

- Below shows that successful compilation window for the **light** project. Instead of **Nios_system.v**, the Qsys file is named **unsaved.v** in this project.

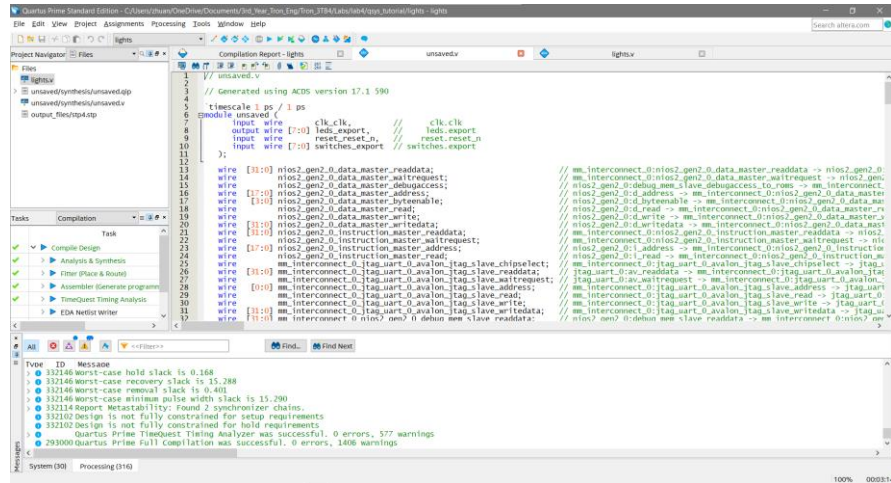


Figure 1: unsaved.v

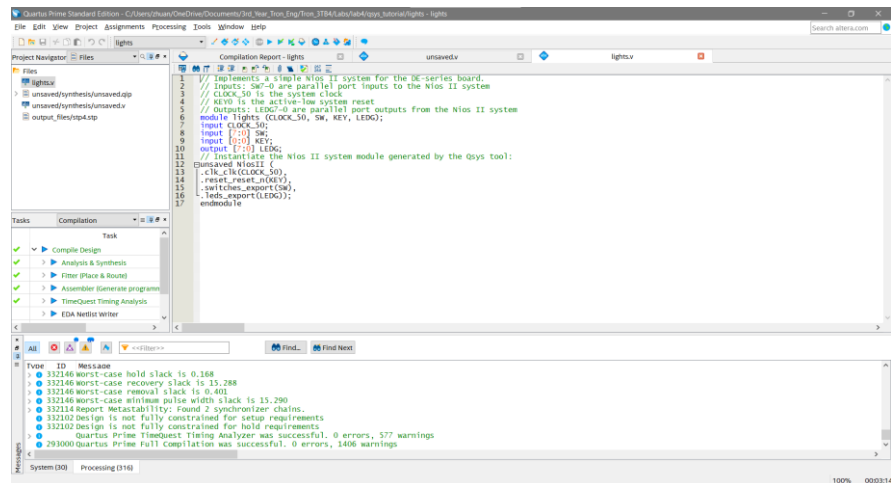


Figure 2: lights.v

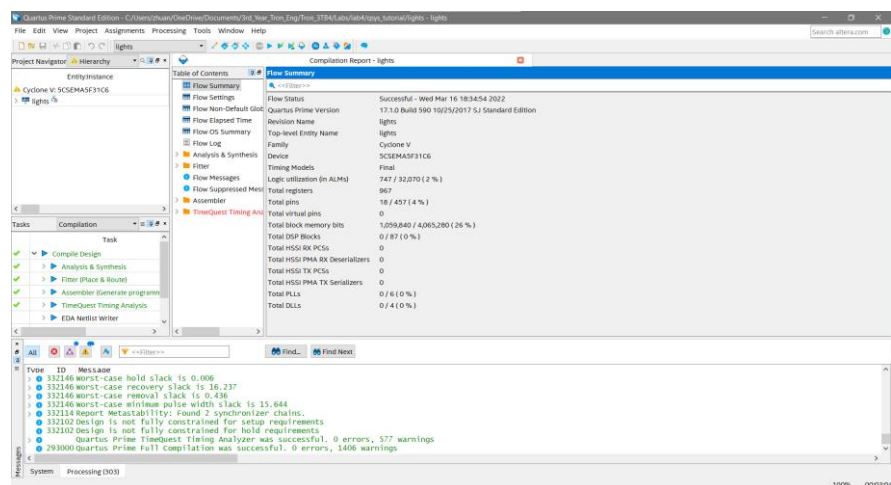


Figure 3: Successful Compilation Window

2.

