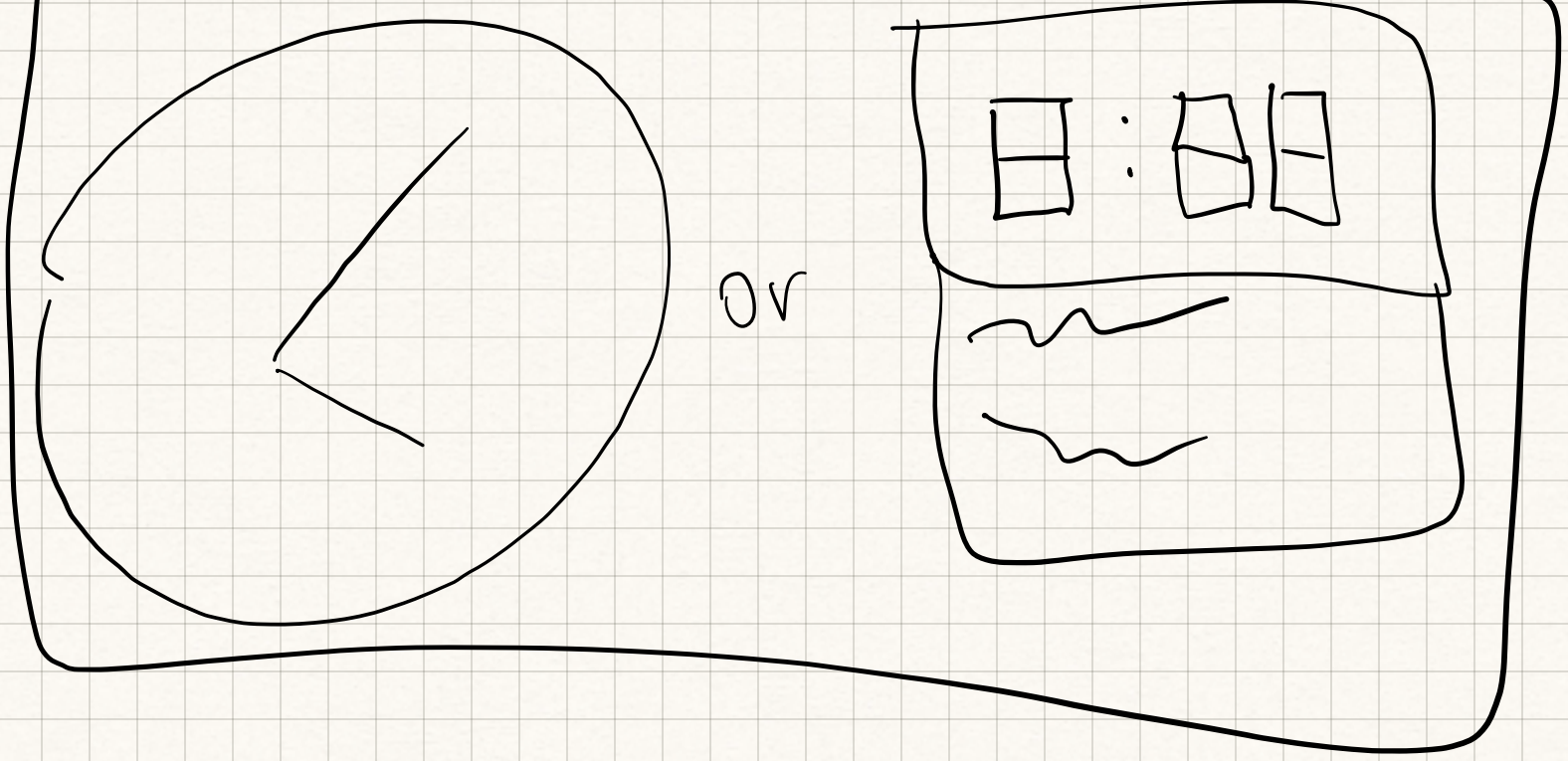


motivation / time mgmt

Can connect to the phone

Can also do a cute clock to hang in kitchen etc.

Standby mode



most LCDs Good
check for easy interfacing
Buttons are Simple
3D printing Enclosure - Later
LCD on parts list

October 28, 2024

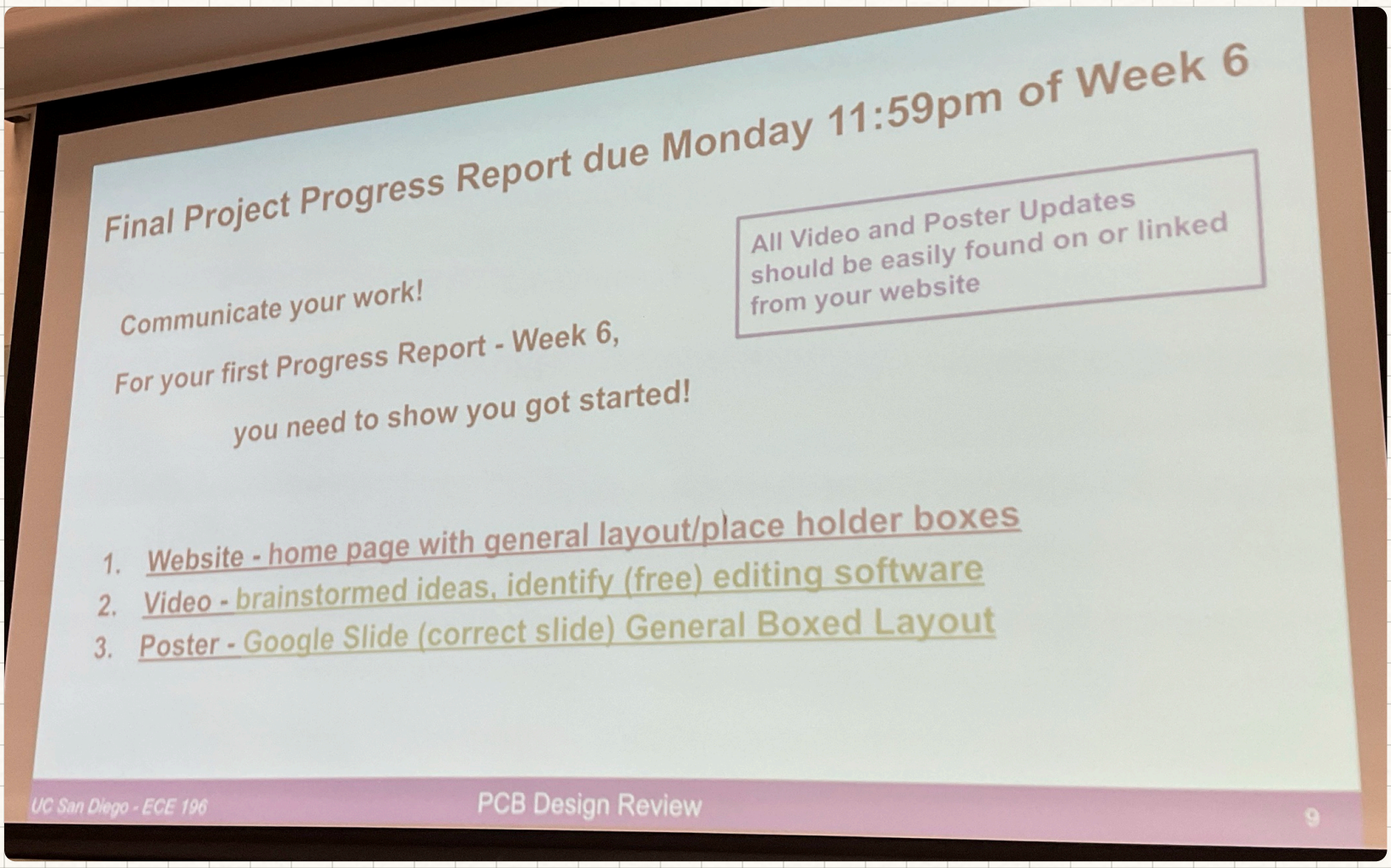
Share the positive things :)
↳ abt teammates.

