

Format:

Question: Who is Hobbes?

Resource: [https://en.wikipedia.org/wiki/Thomas\\_Hobbes](https://en.wikipedia.org/wiki/Thomas_Hobbes)

## Software Stack

Can we use Expo for our Onboarding app?

<https://expo.dev/>

## ESP32 S3 Mini

Where can I find the datasheet for the dev board?

[https://www.espressif.com/sites/default/files/documentation/esp32-s3-mini-1\\_mini-1u\\_datasheet\\_en.pdf](https://www.espressif.com/sites/default/files/documentation/esp32-s3-mini-1_mini-1u_datasheet_en.pdf)

What are the different SPI Flash Modes?

<https://docs.espressif.com/projects/esptool/en/latest/esp32/advanced-topics/spi-flash-modes.html>

How to update the firmware of the ESP32 S3?

<https://docs.espressif.com/projects/esp-idf/en/stable/esp32s3/api-guides/dfu.html>

## KiCAD:

Question: What footprint is used for 0.60 mm x 0.30 mm SMD resistors

Resource: <https://kic.kicad.org/footprint/f3/f3.1.html>

What are the common sizes for SMD capacitors?

<https://weishielectronics.com/smd-capacitor-sizes/>

How do I specify a No Connection in Kicad?

<https://forum.kicad.info/t/nc-no-connect-pins/4997>

What are the minimum trace thicknesses we need?

<https://www.digikey.com/en/resources/conversion-calculators/conversion-calculator-pcb-trace-width>

What are the specifications JLCPCB requires to make PCBs for us?

<https://jlcpcb.com/capabilities/Capabilities>

Did we pick the same button as the footprint we chose in KiCAD?

Purchased:

<https://www.ckswitches.com/media/2728/pts815.pdf>

Footprint:

<https://www.ckswitches.com/media/1476/pts810.pdf>

What is DIN 965? (Mounting holes related)

<https://fullerfasteners.com/tech/din-965-specifications-cross-recessed-countersunk-head-screws/>

What is ISO 7380? (Mounting holes related)

<https://cdn.standards.iteh.ai/samples/53671/84df01c5fcce4a91896ac3b0c55ca128/ISO-7380-1-2011.pdf>

How do I do a copper fill/pour in KiCAD?

<https://www.wayneandlayne.com/blog/2013/02/26/kicad-tutorial-copper-pours-fills/>

What does a possible 14-pin FPC connector with a 0.5 mm pitch look like?

[https://www.te.com/commerce/DocumentDelivery/DDEController?Action=showdoc&DocId=Customer+Drawing%7F1734839%7FC%7Fpdf%7FEnglish%7FENG\\_CD\\_1734839\\_C\\_C\\_1734839.pdf%7F4-1734839-0](https://www.te.com/commerce/DocumentDelivery/DDEController?Action=showdoc&DocId=Customer+Drawing%7F1734839%7FC%7Fpdf%7FEnglish%7FENG_CD_1734839_C_C_1734839.pdf%7F4-1734839-0)

What is the XC6206? (Voltage regulator on our LCD) Can it be connected to our battery?

<https://product.torexsemi.com/system/files/series/xc6206.pdf>

## LCD:

How does 4-line SPI work?

<https://www.analog.com/en/resources/analog-dialogue/articles/introduction-to-spi-interface.html>

What are the specifications of our LCD? Documentation

[http://www.lcdwiki.com/3.5inch\\_IPS\\_SPI\\_Module\\_ST7796#top](http://www.lcdwiki.com/3.5inch_IPS_SPI_Module_ST7796#top)

How does the ST7769U TFT/Display controller work?

<https://focuslcds.com/wp-content/uploads/Drivers/ST7796U.pdf>

What graphics libraries can we use for our project?

<https://docs.lvgl.io/master/intro/basics.html>

Specifically for the ST7796?

<https://docs.lvgl.io/master/details/integration/driver/display/st7796.html>

Is there a write-up on using rust and a screen with an ESP32?

<https://lilymara.xyz/posts/2023/01/images-esp32/>

Is there a rust display driver for the ST7796?

