ClockMaster

User Guide

TÉCNICO LISBOA

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Group 4

Pedro Santos, n93892

Sara Soares, n87737

Professor Jos Teixeira de Sousa

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1 Introduction

The Basys2 Figure 1, board is a circuit design and implementation platform that anyone can use to gain experience building real digital circuits. Built around a Xilinx Spartan-3E Field Programmable Gate Array and a Atmel AT90USB2 USB controller, the Basys2 board provides complete, ready-to-use hardware suitable for hosting circuits ranging from basic logic devices to complex controllers.

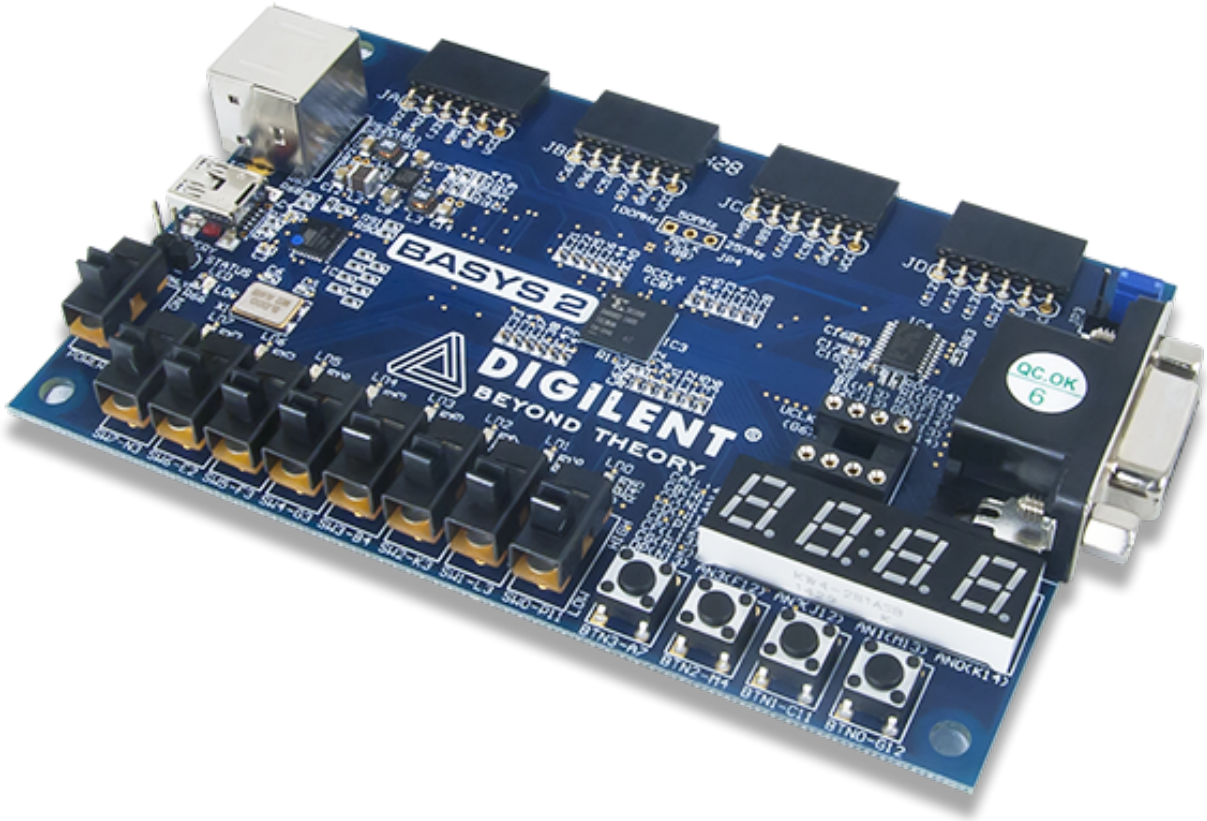

Figure 1: Basys 2 board

Our project uses the Basys2 to make a clock with some features. We propose to use 7 segment dislay as output and the push buttons to set the time and navigate through the menus.