check for back-orders or limited stock

wed by 4 pm : have PCB Bill of materials

a mouser/digikey "wishlist" style BOM is good.

have enough parts for 5 + PCB Population



final project

make KiCad file → part of ✓ Github Assignment

review two teams — one Google survey for all members
have two teams review ours
All things to github

Brand New Device

Splash screen → Pair device

Bluetooth setup / connection — How this works
↳ full stack assignment

name

ask about → wake time

When do you — • eat / cook
• workout
• laundry

sleep duration

what are your daily responsibilities

---

do an initial scheduling with all the previous inputs

Do we enforce specific time blocking
ex 45min active & 15min rest/transition for 1 Hour blocks

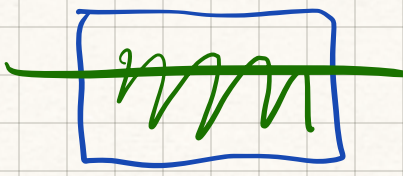
How should we implement Setup of Schedule

reminders → 10/5/1 min before task

follow up → 10/5/1 m after to ensure start

check off tasks
↳ weekly stats / summary ?

for notifications • sound • Pop-up-on-screen



---

what are the feature / interactions on the device

- check off task
- re arrange / delay tasks
- skip tasks
- notifications
- Suggestions → ex remind if skipping tasks too often — see melissa iders
  ↳ x is too many skips.
- weekly summary

Components

Screen (Has touch but implementation may not use)

LEDs → notification → neopixel
↳ for interaction → check of task led dances/lights

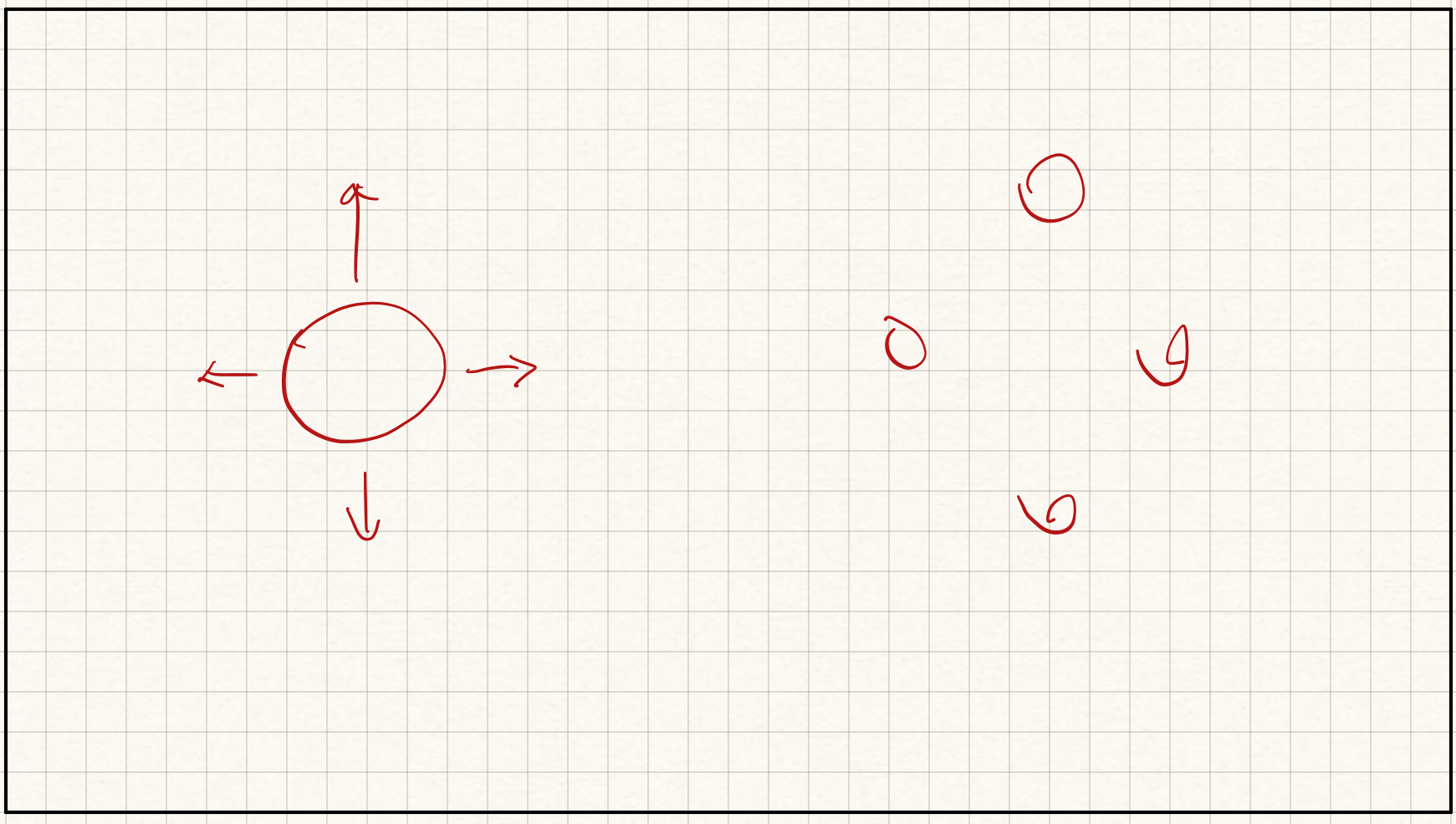
Battery Speaker / noise maker
↳ goal 16 Hours but 8 is accept
↳ we expect morning & evening heavey usage

