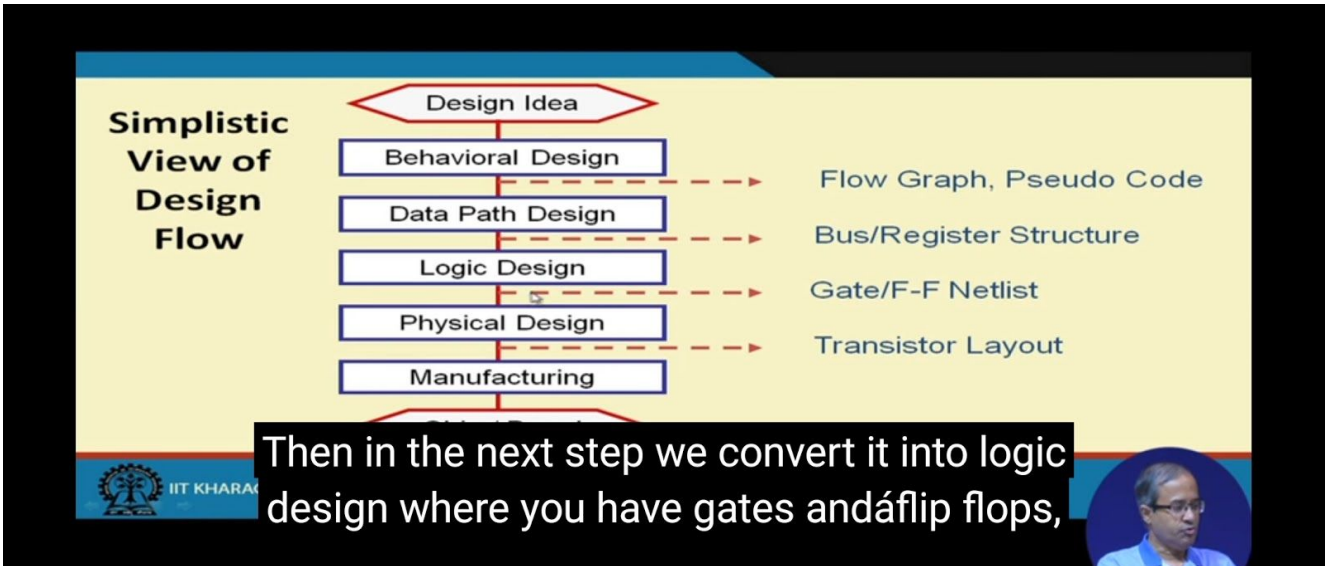
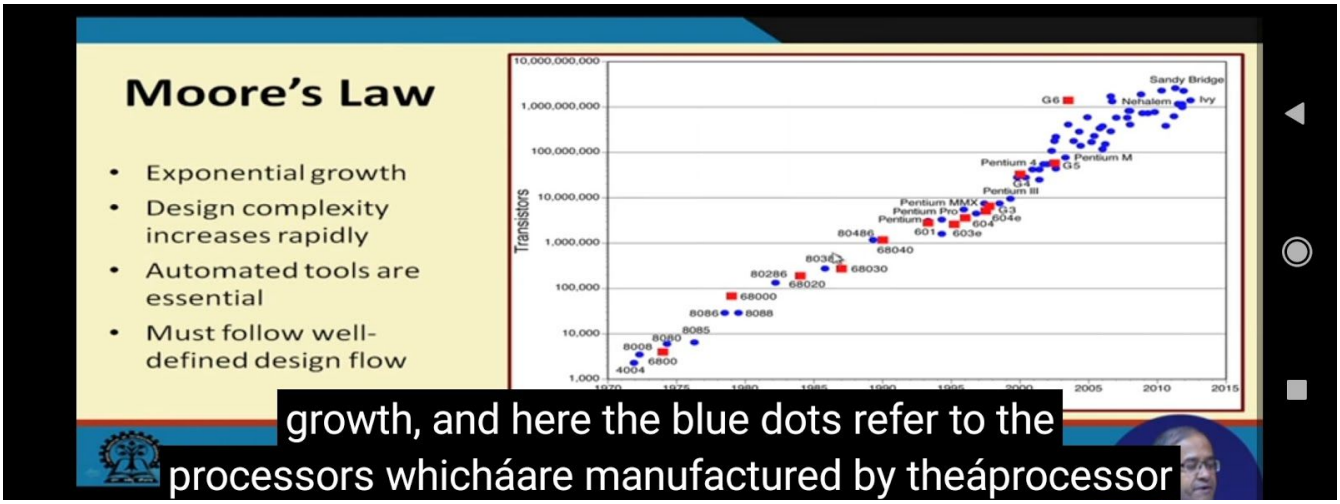
DAILY ASSESSMENT FORMAT

