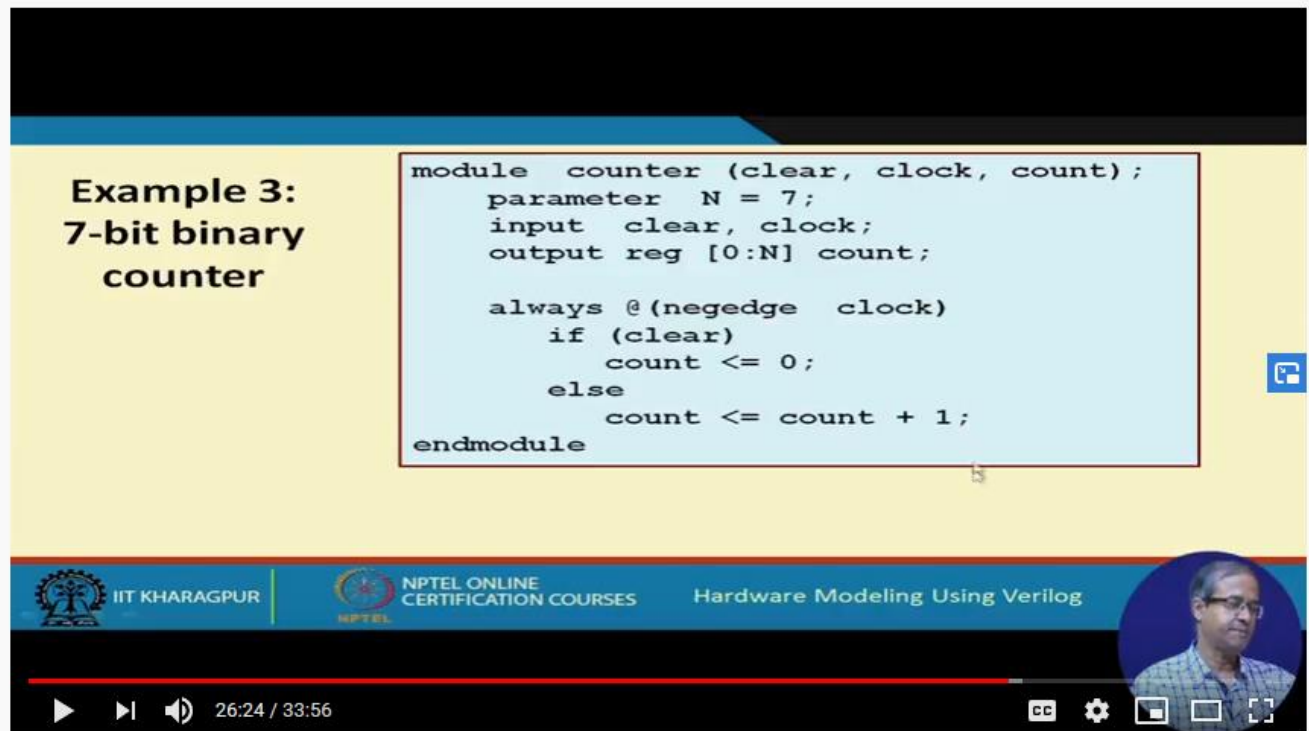


DAILY ASSESSMENT FORMAT

Date:	02/06/2020	Name:	Nishanth
Course:	DIGITAL DESIGN USING HDL	USN:	4a117ec063
Topic:	1.FPGA Basics: Architecture, Applications and Uses 2. Verilog HDL Basics by Intel 3. Verilog Testbench code to verify the design under test (DUT)	Semester & Section:	6 th b-section
GitHub Repository:	nishanthvr		

FORENOON SESSION DETAILS

Image of session:



WRITING VERILOG TEST BENCHES

FPGA :

The **field-programmable gate array (FPGA)** is an integrated circuit that consists of internal hardware blocks with user-programmable interconnects to customize operation for a specific application. The interconnects can readily be reprogrammed, allowing an FPGA to accommodate changes to a design or even support a new application during the lifetime of the part.

FPGA Applications

Many applications rely on the parallel execution of identical operations; the ability to configure the FPGA's CLBs into hundreds or thousands of identical processing blocks has applications in image processing, artificial intelligence (AI), data center hardware accelerators, enterprise networking and automotive advanced driver assistance systems (ADAS).

