Embedded Systems 2 Final Project

EE332/493 Embedded Systems Hardware/Software Spring 2021

Final Project

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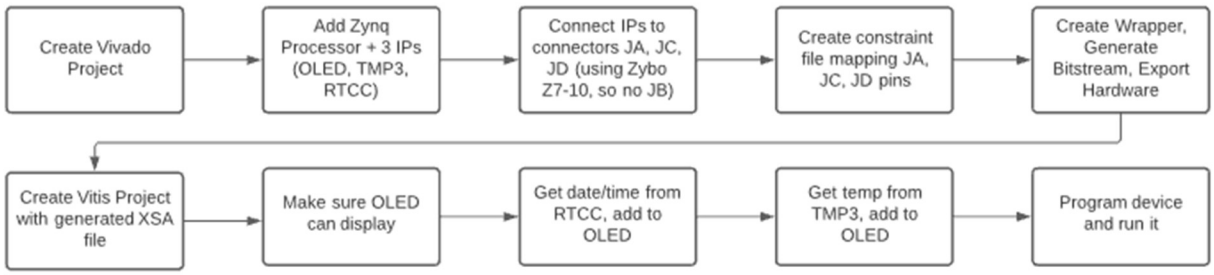
https://github.com/embedded-systems-2-fall-2021-labs/final-project-Alec-Bakholdin-Rutgers

Purpose/Objective

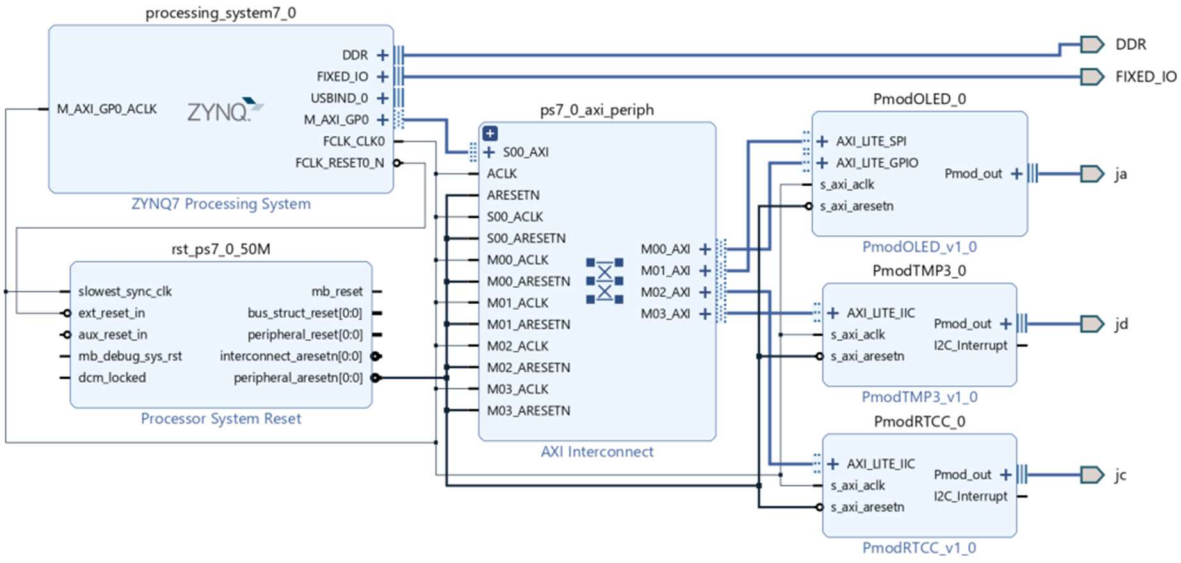
The purpose of this project was to test my knowledge of the Xilinx environment and my ability to create something original, but I failed, I'm sorry. This project did demonstrate, however, that I have learned the basics of Vivado and Vitis, that I can use them without following a step-by-step guide, and that I can code in embedded C to a degree.