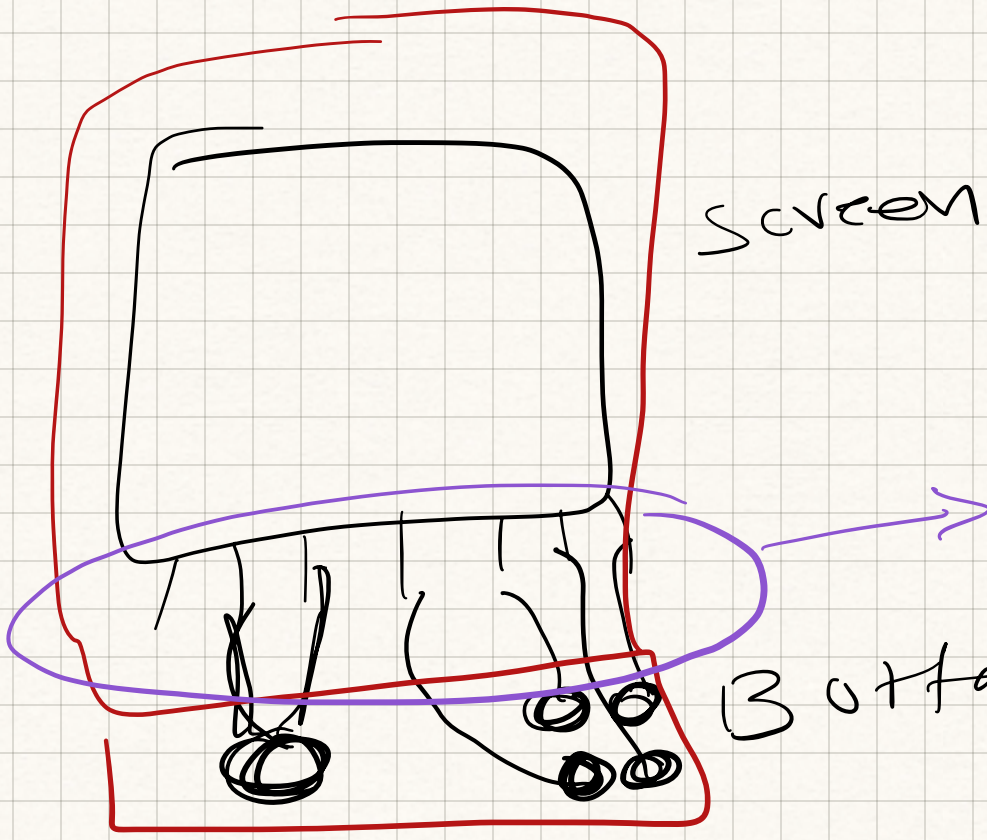
Buttons

tactile → (large (olor) slide joystic

rocker / slide / push → (on / off)

speaker / Piezo thing / something





connects:

- buttons
- LCD module
- where do resisters

Software Stack

Custom
- UI/GUI
- Algorithms
- :
- :

Libraries
- LCD Driver
- Touch driver
- Sound driver
- Bluetooth

Hardware Stack

Process

→ Get parts

→ Bread board

→ data sheets

→ tutorials

→ ...

} Ask TAs & Karcher / Experts.