Task:

```
module mux41(  
    input i0,i1,i2,i3,sel0,sel1,  
    output reg y);
```

always @(*) //It includes all Inputs. You can use this instead of specifying all inputs in //sensitivity list. Verilog-2001 Feature

```
    begin  
        case ({sel0,sel1})  
            2'b00 : y = i0;  
            2'b01 : y = i1;  
            2'b10 : y = i2;  
            2'b11 : y = i3;  
        endcase  
    end
```

```
endmodule
```

TestBench

```
module tb_mux41;
```

```
    reg I0,I1,I2,I3,SEL0,SEL1;  
    wire Y;
```

```
    mux41 MUX (.i0(I0),.i1(I1),.i2(I2),.i3(I3),.sel0(SEL0),.sel1(SEL1),.y(Y));
```

```
    initial begin
```

```
        I0 = 1'b0;  
        I1 = 1'b0;  
        I2 = 1'b0;  
        I3 = 1'b0;  
        SEL0 = 1'b0;  
        SEL1 = 1'b0;  
        #45 $finish;
```

```
    end
```

```
    always #2 I0 = ~I0;
```

```
    always #4 I1 = ~I1;
```

```
    always #6 I2 = ~I1;
```

```
    always #8 I3 = ~I1;
```

```
    always #3 SEL0 = ~SEL0;
```

```
    always #3 SEL1 = ~SEL1;
```

always @(Y)

$$\text{\$display("time =\%0t INPUT VALUES: \t I0=\%b I1 =\%b I2 =\%b I3 =\%b SEL0 =\%b SEL1 =\%b \t output value Y =\%b ",\$time,I0,I1,I2,I3,SEL0,SEL1,Y);}$$

endmodule

output

time =0 INPUT VALUES:	I0=0 I1 =0 I2 =0 I3 =0 SEL0 =0 SEL1 =0	output value Y =0
time =2 INPUT VALUES:	I0=1 I1 =0 I2 =0 I3 =0 SEL0 =0 SEL1 =0	output value Y =1
time =3 INPUT VALUES:	I0=1 I1 =0 I2 =0 I3 =0 SEL0 =1 SEL1 =1	output value Y =0
time =6 INPUT VALUES:	I0=1 I1 =1 I2 =0 I3 =0 SEL0 =0 SEL1 =0	output value Y =1
time =8 INPUT VALUES:	I0=0 I1 =0 I2 =0 I3 =0 SEL0 =0 SEL1 =0	output value Y =0
time =14 INPUT VALUES:	I0=1 I1 =1 I2 =1 I3 =0 SEL0 =0 SEL1 =0	output value Y =1
time =15 INPUT VALUES:	I0=1 I1 =1 I2 =1 I3 =0 SEL0 =1 SEL1 =1	output value Y =0

Date: 02/06/2020

Course: Python

1.Interactive Data Visualization with Bokeh

2. Webscraping with Python

Name:

USN:

Semester & Section:

Nishanth

4al17ec063

6th and b section

AFTERNOON SESSION DETAILS

Image of session

The screenshot displays a Jupyter Notebook interface within a web browser. The notebook is titled 'Basic graph' and contains Python code for plotting data using Bokeh. The code defines a function to plot data points and includes a Bokeh server command. The interface shows the course title 'Build 10 Real World Applications' and a list of course content items on the right.

Course content

- Section 28: Interactive Data Visualization with Bokeh (15 / 17 | 58min)
- 226. Introduction to Bokeh (2min)
- 227. Installing Bokeh (1min)
- 228. Your First Bokeh Plot (14min)
- 229. Plotting Triangles and Circle Glyphs (Practice) (1min)
- 230. Solution (1min)
- 231. Using Bokeh with Pandas (5min)
- 232. Plotting Education Data (Practice) (1min)

About this course

A complete Python course for both beginners and intermediates! Master Python 3 by making 10 amazing Python apps.

Plotting Triangles and Circle Glyphs (Practice)

code:

```
from bokeh.plotting import figure
```

- `from bokeh.io import output_file, show`
- `import pandas`
-
- `#prepare some data`
- `df=pandas.read_csv("http://pythonhow.com/data/bachelors.csv")`
- `x=df["Year"]`
- `y=df["Engineering"]`
-
- `#prepare the output file`
- `output_file("Line_from_bachelors.html")`
-
- `#create a figure object`
- `f=figure()`
-
- `#create line plot`
- `f.line(x,y)`
-
- `#write the plot in the figure object`
- `show(f)`