ChatZybo

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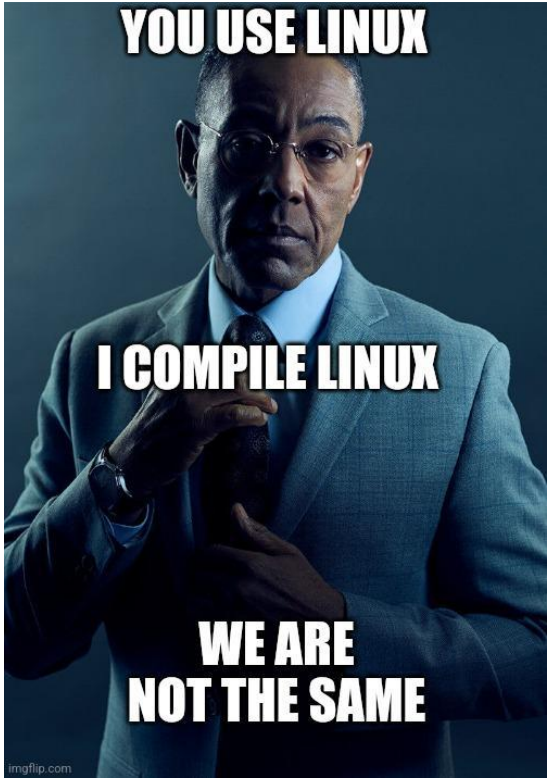
Introduction

Inspitration

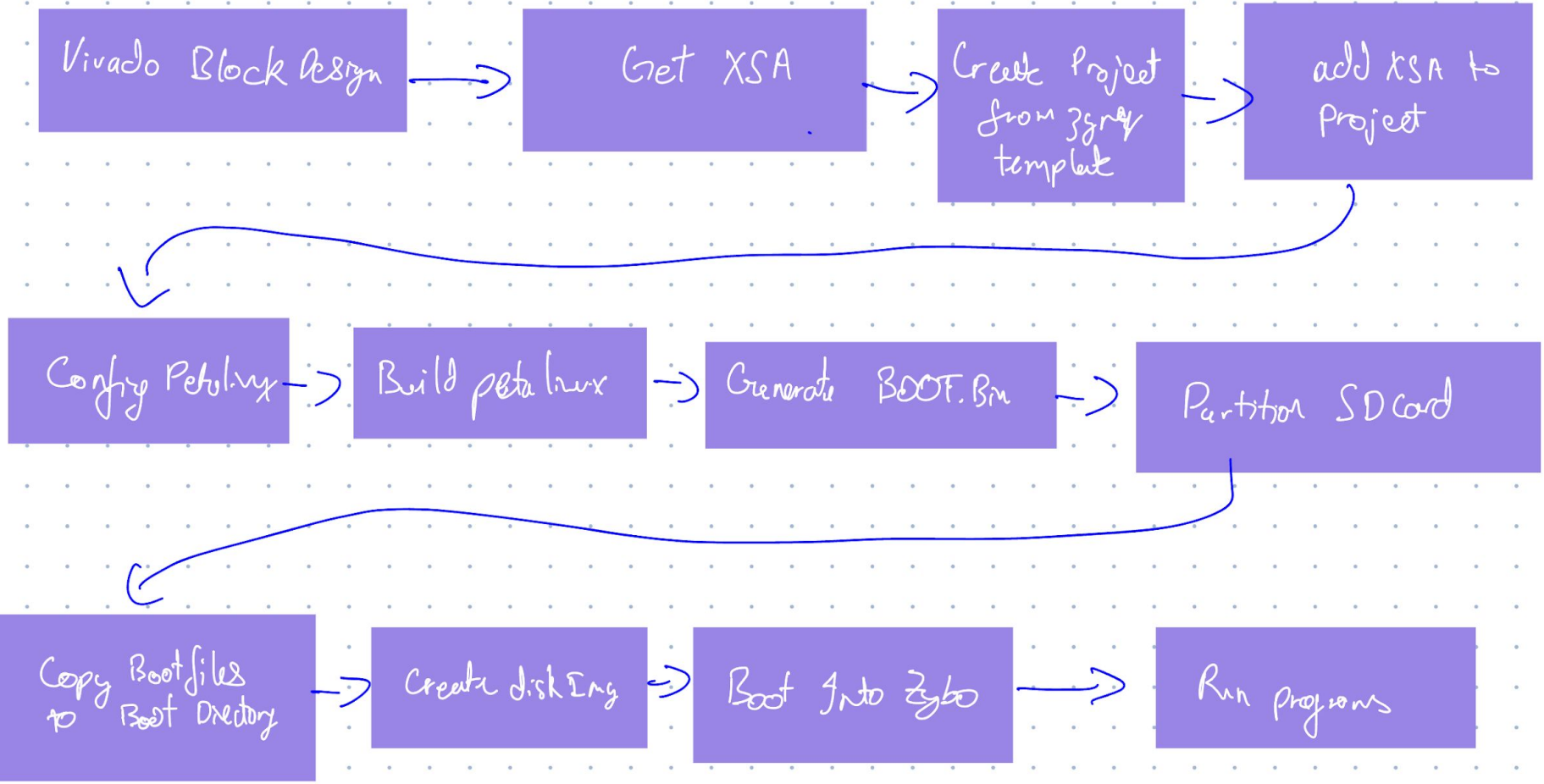
- Linux user for 8+ years
- Love Linux
- Wanted to learn Userspace and kernel interaction
- I really wanted to use PMOD for the Star Wars Idea but I was too far in to pivot



General System Description

- Problem Solving
  - It enables system level AI operation for embedded systems
- Application Space
  - smart home devices
- Market-End User
  - Its very applicable in the consumer embedded system space, so like home electronics like fridges.