ESP 32 S3 — 80 mA avg

3.5 320x480 Screen — 95 mA

Neopixel (WS2812) — 20 mA

200mA avg while on

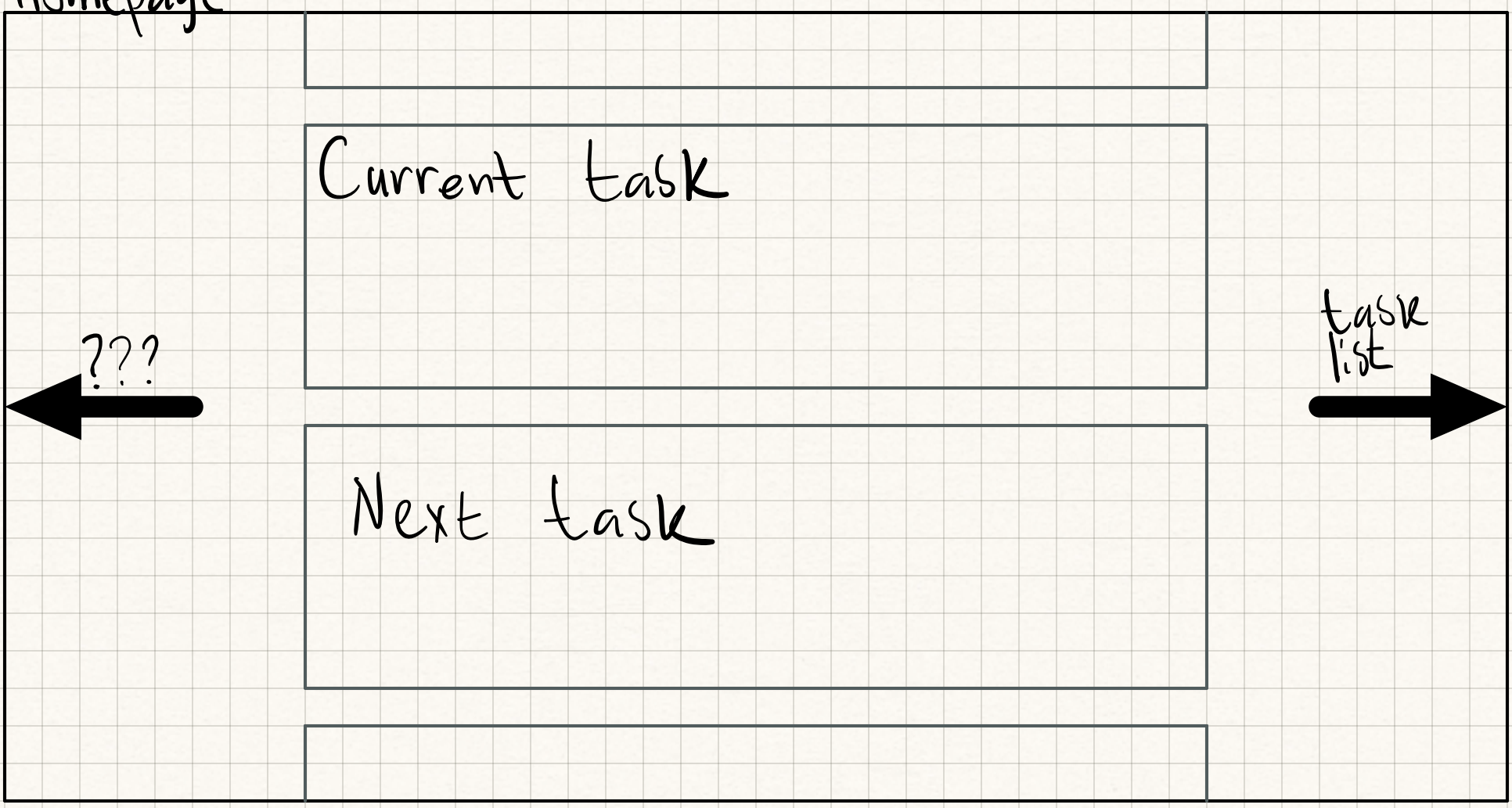
100 mA screen off avg

assume 50 % Screen time — 150 mA/hour

