**EECE 343 Computer Interface Circuits**

**Lab 10**

**PS2 Keyboard**

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**Objectives**

The purpose of this exercise is to learn how to design a keyboard that scans code and displays the entire scan code string in hexadecimal on the seven-segment displays and a VGA monitor.

**Project**

# Write a VHDL module to read a keyboard scan code and display the entire scan code string in hexadecimal on the seven-segment displays. If you can display the entire scan code string in hexadecimal on the VGA display using the VGA\_SYNC and CHAR\_ROM UP1 cores, then you will earn extra credit for doing that.

**Procedure**

Perform the following steps to implement a circuit for the project on the DE2 board.

1. Create a new Quartus II project for your circuit. If using the Altera DE2 board, select Cyclone II EP2C35F672C6 as the target chip, which is its FPGA chip.
2. Create a VHDL entity for the code of the lab project.
3. Include in your project the required pin assignments for the DE2-series board, as discussed above. Compile the project.
4. Download the compiled circuit into the FPGA chip.
5. Connect PS2 keyboard and VGA monitor to the DE2 board.
6. Test the functionality of the circuit.
7. Turn in your lab report on the day you demonstrate your project in class.