1. 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.

Graphical user interface, text, application

Description automatically generated

**Figure 1: unsave.v**

Graphical user interface, text, application

Description automatically generated

**Figure 2: lights.v**

Graphical user interface, text, application, email

Description automatically generated

**Figure 3: Successful Compilation Window**

A computer screen capture

Description automatically generated with medium confidence

**Figure 4: Program Overview**

Graphical user interface, text, application

Description automatically generated

**Figure 5: Output Zoomed In**

1. 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.

Graphical user interface, application

Description automatically generated

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

Graphical user interface, application

Description automatically generated

Figure : 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**