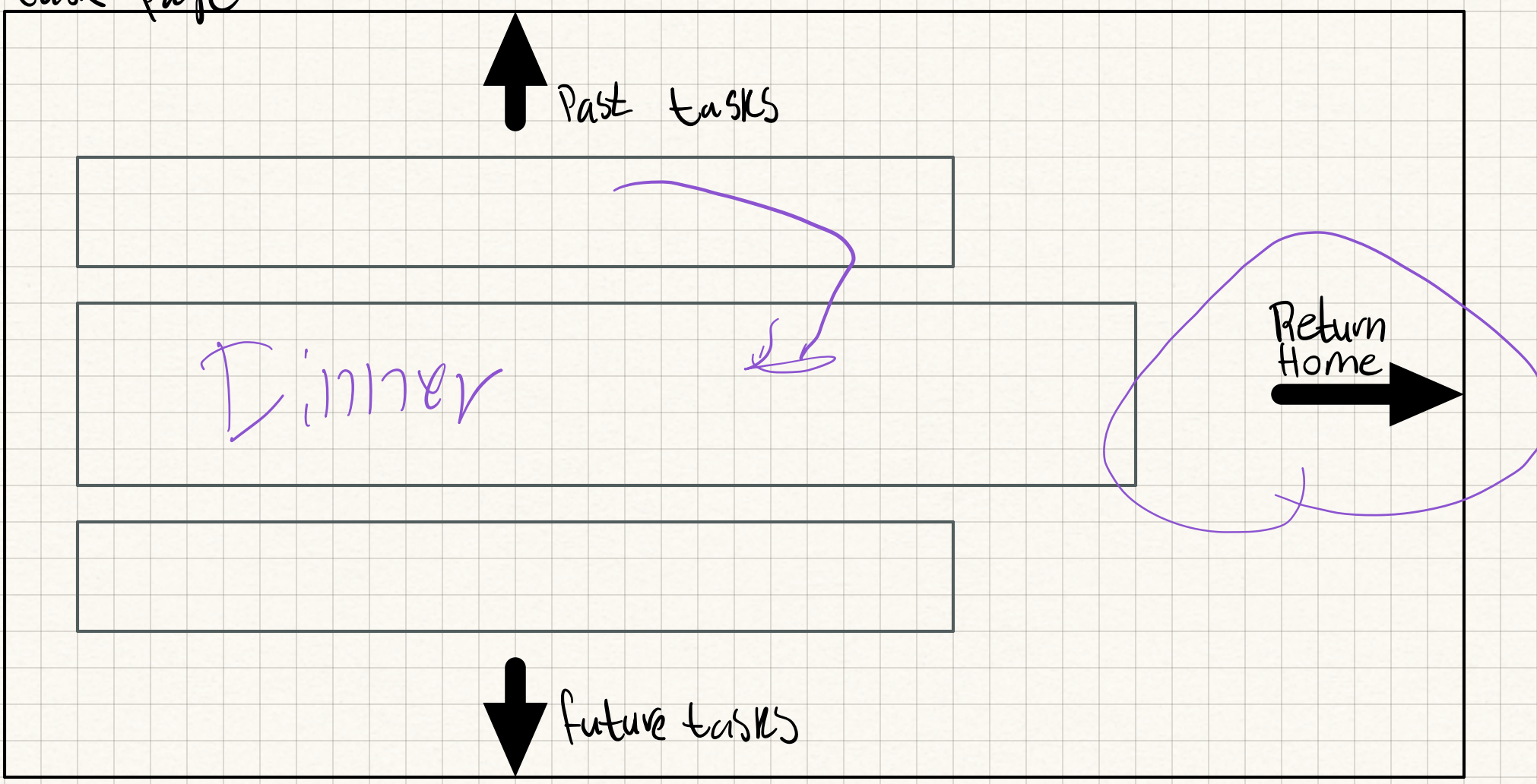
8 hour usage — 1200mAh

16 hour usage — 2400mAh

Homepage

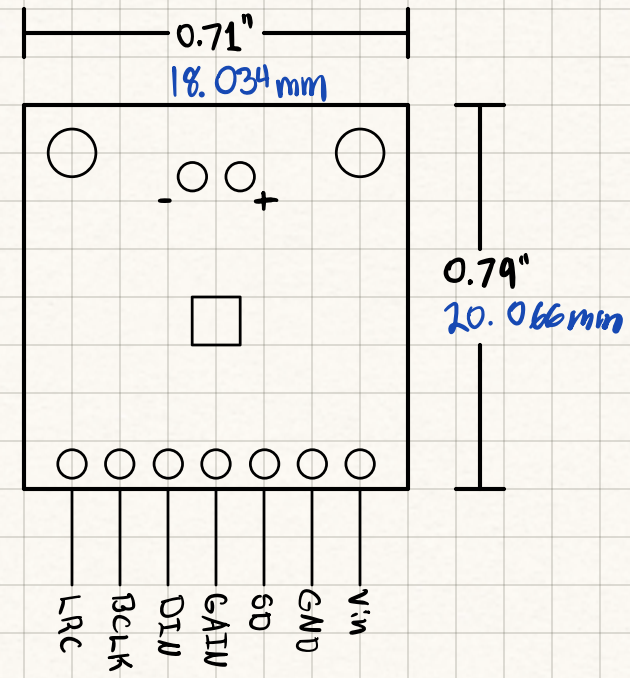


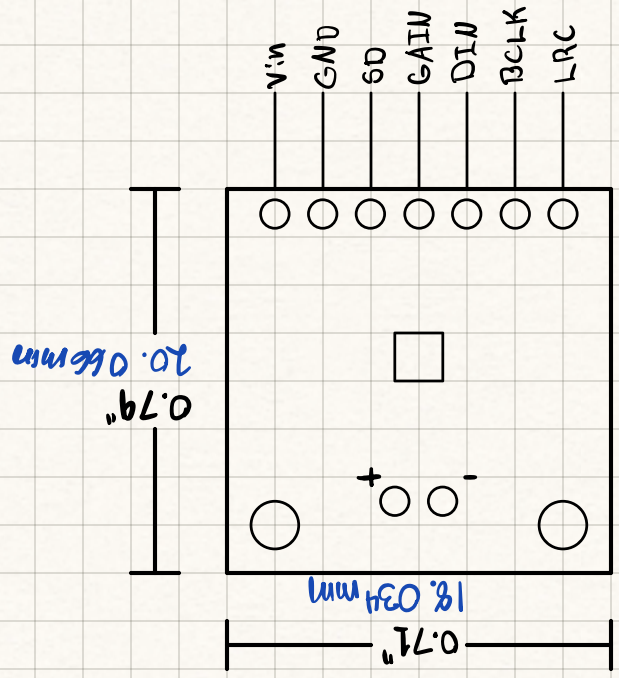