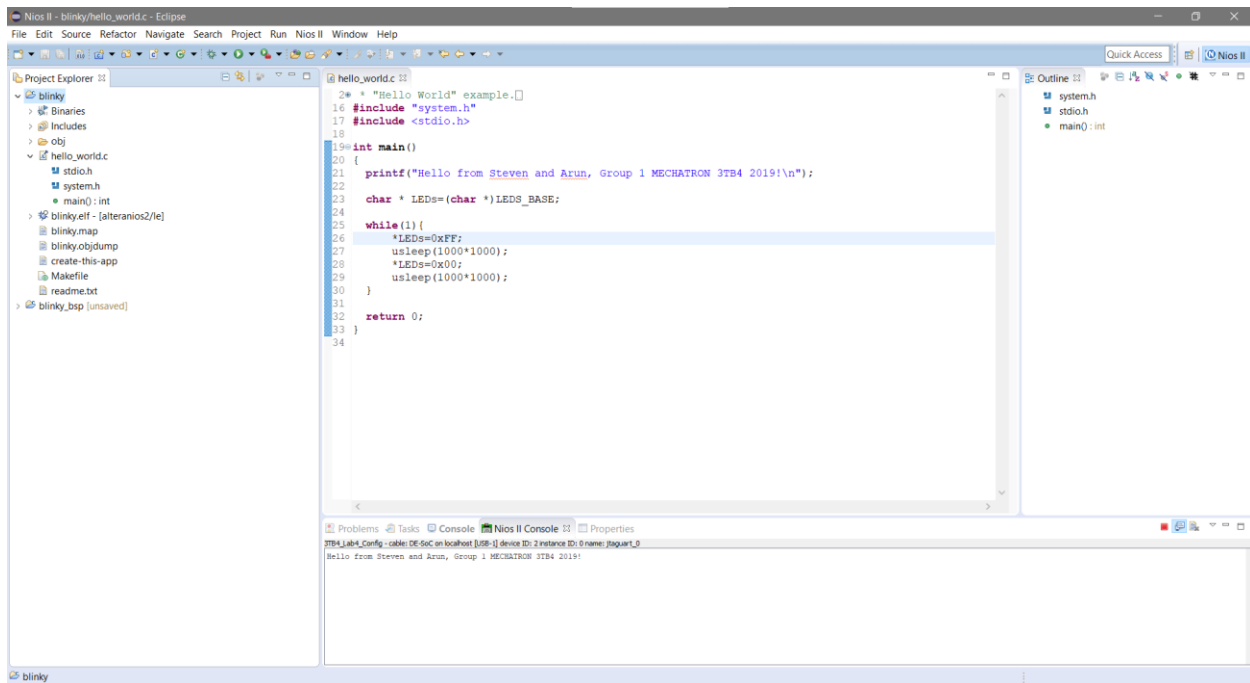


Figure 4: Program Overview

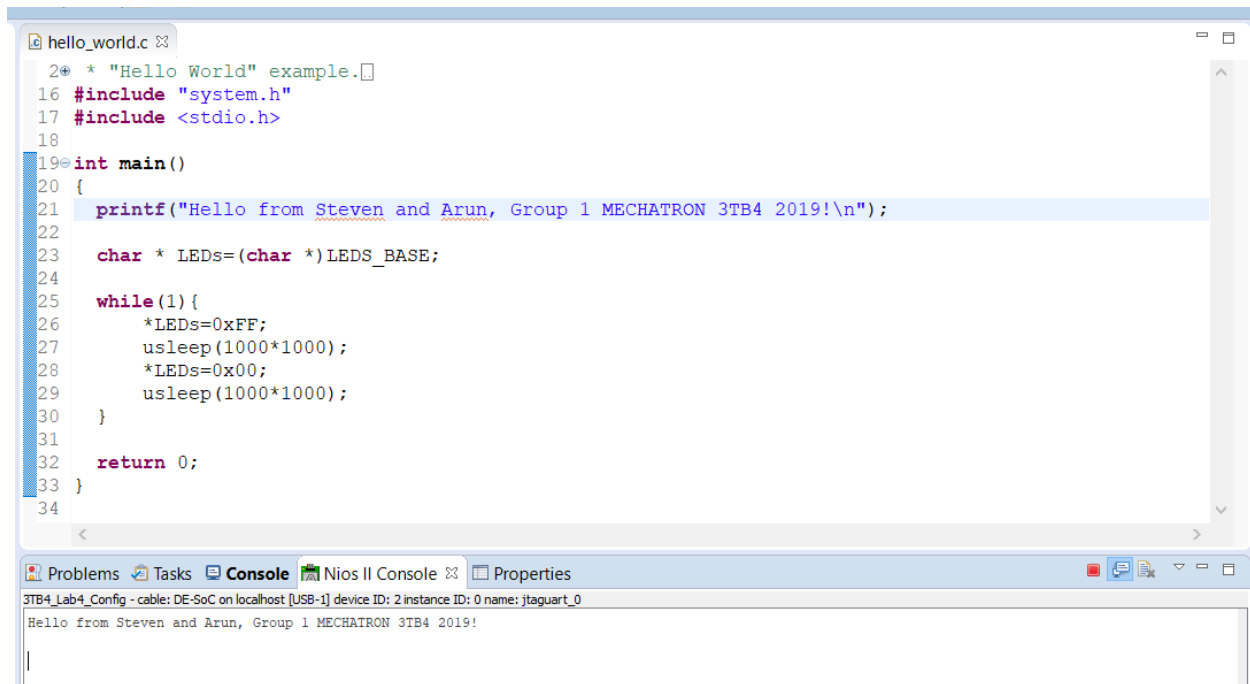


Figure 5: Output Zoomed In

3. Below is the behavior of all the signals **KEY0** is pressed and not pressed. The difference is caused because pressing **KEY0** resets the NiosII blinking program, where the clock signal is cut off and no triggering happens.