Date:	**4-06-2020**	**Name:**	**MOUNITHA D M**
Course:	**DIGITAL DESIGN USING HDL**	**USN:**	**4AL17EC055**
Topic:	**Hardware modelling using verilog FPGA AND ASIC Interview Question**	**Semester & Section:**	**6TH SEM "A" SEC**
Github Repository:	**Mounitha_-ec055**		

FORENOON SESSION DETAILS

Image of session





asic.co.in/Index_files/verilog_

Verilog interview Questions & answers for FPGA & ASIC.

Verilog interview Questions

Verilog interview Questions page 1 | Verilog interview Questions Page 2
Verilog interview Questions page 3 | Verilog interview Questions page 4

Ads by Google: Verilog Examples | Verilog Simulator | Verilog HDL

1) Write a verilog code to swap contents of two registers with and without a temporary register?

With temp reg ;

```
always @ (posedge clock)
begin
temp=b;
b=a;
a=temp;
end
```

Without temp reg;

```
always @ (posedge clock)
begin
a <= b;
b <= a;
end
```

Click to view more

3) Difference between task and function?

Function:
A function is unable to enable a task howeve
functions can enable other functions.
A function will carry out its required duty in
zero simulation time. (The program time wil
not be incremented during the function
routine)
Within a function, no event, delay or timing
control statements are permitted
In the invocation of a function their must be
at least one argument to be passed.
Functions will only return a single value and
can not use either output or inout statement

Tasks:
Tasks are capable of enabling a function as
well as enabling other versions of a Task
Tasks also run with a zero simulation
however they can if required be executed in
non zero simulation time.
Tasks are allowed to contain any of these
statements.
A task is allowed to use zero or more
arguments which are of type output, input o
inout.
A Task is unable to return a value but has th
facility to pass multiple values via the outpu
and inout statements .

4) Difference between inter statement and

Report – Report can be typed or hand written for up to two pages.

Day 4 Digital Design using HDL 4/06/2020

Hardware Modelling using verilog

→ Learn about the verilog hardware description language
→ understand the difference between behavioral and structural design
→ Learn to write test benches and analyze simulation results
→ Distinguish between good and bad coding practices

VLSI Design process

→ Design complexity increasing rapidly
→ Increased size and complexity
→ Fabrication technology improving
→ CAD tools are essential
→ The present trend
  → Standardize the design flow
  → Emphasis on low power design, and increased performance
→ Need to use computer Aided Design (CAD) tools
→ Based on Hardware Description language (HDL)
→ HDLs provide formats for representing the outputs of various design steps
→ A CAD tool transforms its HDL input into a HDL output that contains more detailed information about the hardware
  • Behavioral level to register transfer level
  • Register transfer level to gate level
  • Transistor level to the layout level.

Two competing HDLs

1. Verilog
2. VHDL

Designers typically using HDLs, which go from one level of abstraction to the next

Data path design

→ Generate a netlist of register transfer level components like registers, adders, multipliers, multiplexers, decoders etc

A netlist is a directed graph, where the vertices indicate components and the edge indicate interconnection

A netlist Specification is also referred to as Structural design

Netlist may be specified at various levels, where the components may be functional modules.

Physical design and Manufacturing

Generate final layout that can be sent for fabrication

The layout contains a large number of regular geometric shapes corresponding to the different fabrication layers.

