

## June3 ASSESSMENT

Date:	04/06/20	Name:	Ankitha c c
Course:	Digital designing using hdl	USN:	4al16ec004
Topic:	Hardware modelling using verilog	Semester & Section:	8th & a
Github Repository:	ankitha-course		

### FORENOON SESSION DETAILS

Image of session



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

**Hardware modelling using verilog**

**Main Objectives of the Course**

**Hardware Modeling Using Verilog**

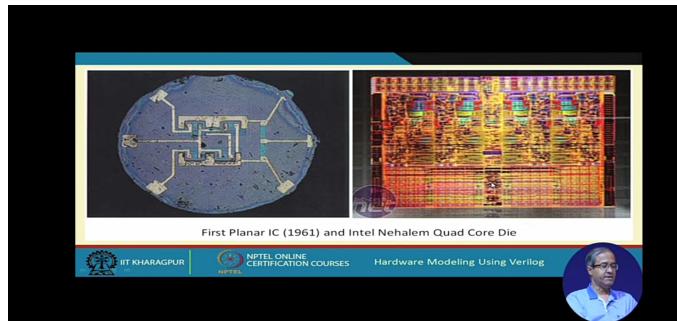
- 1. Learn about the Verilog hardware description language.
- 2. Understand the difference between behavioral and structural design styles.
- 3. Learn to write test benches and analyze simulation results.
- 4. Learn to model combinational and sequential circuits.
- 5. Distinguish between good and bad coding practices.
- 6. Case studies with some complex designs.

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**Vlsi designing flow**



## Semiconductor picture



First Planar IC (1961) and Intel Nehalem Quad Core Die



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## Steps in designing of vlsi

### Steps in the Design Flow

- Behavioral design
  - Specify the functionality of the design in terms of its *behavior*.
  - Various ways of specifying:
    - Boolean expression or truth table.
    - Finite-state machine behavior (e.g. state transition diagram or table).
    - In the form of a high-level algorithm.
  - Needs to be synthesized into more detailed specifications for hardware realization.



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- 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 edges indicate interconnections.
  - A netlist specification is also referred to as *structural design*.
  - Netlist may be specified at various levels, where the components may be functional modules, gates or transistors.
  - Systematically transformed from one level to the next.



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## Other steps in designing of vlsi

### Other Steps in the Design Flow

- Simulation for verification
  - At various levels: logic level, switch level, circuit level
- Formal verification
  - Used to verify the designs through formal techniques
- Testability analysis and Test pattern generation
  - Required for testing the manufactured devices



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## TASK 4

Implement a simple T Flipflop and test the module using a compiler.

```
module tff( input clk,  
           input rsth,
```

```

    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 code

```

module tb;
reg clk;
reg rstn;
reg t;
tff #0 (.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 q=%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: 04/06/20

Name: Ankitha c c

Course: Python

USN: 4al16ec004

Topic: Build a web-based financial graph

Semester & 8th & a  
Section:

#### AFTERNOON SESSION DETAILS

Image of session



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

## Build A Web-based Financial Graph of Share Market

**Abstract:-** The study aims to inspect the stabilities of interactive affinity between search interest of prices of the stock and evident stock market outcomes on worldwide equity market indices. This study represents and develops former exploration into financial graphs by registering the attributes and magnitudes of graph use and embarkment from representational impartiality. Such a paradox could also be derived through investor's behavior and degree of disclosure inclusion. The stock-specific network searches for the progression of data and equivalent index close values from different countries' stock exchanges are collected and analyzed. Previous investigations and studies suggest that graphs are appropriate decision support to tasks related to the understanding of statistical information. Moreover, observations show that different types of pictorial or graphical information can help or harm the accuracy of decision making of accountants and financial analysts. Empirical judgments show global search interests of prices of stock coordinates more with developing economies with lesser effects in south Asian stock exchanges apart from reinforced connections in western countries.

**Keywords** Stock prices, Search trends, Web mining

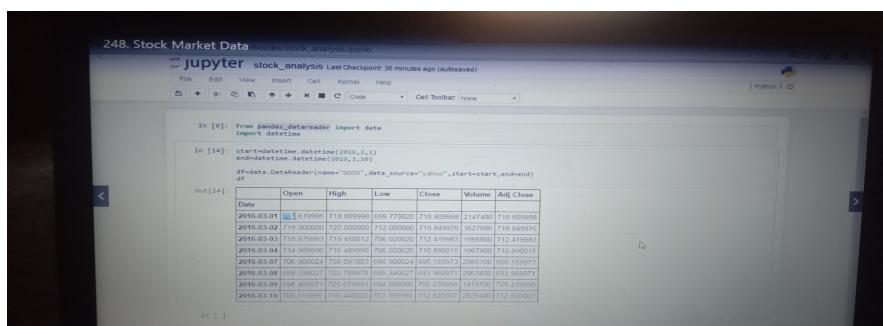
### INTRODUCTION:

Over the years, human endeavors had experienced a series of growth and development attributed to information technology. Web portals are increasing in their everyday use, especially in the education sector. It is often seen that several sites are designed to provide access to information or other sites. In our project, we have designed a dynamic website related to stock market information.

