

University of North Texas
Department of Electrical Engineering
EENG 2910 Project III – Digital System Design
Project 7

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Due date: **November 2nd**

Before you embark on the implementation of the simple processor, read the documents titled “SimpleProcessor” and “SimpleProcessorInstSet” to provide answers to the items below. Only one submission is required per team.

1. What are the system requirements?
2. What are the functional blocks required?
3. What is the size of each of your instructions?
4. What all controls (e.g. Load address, Load Data, Start, Reset, *etc.*), inputs and outputs can you have on the Basys2 board. *For example toggle switches may be used for providing system inputs (control or data).*
5. Provide a high-level block diagram/architecture of the simple processor and its main components.
6. Prepare a table of the following instructions: CLEAR (you can subtract a register from itself to clear it), INCREMENT, ROTATE, ADD, SUBTRACT and MOVE using the basic instructions in Table-1 and CC bit information in Table-2 (refer to “SimpleProcessorInstSet”). Many powerful arithmetic and logical instructions can be constructed using these 2 tables.