LAB 1

Part 1 – Rotating Dot

In this part, you will modify the rotatingDot.v file given to you so that it synthesizes on Vivado and runs on the FPGA. You are going to be using the led.xdc file to map the signals to the components.

1. Open a New Project and name it “rotatingDot”. Add “rotatingDot.v” and “led.xdc” to the project.
2. The rotatingDot.v has the same design as the slidingDot.v from last week. Modify it so that whenever it reaches the rightmost LED, it starts back at the leftmost LED.
3. Click “Generate Programming File” on the bottom left panel.
4. Get your FPGA and upload your project to the FPGA using the hardware manager.
5. Show us your work.

Part 2 – KnightRider

In this part, you will modify the knightRider.v file given to you so that it synthesizes on Vivado and runs on the FPGA. You are going to be using the led.xdc file again.

1. Open a New Project and name it “knightRider”. Add “knightRider.v” and “led.xdc” to the project.
2. Modify knightRider.v so that it makes LEDs light up from left to right, and when it reaches the rightmost one, it lights them up from right to left, and again, when it reaches the leftmost one, it lights them up from left to right, and so on.
3. Click “Generate Programming File” on the bottom left panel.
4. Get your FPGA and upload your project to the FPGA using the hardware manager.
5. Show us your work.
6. **Zip and upload the .v files from both parts to LMS. Do not forget to name your zip file as your student ID(s).**