<https://docs.rs/mipidsi/latest/mipidsi/>

<https://github.com/almindor/mipidsi/blob/master/docs/TROUBLESHOOTING.md>

More ST7796-related stuff

[https://github.com/letscontrolit/ESPEasy/blob/mega/src/\\_P116\\_ST77xx.ino](https://github.com/letscontrolit/ESPEasy/blob/mega/src/_P116_ST77xx.ino)  
[https://github.com/adafruit/Adafruit-ST7735-Library/blob/master/Adafruit\\_ST77xx.cpp](https://github.com/adafruit/Adafruit-ST7735-Library/blob/master/Adafruit_ST77xx.cpp)

How do I set up a LVGL simulator to work in?

[https://github.com/lvgl/lv\\_port\\_pc\\_vscode?tab=readme-ov-file#install-sdl-and-build-tools](https://github.com/lvgl/lv_port_pc_vscode?tab=readme-ov-file#install-sdl-and-build-tools)

What is the SDL (Simple DirectMedia Layer)?

<https://github.com/libsdl-org/SDL/blob/release-2.30.9/docs/README.md>

What is MIPI DSI?

[https://en.wikipedia.org/wiki/Display\\_Serial\\_Interface](https://en.wikipedia.org/wiki/Display_Serial_Interface)

<https://www.mipi.org/specifications/dsi>

How do we improve the performance of our MCU and LCD?

[https://github.com/espressif/esp-bsp/blob/master/components/esp\\_lvgl\\_port/docs/performance.md](https://github.com/espressif/esp-bsp/blob/master/components/esp_lvgl_port/docs/performance.md)

How to set the rotation of the LCD in software?

<https://docs.lvgl.io/master/details/main-components/display.html#rotation>

How do we use the ESP\_Display\_Panel Library?

[https://github.com/esp-arduino-libs/ESP32\\_Display\\_Panel/blob/master/docs/How\\_To\\_Use.md#dependencies-and-versions-1](https://github.com/esp-arduino-libs/ESP32_Display_Panel/blob/master/docs/How_To_Use.md#dependencies-and-versions-1)

## Amp/Speaker:

Speaker and Amplifier Resources:

<https://learn.sparkfun.com/tutorials/i2s-audio-breakout-hookup-guide/all>

What is the audio library from the ESP32 DSP textbook?

<https://github.com/schreibfaul1/ESP32-audioI2S/tree/master/src>


## LVGL/Hardware:

Basics: (have many videos for basic concepts)

[Font Manager](#) | [Basics Tutorial #12](#) | [SquareLine Studio](#)

Hardware:

Integrating buttons to trigger an event in GUI:

-  [Events and Actions](#) | [Basics Tutorial #4](#) | [SquareLine Studio](#)

## SD Card

What is an 8.3 filename?

[https://en.wikipedia.org/wiki/8.3\\_filename](https://en.wikipedia.org/wiki/8.3_filename)

What is the library for SD cards in Arduino?

<https://docs.arduino.cc/libraries/sd/>

<https://github.com/arduino-libraries/SD/blob/master/src/SD.cpp>

## Arduino

How are interrupts added within the Arduino IDE?

<https://docs.arduino.cc/language-reference/en/functions/external-interrupts/attachInterrupt/>

What is a Schmitt-Trigger?

<https://www.ti.com/product/SN74LVC1G17>

What is switch debouncing?

<https://www.ganssle.com/debouncing-pt2.htm>

How do I set multiple SPI interfaces in Arduino?

<https://randomnerdtutorials.com/esp32-spi-communication-arduino/>

## Random/Unrelated:

What is the Aho-Corasick Algorithm?

[https://en.wikipedia.org/wiki/Aho%E2%80%93Corasick\\_algorithm](https://en.wikipedia.org/wiki/Aho%E2%80%93Corasick_algorithm)

Where to get colors :) ???

<https://coolors.co/845a6d-758173-003049-35ff69-363020>

## LCD- Giselle's Qs

- does this mean we need to have all graphics for our device on here(lcd code?)??
- Do we need one single file for lcd set ?
  - We will need, .ino (Arduino), and multiple .h and .c files
- one for specific feature or is this just a function within??
  - Specific features, objects, data, ect. Will be broken into .h and .c files as needed.
- Do they need their own code file??
  - Likely, see above
- One big code ?? how do we add the specific screens(intro, focus, task view stc) to our lcd??
  - You will have to RTFM.
- When specific things happen with our device how do the screens work ??
  - We will have to determine and code this.
-