Lab 0: FPGA Tutorial and Test-Your-Own-FPGA Demo

Submission Due Dates:
Report: 2025/09/14 23:59

Objective

1. Going through the Vivado tutorial for FPGA implementation.
2. Testing the Basys 3 FPGA board.

Action Items

1 Vivado Tutorial with Rock-Paper-Scissors Game Demo
Follow **Lecture 03 Vivado Tutorial for FPGA Implementation** with the source files in
`lab0_src.zip`.

2 FPGA Board Test with Test-Your-Own-FPGA Demo
Follow **Lecture 03 Vivado Tutorial for FPGA Implementation**. Program the FPGA with
`test.bit` to test the FPGA board: https://youtu.be/My14mllGa24

a. Find the board number on the backside.
b. Check if the Power LED works.
c. Check if the Program LED works.
d. Check if the LEDs (LD15-LD0) and slide switches (SW15-SW0) work well.
e. Check if the 7-segment display works well.
f. Check if the pushbuttons (BTNU, BTND, BTNL, BTNR, BTNC) work well. g.
Complete the checklist in "`lab0_report_template_v1.docx`". h. Confirm
with TA whether if all components function well during the lab demo. i. Submit
the checklist as your Lab 0 report.

Attention

✓ Hand in your report as **lab0_report_StudentID.pdf** (i.e.,
`lab0_report_111456789.pdf`).
✓ You do not need to upload any source code in Lab 0.
✓ Note: If you fail to complete Lab 0, you will get a zero score for all the lab assignments.
✓ Note: Test the FPGA board carefully. Report to TA immediately if there is any problem!