task page



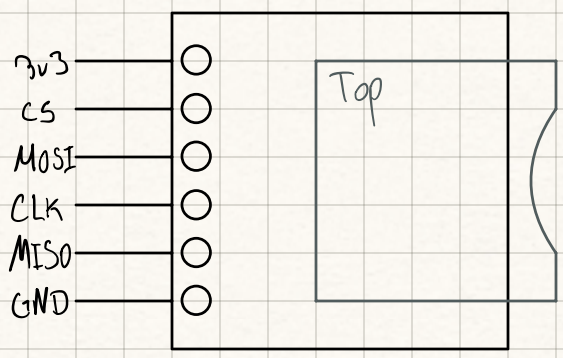
Giselle

Max98357 Amplifier

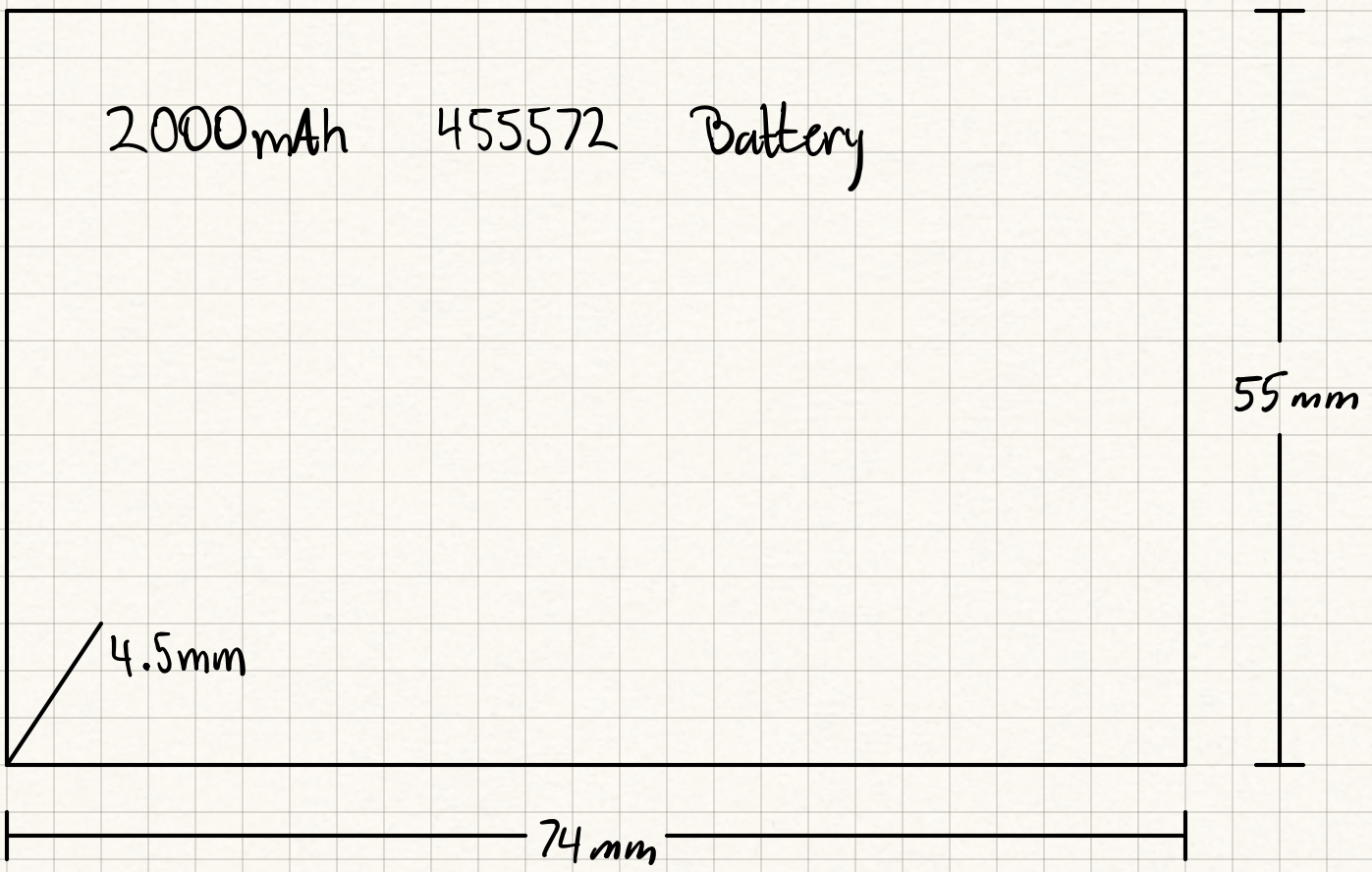


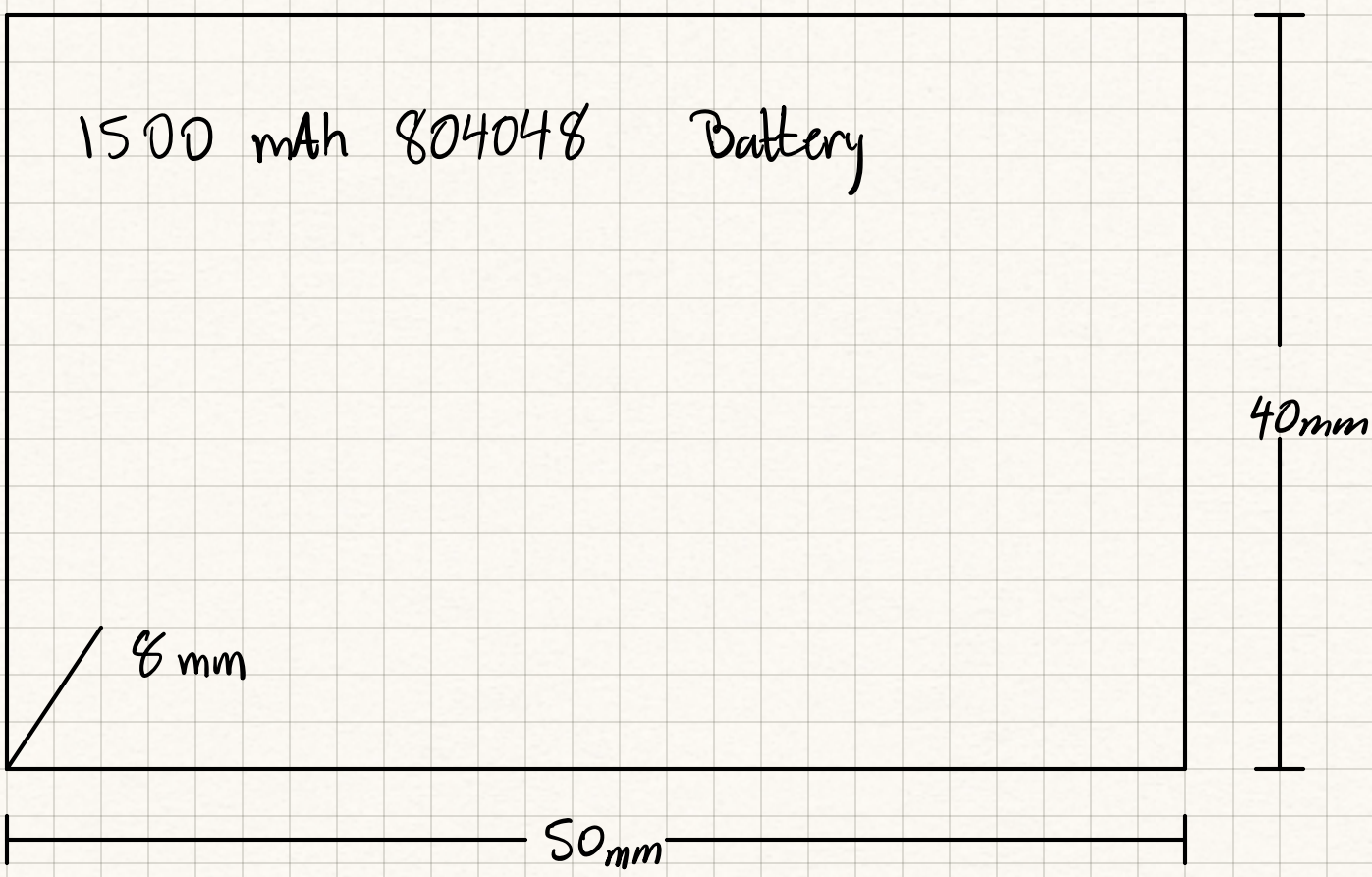