Other steps in the Design Flow

Simulation for verification

Formal verification

Testability analysis the manufated device

Write a verilog code to swap contents of two registers with and without a temporary register?

```
with temp reg;
always @(posedge clock)
begin
temp = b;
 b = a;
 a = temp;
 End
 without temp reg;
 always @(posedge clock)
 begin
 a<=b
```

Task : Implement a simple T flip flop and test the module using a compiler

```
module tff (input clk, input rstn, input t, output reg q);
always @ (posedge clk)
begin
if (!rstn)
q <= 0
else
  if(t)
q <= ~q;
else
  q <= q;
End
Endmodule.
```

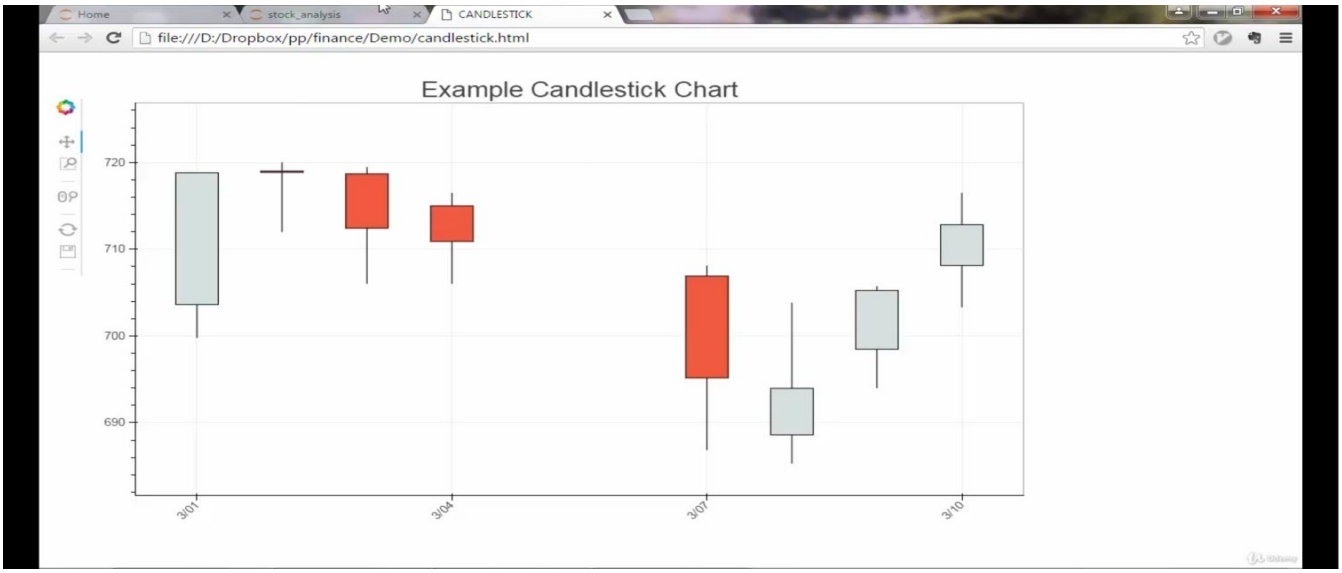
Test bench

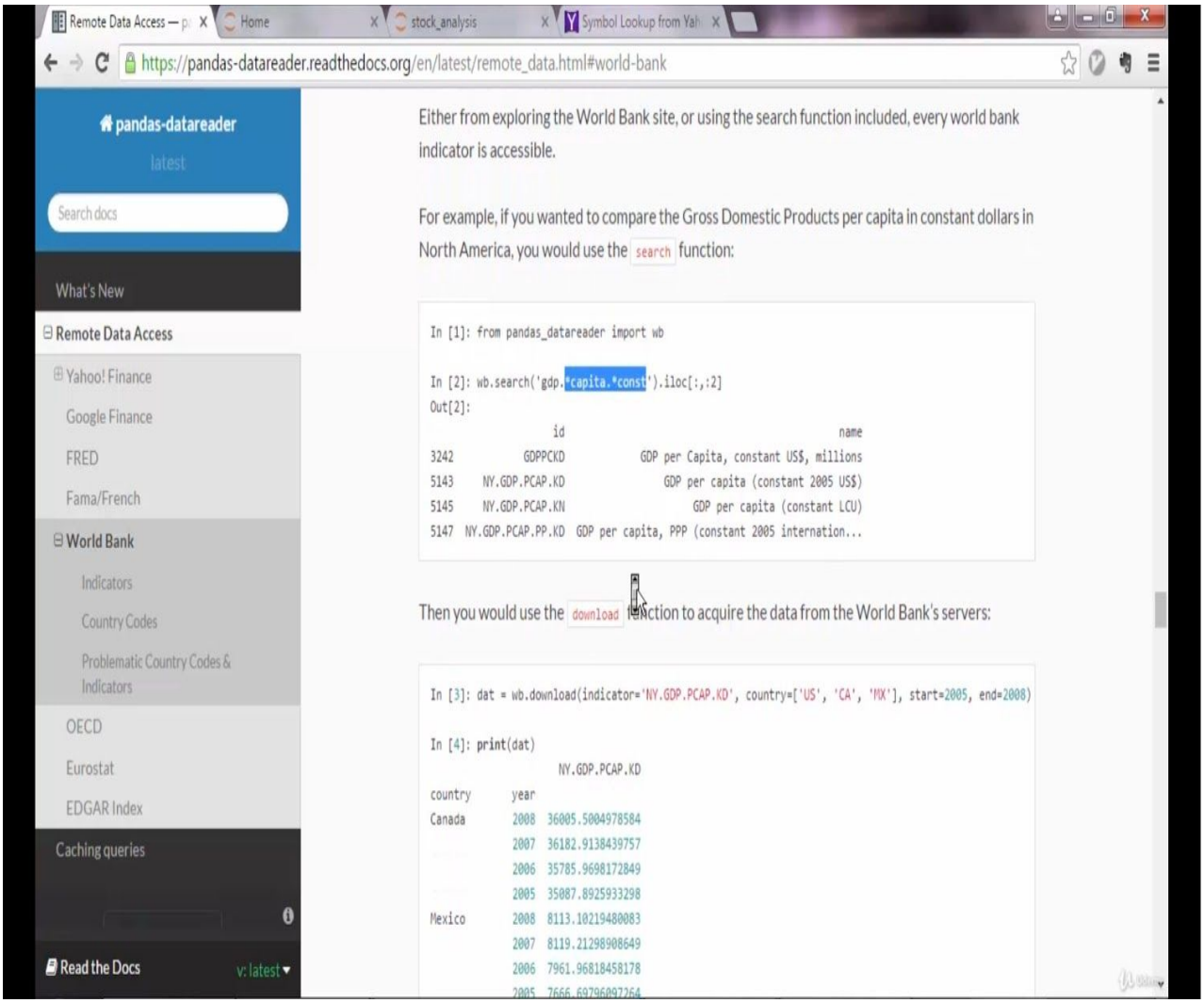
```
module tb;
reg clk
reg rstn
reg t;
tff uo (.clk(clk), .rstn(rstn), .t(t), .q(q));
always #5 clk = ~clk;
initial
begin rstn, clk, t} <= 0;
$monitor ("T = %0t rstn = %0b t = %0d ", $time, rstn, t, q);
repeat(2) @(posedge clk);
rstn <= 1;
for (integer i=0; i<20; i = i+1) begin
reg [4:0] dly = $random;
#(dly) t <= $random;
End
#20 $ finish
End
Endmodule
```

DATE	**4-06-2020**	**Name:**	**MOUNITHA DM**
Course:	**PYTHON**	**USN:**	**4AL17EC055**
Topic:	**Application 8:Build a web-based Financial Graph**	**Semester & Section:**	**6TH SEM "A" SEC**