2 Block Diagram

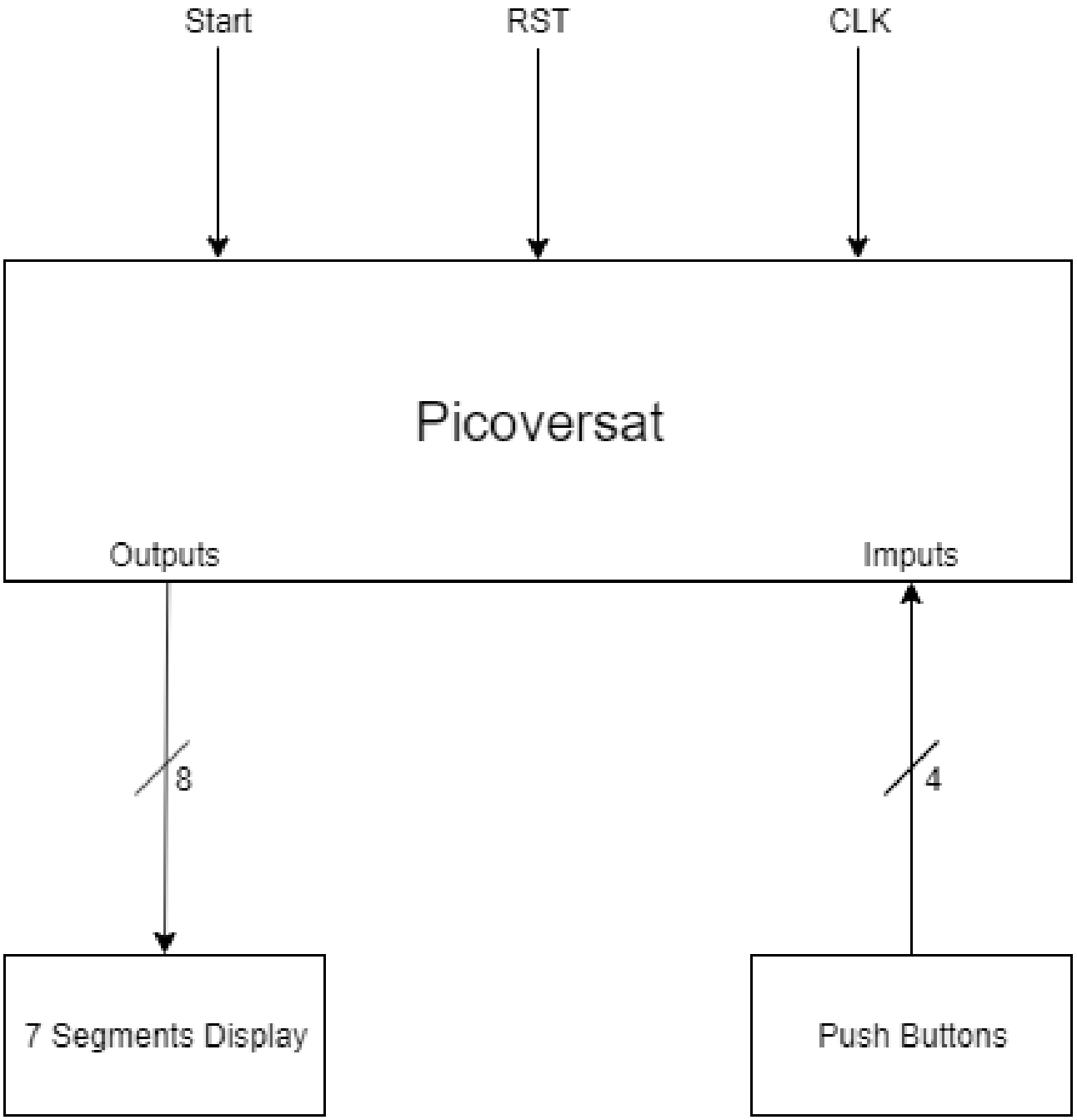

Figure 2: Block diagram

3 Peripherals

The Basys2 has manny peripherals options such as: -7-segments display -on/off switch -push buttons -VGA port -PS/2 port -6-pin headers

3.1 Peripherals Used

The peripherals that we will de using are the 7-segments display and the push buttons.

3.2 7-Segments Display

Table 1: 7-Segments Display.

Name	Address	Bits	Description
DISPLAY_BASE	768	11:0	4 7-segments display with 8 bits[7:0] for each display and 4 bits[11:8] to select the display

3.3 Push Buttons

Table 2: Push Buttons.

Name	**Address**	**Bits**	**Description**
BUTTON_BASE	530	3:0	Reset, mode, set hours and set minutes buttons

4 Instructions

4.1 Clock

The ClockMaster will have the function to show the time in the 7 segment dislay. With the help of the push buttons we will be able to set the time correctly.

4.2 Counter

The Counter is a feature that we can set a desired value and counts until reach that value.

4.3 Timer

This feature use a previously entered value and stop counting when it reaches 0.

5 Implementation Results

6 Conclusions