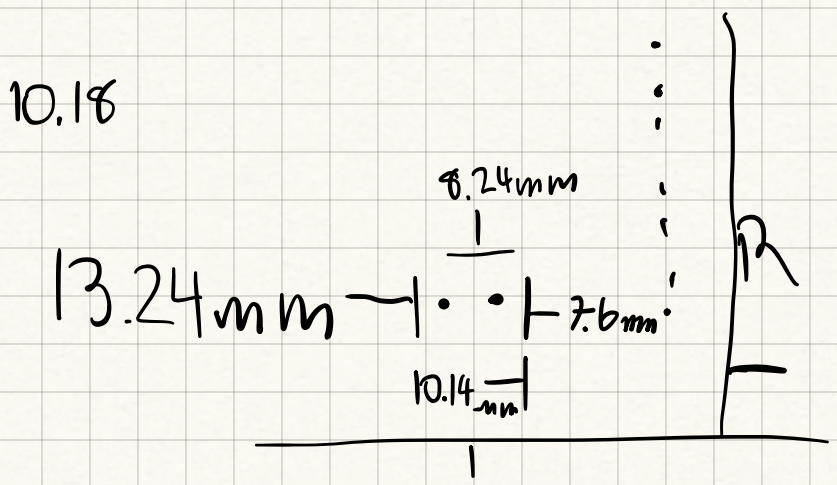
Micro SD Adapter



17.9x17.9mm







$2.54 \cdot 2 = 5.08$

right

up Left Dawn

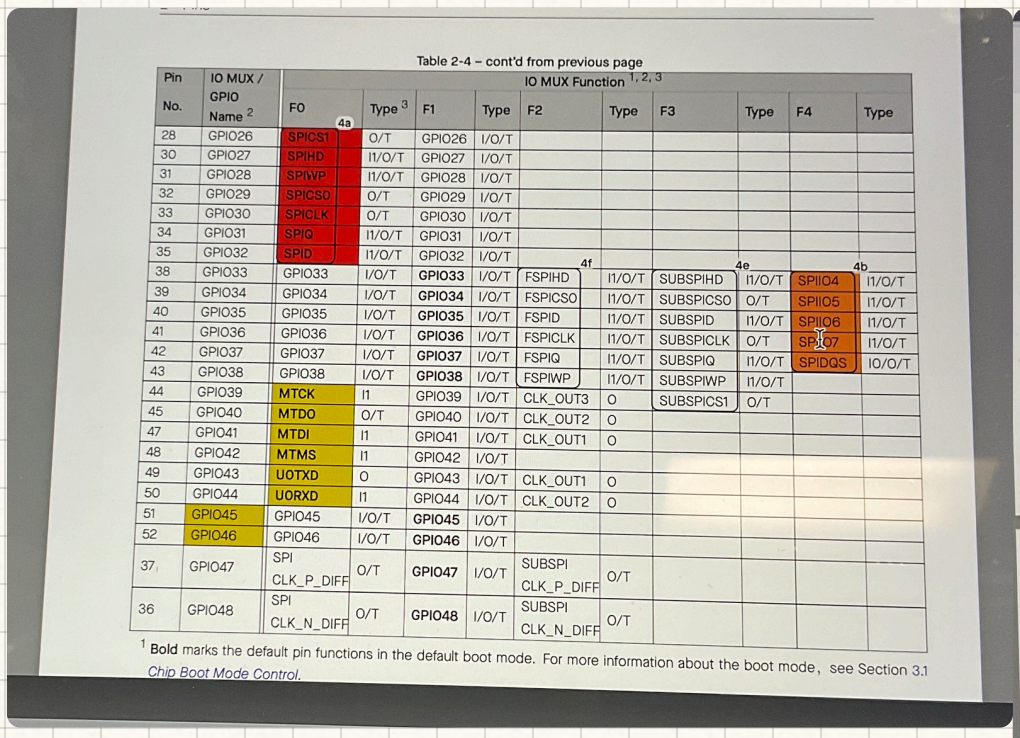
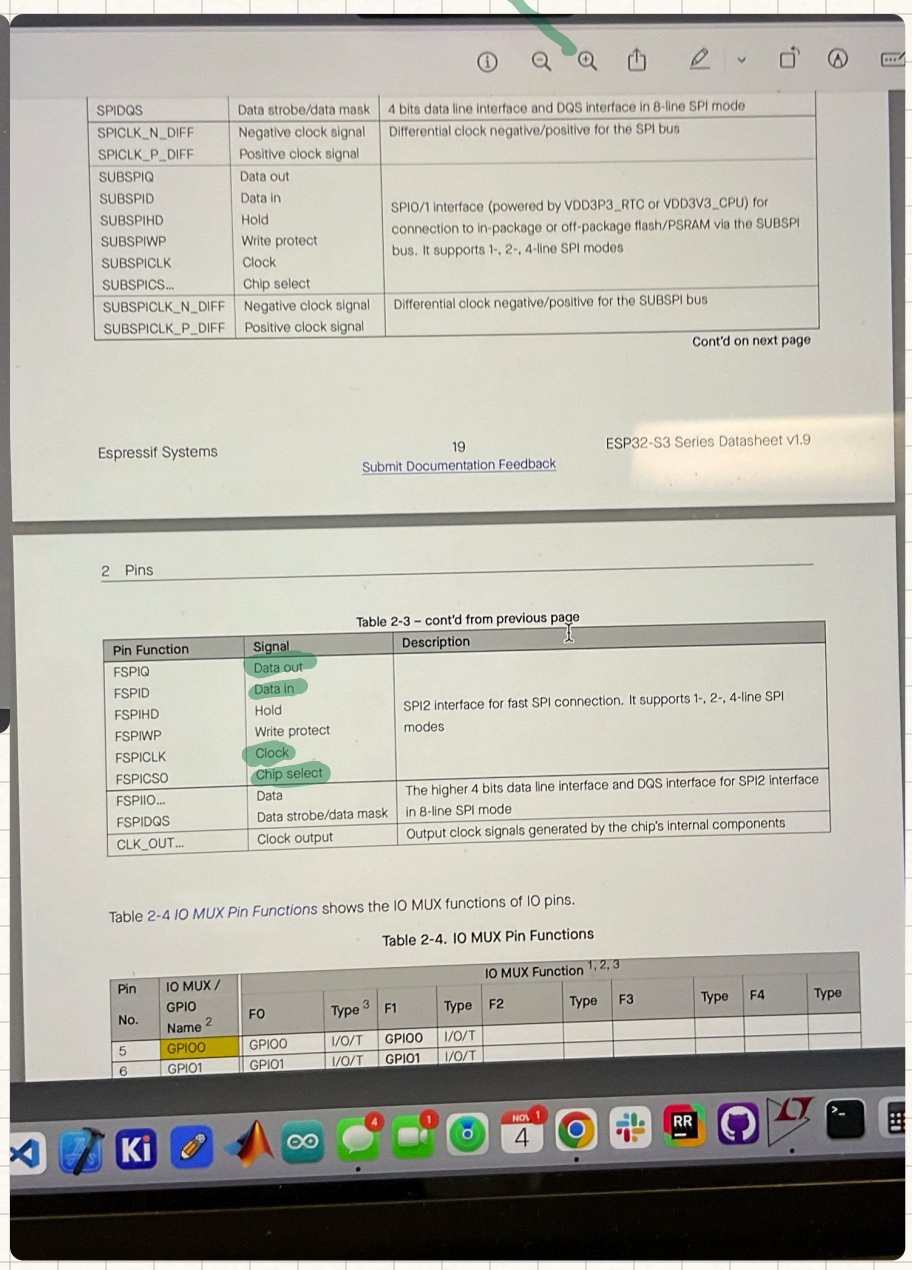