AFTERNOON SESSION DETAILS

Image of session

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latest
Search docs
What's New
Remote Data Access
Yahoo! Finance
Google Finance
FRED
Fama/French
World Bank
Indicators
Country Codes
Problematic Country Codes & Indicators
OECD
Eurostat
EDGAR Index
Caching queries
Read the Docs
v: latest
Either from exploring the World Bank site, or using the search function included, every world bank indicator is accessible.
For example, if you wanted to compare the Gross Domestic Products per capita in constant dollars in North America, you would use the search function:
In [1]: from pandas_datareader import wb
In [2]: wb.search('gdp.*capita.*const').iloc[:,:2]
Out[2]:
id name
3242 GDPPCKD GDP per Capita, constant US$, millions
5143 NY.GDP.PCAP.KD GDP per capita (constant 2005 US$)
5145 NY.GDP.PCAP.KN GDP per capita (constant LCU)
5147 NY.GDP.PCAP.PP.KD GDP per capita, PPP (constant 2005 internation...
Then you would use the download function to acquire the data from the World Bank's servers:
In [3]: dat = wb.download(indicator='NY.GDP.PCAP.KD', country=['US', 'CA', 'MX'], start=2005, end=2008)
In [4]: print(dat)
NY.GDP.PCAP.KD
country year
Canada 2008 36005.5004978584
2007 36182.9138439757
2006 35785.9698172849
2005 35087.8925933298
Mexico 2008 8113.10219480083
2007 8119.21298908649
2006 7961.96818458178
2005 7666.69796097264

Lectures More

Section 31 - Application 9: Build a Web-based Financial ...

246 Web-based Financial Graph - How...
Video - 01:59 mins - Resources (1)

247 Downloading Datasets with Python
Video - 11:32 mins

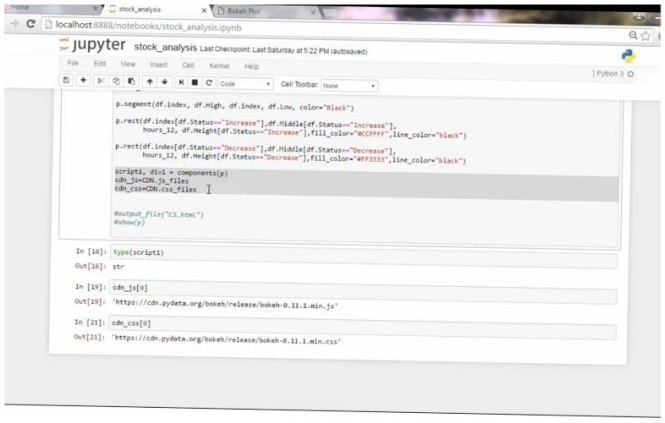
248 Stock Market Data
Video - 03:25 mins

249 Stock Market Data Candlestick Ch...
Video - 05:39 mins

250 Candlestick Charts with Bokeh Quad...
Video - 10:17 mins

251 Candlestick Charts with Bokeh Rect...
Video - 22:28 mins

252 Candlestick Segments
Video - 05:02 mins



Lectures More

250 Candlestick Charts with Bokeh Qu...
Video - 10:17 mins

251 Candlestick Charts with Bokeh R...
Video - 22:28 mins

252 Candlestick Segments
Video - 05:02 mins

253 Stylizing the Chart
Video - 04:24 mins

254 The Concept Behind Embedding Bok...
Video - 11:04 mins

255 Note
Article

256 Embedding the Bokeh Chart in a ...
Video - 15:32 mins

257 Deploying the Chart Website to a Liv...
Video - 08:31 mins - Resources (1)

Report – Report can be typed or hand written for up to two pages.

Day 15 — Python. — 4/06/2020

Application 9: Build a web based Financial Graph.

web based financial Graph

Downloading Datasets with python

```
from pandas_datareader import data
import datetime
data.DataReader(name="AAPL", data_source="yahoo",
start = datetime.datetime
df = data.time.datetime(2016,3,10)
df = data.DataReader(name="AAPL", data_source
    ="Yahoo", start, end = End)
```

Stock Market Data

```
start = datetime.datetime(2016,3,1)
End = datetime.datetime(2016,3,10)
```

Stock Market Data Candlestick

candlestick Charts with Bokeh Quadrantp

```
df.index(df.close>df.open)
datetime Index(['2016-03-01', '2016-03-08', '2016-03-10']
  dtype 'datetime[ns]', name 'Date', freq = 100M
p = figure(x_axis_type = 'datetime', width = 1000
    height = 300)
p.quad
p.quad
```

Candlestick chart with Bokeh Rectangle

```
.rect(df.index[df.close>df.open], (df.open+df.close)/2)
(hours-12, abs(df.open-df.close), fill_color="green",
                line_color="black")
.rect(df.index[df.close<df.open], (df.open+df.close)/2
urs-12, abs(df.open-df.close), fill_colour="red")
                line_color="black")
output_file("cs.html")
```