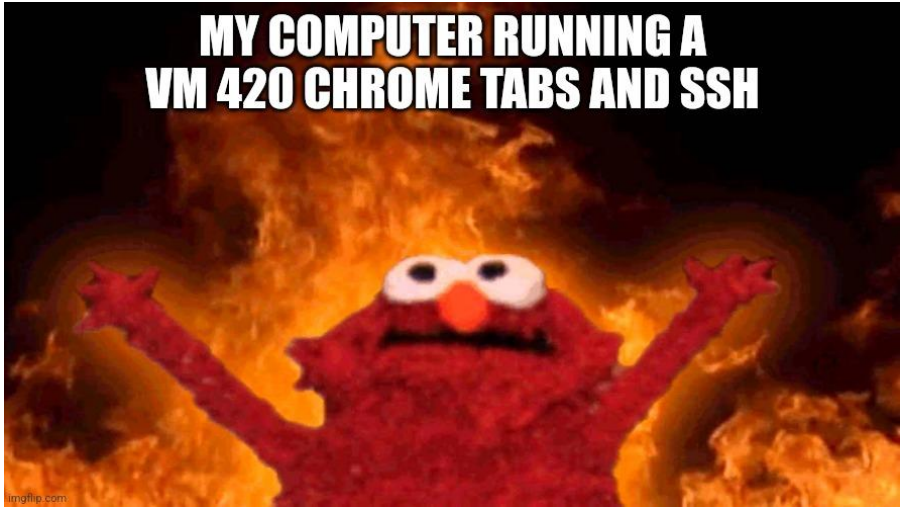
System Block Design


Vivado Block Design
Get XSA
Create Project from Zynq template
add XSA to Project
Config Petalinux
Build petalinux
Generate BOOT.Bin
Partition SD Card
Copy Bootfiles to Boot Directory
Create Disk Img
Boot into Zybo
Run programs

Implementation Challenges

Petalinux-Build

- No builds before
- Installed VM
- Builds work
- Builds Faster
- More iterations



Python Working environment

- Need python to interface with APIs
- Need pip

Internet Connectivity

- Connect through SSH
- Connect to OpenAI API

Root File System

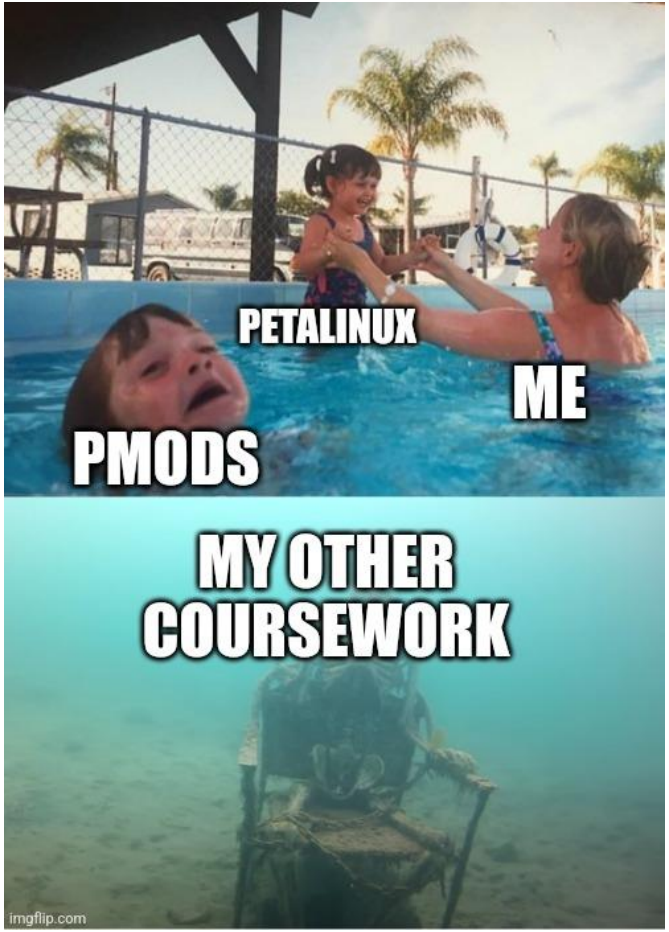
- Ran into memory issue
- Needed it for scripting
- Needed to create rootfs partition

SSH

- Dropbear SSH = bad
- Minicom = bad
- SSH = easy
- SSH = multiple devices

PMODS

- Wanted PMODs
- Tried UIO drivers
- Tried Hard Coded code



Summary

Success

- No
- I wanted PMODs to work but they did not work unfortunately
- Its partially a success
  - I have learned a lot
  - I have scripted on the zybo board

Version 2.0

- Get pmods working
- display gpt output on OLED
- Improve on the application of the project

Resource Limitations

I think the resources available were sufficient, but The project I chose took a lot more than I expected.