Theory of Operation

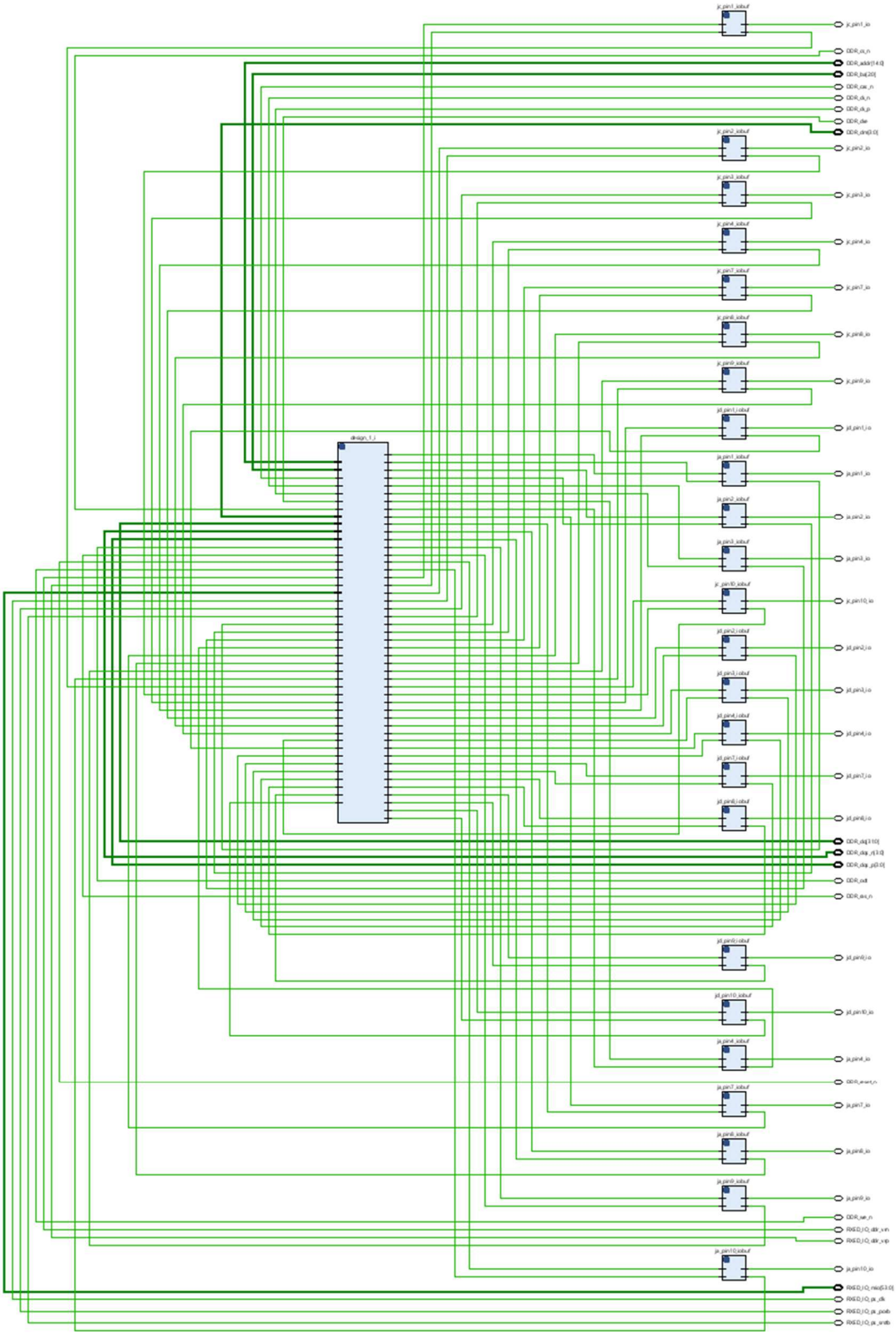


Vivado

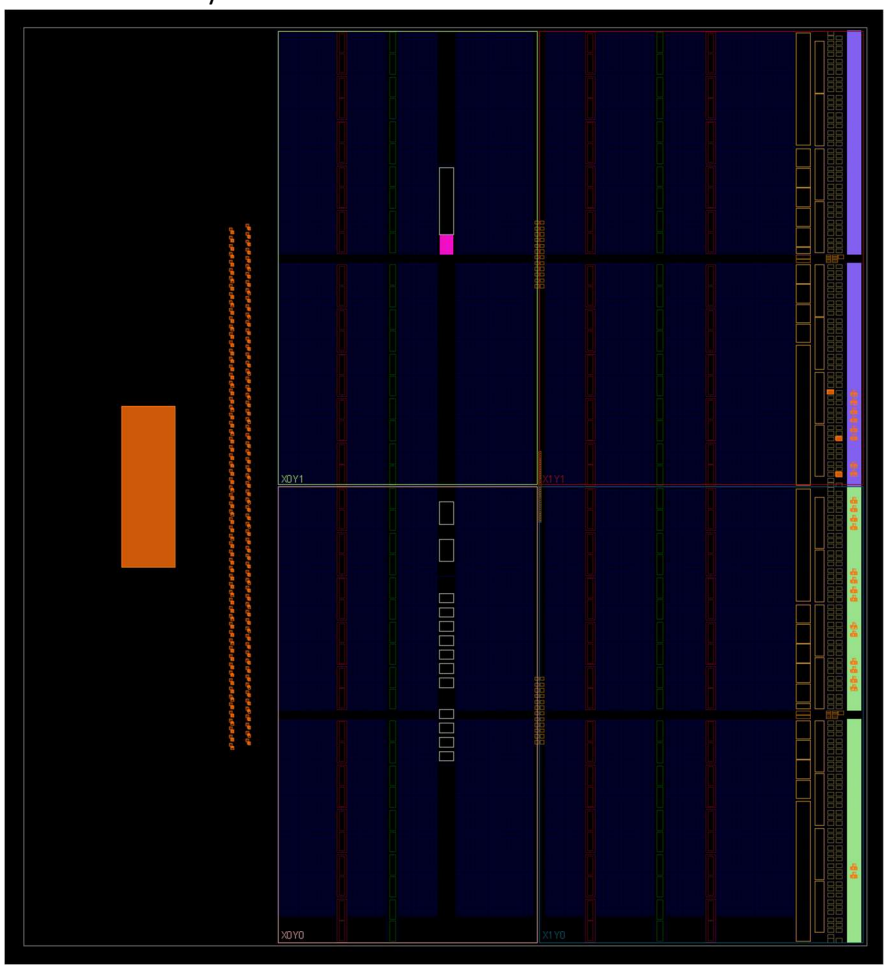
a. Block Design



b. Vivado Elaboration Schematic



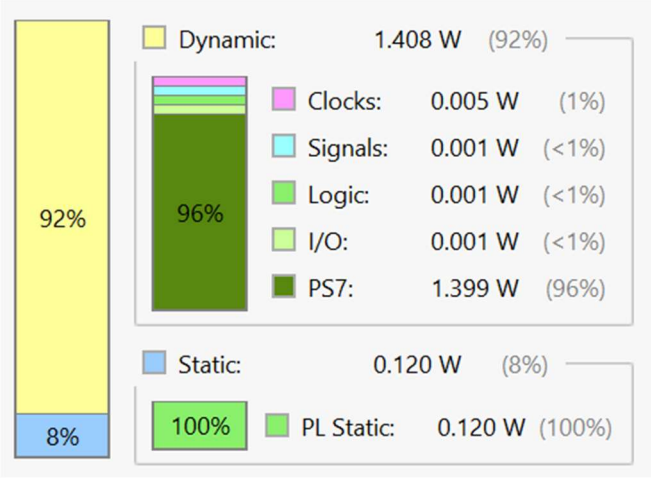
c. Vivado Device Layout



d. Post-Synthesis Utilization Table

Resource	Estimation	Available	Utilization %
IO	24	100	24.00

e. On-chip Power Graphs



Conclusion

I ran into very few major issues with this project. There was a minor hiccup where I was reading 0/0/0000 repeatedly from the RTCC; it was because I had the temperature sensor connected where the RTCC should have gone. Another issue I ran into is that it's actually very difficult to get the real date and time when you're not connected to the internet. But other than that, there's not much to say about this project. It performs well for its intended purpose, which is to display date, time, and temperature.