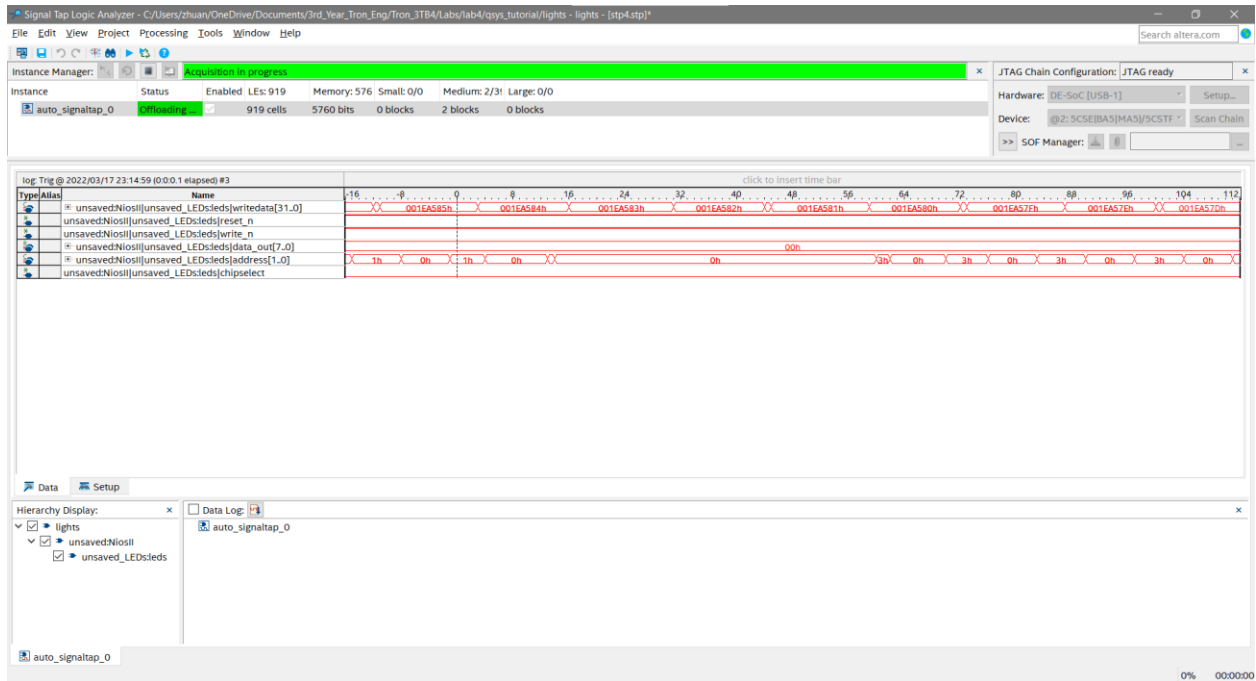


Figure 6: When **KEY0** not pressed, **data_out** stays at 00h and **writedata** toggles with the clock toggling

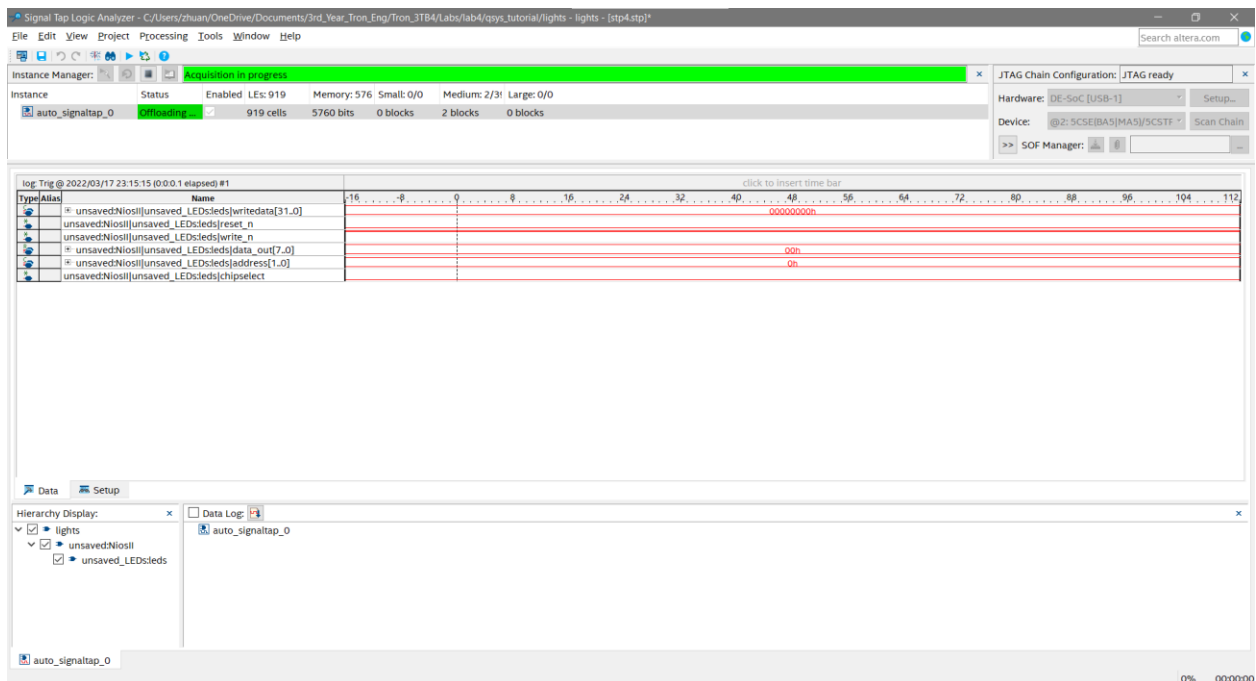


Figure 7: When **KEY0** pressed, **data_out** stays at 00h and **writedata** stays at 00000000h

Questions:

1. The chip processor is the master, as it starts and end all processes. When the processor stops, all other programs are forced stop as well.
2. the following:
 - Quartus acts as the **hardware/software**
 - Qsys acts as the **hardware**
 - Nios Eclipse acts as a **software**
 - signal analyzer acts as a **software/hardware**