

# Lab Six: Special Projects

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**Abstract**—A number of projects are offered for a student to choose for a capstone project for a introductory logic course. These examples leverage a number of offerings from the Altera University Program tutorials for the DE0-Nano development board.

## I. INTRODUCTION

**T**HIS Lab allows the student to exercise some design liberty. A number of example projects will be provided but you are free to choose something of your own. The student could implement a communication protocol to one of the on board devices like the accelerometer.

### A. Using paramaterized modules

Often a designer will not be required to reinvent the wheel during development. “IP” or intellectual property can be used to expediate design. These modules can be very complex like full processors or simple like a shift register, they can be very expensive or free of charge. Altera provides a number of paramterized modules free of charge with [a tutorial on how to use them](#)

## II. LAB PROCEDURE

A. Using the on board ADC

B. Using the on board Accelerometer

C. Implement a NIOSII softprocessor

D. Implement a Bitcoin miner

## III. LAB REPORT

## IV. CONCLUSION