Table 2-4 – cont'd from previous page

Pin No.	IO MUX / GPIO Name [2]	IO MUX Function [1, 2, 3] F0	Type [3]	F1	Type	F2	Type	F3	Type	F4	Type
28	GPIO26	SPICS1 (4a)	O/T	GPIO26	I/O/T						
30	GPIO27	SPIHD	I1/O/T	GPIO27	I/O/T						
31	GPIO28	SPIWP	I1/O/T	GPIO28	I/O/T						
32	GPIO29	SPICS0	O/T	GPIO29	I/O/T						
33	GPIO30	SPICLK	O/T	GPIO30	I/O/T						
34	GPIO31	SPIQ	I1/O/T	GPIO31	I/O/T						
35	GPIO32	SPID	I1/O/T	GPIO32	I/O/T						
38	GPIO33	GPIO33	I/O/T	**GPIO33**	I/O/T	FSPIHD (4f)	I1/O/T	SUBSPIHD (4e)	I1/O/T	SPII04 (4b)	I1/O/T
39	GPIO34	GPIO34	I/O/T	**GPIO34**	I/O/T	FSPICS0	I1/O/T	SUBSPICS0	O/T	SPII05	I1/O/T
40	GPIO35	GPIO35	I/O/T	**GPIO35**	I/O/T	FSPID	I1/O/T	SUBSPID	I1/O/T	SPII06	I1/O/T
41	GPIO36	GPIO36	I/O/T	**GPIO36**	I/O/T	FSPICLK	I1/O/T	SUBSPICLK	O/T	SPII07	I1/O/T
42	GPIO37	GPIO37	I/O/T	**GPIO37**	I/O/T	FSPIQ	I1/O/T	SUBSPIQ	I1/O/T	SPIDQS	I0/O/T
43	GPIO38	GPIO38	I/O/T	**GPIO38**	I/O/T	FSPIWP	I1/O/T	SUBSPIWP	I1/O/T		
44	GPIO39	MTCK	I1	GPIO39	I/O/T	CLK_OUT3	O	SUBSPICS1	O/T		
45	GPIO40	MTDO	O/T	GPIO40	I/O/T	CLK_OUT2	O				
47	GPIO41	MTDI	I1	GPIO41	I/O/T	CLK_OUT1	O				
48	GPIO42	MTMS	I1	GPIO42	I/O/T						
49	GPIO43	U0TXD	O	GPIO43	I/O/T	CLK_OUT1	O				
50	GPIO44	U0RXD	I1	GPIO44	I/O/T	CLK_OUT2	O				
51	GPIO45	GPIO45	I/O/T	**GPIO45**	I/O/T						
52	GPIO46	GPIO46	I/O/T	**GPIO46**	I/O/T						
37	GPIO47	SPI CLK_P_DIFF	O/T	**GPIO47**	I/O/T	SUBSPI CLK_P_DIFF	O/T				
36	GPIO48	SPI CLK_N_DIFF	O/T	**GPIO48**	I/O/T	SUBSPI CLK_N_DIFF	O/T				

[1] **Bold** marks the default pin functions in the default boot mode. For more information about the boot mode, see Section 3.1 *Chip Boot Mode Control*.



SPIDQS	Data strobe/data mask	4 bits data line interface and DQS interface in 8-line SPI mode
SPICLK_N_DIFF	Negative clock signal	Differential clock negative/positive for the SPI bus
SPICLK_P_DIFF	Positive clock signal	
SUBSPIQ	Data out	SPI0/1 interface (powered by VDD3P3_RTC or VDD3V3_CPU) for connection to in-package or off-package flash/PSRAM via the SUBSPI bus. It supports 1-, 2-, 4-line SPI modes
SUBSPID	Data in	
SUBSPIHD	Hold	
SUBSPIWP	Write protect	
SUBSPICLK	Clock	
SUBSPICS...	Chip select	
SUBSPICLK_N_DIFF	Negative clock signal	Differential clock negative/positive for the SUBSPI bus
SUBSPICLK_P_DIFF	Positive clock signal	

Cont'd on next page

Table 2-3 – cont'd from previous page

Pin Function	Signal	Description
FSPIQ	Data out	SPI2 interface for fast SPI connection. It supports 1-, 2-, 4-line SPI modes
FSPID	Data in	
FSPIHD	Hold	
FSPIWP	Write protect	
FSPICLK	Clock	
FSPICS0	Chip select	
FSPIIO...	Data	The higher 4 bits data line interface and DQS interface for SPI2 interface in 8-line SPI mode
FSPIDQS	Data strobe/data mask	
CLK_OUT...	Clock output	Output clock signals generated by the chip's internal components

Table 2-4 *IO MUX Pin Functions* shows the IO MUX functions of IO pins.

Table 2-4. IO MUX Pin Functions

Pin No.	IO MUX / GPIO Name [2]	IO MUX Function [1, 2, 3] F0	Type [3]	F1	Type	F2	Type	F3	Type	F4	Type
5	GPIO0	GPIO0	I/O/T	GPIO0	I/O/T						
6	GPIO1	GPIO1	I/O/T	GPIO1	I/O/T						

SD_CS
CTP_INT
CTP_SDA
CTP_RST
CTP_SCL
SDO (MISO)
LED
SCK
SDI (MOSI)
LCD_RS
LCD_RST
LCD_CS
GND
VCC

Screen Driver:
- ST7796U
- 4-line SPI

Touch Driver:
- FT6336U
- I^2C

Lect Nov. 4, 2024

video & poster aren't due until end

But we should working on it as we go

website Subtitues for presentation.

website should be available on Canvas & accessable

mini-project #3 wednesday overview

updates should be on the website

Github pages, Google Sites, Word press, WIX

sign up for meetings

Top - cap
x 148.2
y 108.3

Butt Sel Top

Bottom - Res
x 148.2 157.7 159.2 164.7
113.3

SD Card Adapter pins

3.3V — Vcc
CS — IO10
MOSI — IO11
CLK — IO12
MISO — IO14
GND — GND

Amplifier pins

4 — LRC
5 — BCLK
6 — DIN
— GAIN
7 — SD
GND — GND
+ — Vin

SD Card Adapter pins S3 mini

3.3V — Vcc
CS — 44
MOSI — 43
CLK — 42
MISO — 35
GND — GND

LED — 41
SCK — 36
SDI/MOSI — 37
RS — 47
Rst — 33
CS — 34
GND — GND
Vcc — Vcc

Email Karcher ✓ PCB ✓, website ✓

Print CAD & revise CAD ✓

~~Finish poster, Digrams, pictures, text test results~~

Website

talk about Parts challenges — list our challenges.
PCB challenges
Code challenges

Discuss Demo day - ~~wednesday~~

Tutorial - Due friday

CODE

Sounds work

time works

Popup works

fix ~~logic~~ & loop

Review teams 2 thru 6.

	Poster rank x/5 5 is best	best part	demo rank lots of info	why
2	4	cool looking & cost effective Design	Somewhat interestin 3	Creative & well org. Poster Good looking construct.
3		High Quality design purposefull		
4				
5	2	Solution to real & regular problem	Design seems to function correct 3 to the point	Somewhat messy poster
6				

3 Capuchin Problem → cost $800

mosfets $600

Very effective team

team design happy color scheme poster

Functional product app looks good.

thought of storage issues

6 intricate mechanics Poster → 1

Annotate our Digrams!

Describe & create examples for code & ect.