

First we have the components the keypad the h-bridge(motor driver) and motor and breadbord, we connected the keypad as an input to the fpga and the pins used for this connection are connected according to the datasheet

,next we connected the sensor to the fpga using three pins one for the ground one for the vc and one is the output for the sensor that gives the signal of zero when something is

infront of it and the signal of 1 when nothing is infront of it.After that we need from the h-bridge 5 connections ,two of which will be used for the motor to give voltage to the

motor,the other

three :one will be connected to the ground, one will be connected to the vcc from the fpga, and the last one has a pin that is from one end connected to a pin in fpga and

the other pin is connected to the h-bridge 5 volt which

will make the motor turn on based on our VHDL code.

motor drive controls speed and direction of motor.

IN/OUT	EXPLANATION
--------	-------------

motor:	OUTPUT TO THE MOTOR
--------	---------------------

sensor:	INPUT TO OUR FPGA
---------	-------------------

row_line:	THIS IS AN OUTPUT OF THE KEYPAD ROWS
-----------	--------------------------------------

col_line:	THIS IS AN INPUT OF THE COLUMNS OF THE KEYPAD
-----------	---

sevensseg:	THIS IS THE FIRST SEGMENT DIPLAY
------------	----------------------------------

sevensseg2:	THIS IS THE SECOND SEGMENT DIPLAY
-------------	-----------------------------------

sevensseg3:	THIS IS THE THIRD SEGMENT DIPLAY
-------------	----------------------------------

sevensseg4:	THIS IS THE FOURTH SEGMENT DIPLAY
-------------	-----------------------------------

sevensseg5: THIS IS THE FIFTH SEGMENT DIPLSLAY

sevensseg6: THIS IS THE SIXTH SEGMENT DIPLSLAY

n : ADDITIONAL WE WERE TESTING ON

col_line[3] Input PIN_W11

col_line[2] Input PIN_AA10

col_line[1] Input PIN_Y8

col_line[0] Input PIN_Y7

motor OutputPIN_W5

n[1] Input PIN_T21

n[0] Input PIN_E1

row_line[3] Output PIN_AA15

row_line[2] Output PIN_W13

row_line[1] Output PIN_AB13

row_line[0] Output PIN_Y11

sensor Input PIN_AA14

sevensseg[0] Output PIN_C14

sevensseg[1] Output PIN_E15

sevensseg[2] Output PIN_C15

sevensseg[3] Output PIN_C16

sevensseg[4] Output PIN_E16

sevensseg[5] Output PIN_D17

sevenseg[6]	Output PIN_C17
sevenseg2[0]	Output PIN_C18
sevenseg2[1]	Output PIN_D18
sevenseg2[2]	Output PIN_E18
sevenseg2[3]	Output PIN_B16
sevenseg2[4]	Output PIN_A17
sevenseg2[5]	Output PIN_A18
sevenseg2[6]	Output PIN_B17
sevenseg3[0]	Output PIN_B20
sevenseg3[1]	Output PIN_A20
sevenseg3[2]	Output PIN_B19
sevenseg3[3]	Output PIN_A21
sevenseg3[4]	Output PIN_B21
sevenseg3[5]	Output PIN_C22
sevenseg3[6]	Output PIN_B22
sevenseg4[0]	Output PIN_F21
sevenseg4[1]	Output PIN_E22
sevenseg4[2]	Output PIN_E21
sevenseg4[3]	Output PIN_C19
sevenseg4[4]	Output PIN_C20
sevenseg4[5]	Output PIN_D19
sevenseg4[6]	Output PIN_E17
sevenseg5[0]	Output PIN_F18
sevenseg5[1]	Output PIN_E20
sevenseg5[2]	Output PIN_E19
sevenseg5[3]	Output PIN_J18
sevenseg5[4]	Output PIN_H19
sevenseg5[5]	Output PIN_F19
sevenseg5[6]	Output PIN_F20

sevensseg6[0]	Output PIN_J20
sevensseg6[1]	Output PIN_K20
sevensseg6[2]	Output PIN_L18
sevensseg6[3]	Output PIN_N18
sevensseg6[4]	Output PIN_M20
sevensseg6[5]	Output PIN_N19
sevensseg6[6]	Output PIN_N20