

PLAZA, ELMO L.

BSCpE 3-A

## 21. VHDL CODE FOR RELAY INTERFACE

library IEEE;

use IEEE.STD\_LOGIC\_1164.ALL;

entity relay is

Port (

sw : in STD\_LOGIC; -- Switch input

rl1 : out STD\_LOGIC; -- Relay output

led : out STD\_LOGIC -- LED output

);

end relay;

PIN ASSIGNMENT

XC3128TQ144		
Connector	Device pin	Property
P 18/3	41	Sw
P 18/5	43	RL1
P 18/21	62	Led

XC2S100TQ144-5		
Connector	Device pin	Property
P 18/3	1	Sw
P 18/5	5	RL1
P 18/21	23	Led

architecture Behavioral of relay is

begin

rl1 <= sw;

led <= sw;

end Behavioral;

The screenshot displays the Intel Quartus II software interface. The main window shows the VHDL code for the 'relay' entity, which is defined with three ports: 'sw' (input), 'rl1' (output), and 'led' (output). The code is as follows:

```
1 library IEEE;
2 use IEEE.STD_LOGIC_1164.ALL;
3
4 entity relay is
5     Port (
6         sw : in STD_LOGIC; -- Switch input
7         rl1 : out STD_LOGIC; -- Relay output
8         led : out STD_LOGIC -- LED output
9     );
10
11 end relay;
12
13 architecture Behavioral of relay is
14 begin
15     rl1 <= sw;
16     led <= sw;
17 end Behavioral;
```

The left pane shows the 'Project Navigator' with the 'stopwatch.vhd' file selected. The bottom pane shows the 'Programmer' window, which is configured for the 'USB-Blaster [USB-0]' device. The 'Progress' bar indicates that the programming is 100% successful. The 'Device' field shows 'EP4CE6E22'.