The Stock market process is precarious and is affected by many factors. Hence the Stock market prediction is a strain on business and finance. For the naive investors, it will provide an idea – What's trending in the market and what can be the appropriate time to get into or get out of the market? Considering the risk involved in stock market trading resulting from the volatility which is influenced by several factors across the globe, analyzing the behavior and short term or long-term potential of a company's stocks has been one area of interest of several Data Analysts from a long time now.

Small investors who want to buy shares in a company will make sure that they have done all the research possible to ensure that the stock pick they are interested in will see an increase in price over time. For this, they need to make sure that they look at as much information on the stock as possible. Stock charts/graphs will provide the investor with information on the stock's past trading prices and volumes. Nowadays it has become very difficult for one, who is interested in investing in the company's stocks, how to know whether this is the right time for him/her to buy or sell the shares of the interested company. Our website will provide a general idea to all those investors in a much easier way.

### STOCK MARKET DATA



A screenshot of a Jupyter Notebook interface titled "248. Stock Market Data". The notebook shows code and data output. The code imports pandas and datetime, defines start and end dates, and reads a CSV file into a DataFrame named 'df'. The DataFrame has columns: Date, Open, High, Low, Close, Volume, and Adj Close. The data spans from March 01, 2016, to March 19, 2016, for the stock symbol 'GOOG'. The output shows the first 10 rows of the data frame.

Date	Open	High	Low	Close	Volume	Adj Close
2016-03-01	716.119997	716.809995	709.772002	716.859598	2147400	716.809995
2016-03-02	716.200000	720.000000	712.000000	715.849997	1000000	715.849997
2016-03-03	716.779993	719.450012	706.020002	712.419983	10660000	712.419983
2016-03-04	714.989990	716.489990	705.020020	710.890013	1067500	710.890013
2016-03-07	706.000024	708.091003	696.900024	698.159973	2085100	696.159973
2016-03-08	698.590027	702.759979	695.340027	693.959973	2053400	693.959973
2016-03-09	693.959973	700.000000	689.959973	696.259973	2053400	696.259973
2016-03-10	700.119997	716.440002	703.359987	710.020007	2324000	710.020007

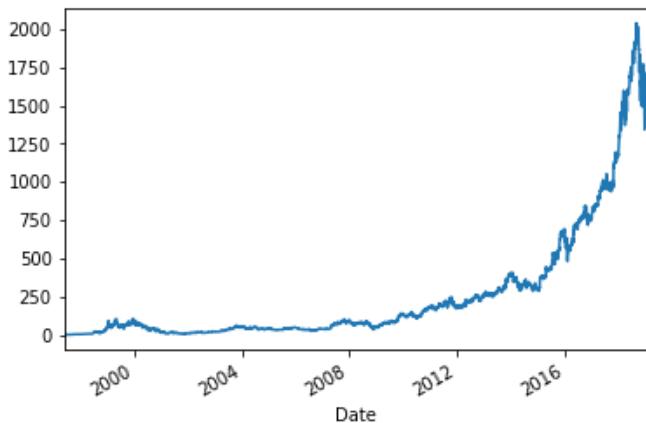
# Yahoo recently has become an unstable data source.

# If it gives an error, you may run the cell again, or try yfinance

```
import pandas as pd  
from pandas_datareader import data  
  
# Set the start and end date  
  
start_date = '1990-01-01'  
end_date = '2019-02-01'  
  
# Set the ticker  
  
ticker = 'AMZN'  
  
# Get the data  
  
data = data.get_data_yahoo(ticker, start_date, end_date)  
data.head()
```

To visualize the adjusted close price data, you can use the matplotlib library and plot method as shown below.

```
import matplotlib.pyplot as plt  
%matplotlib inline  
data['Adj Close'].plot()  
plt.show()
```



#### Note

Depending on your version of Bokeh, you may get an IndexError: list index out of range error in the next video. If that is the case please see this thread here on how to easily fix the issue.

