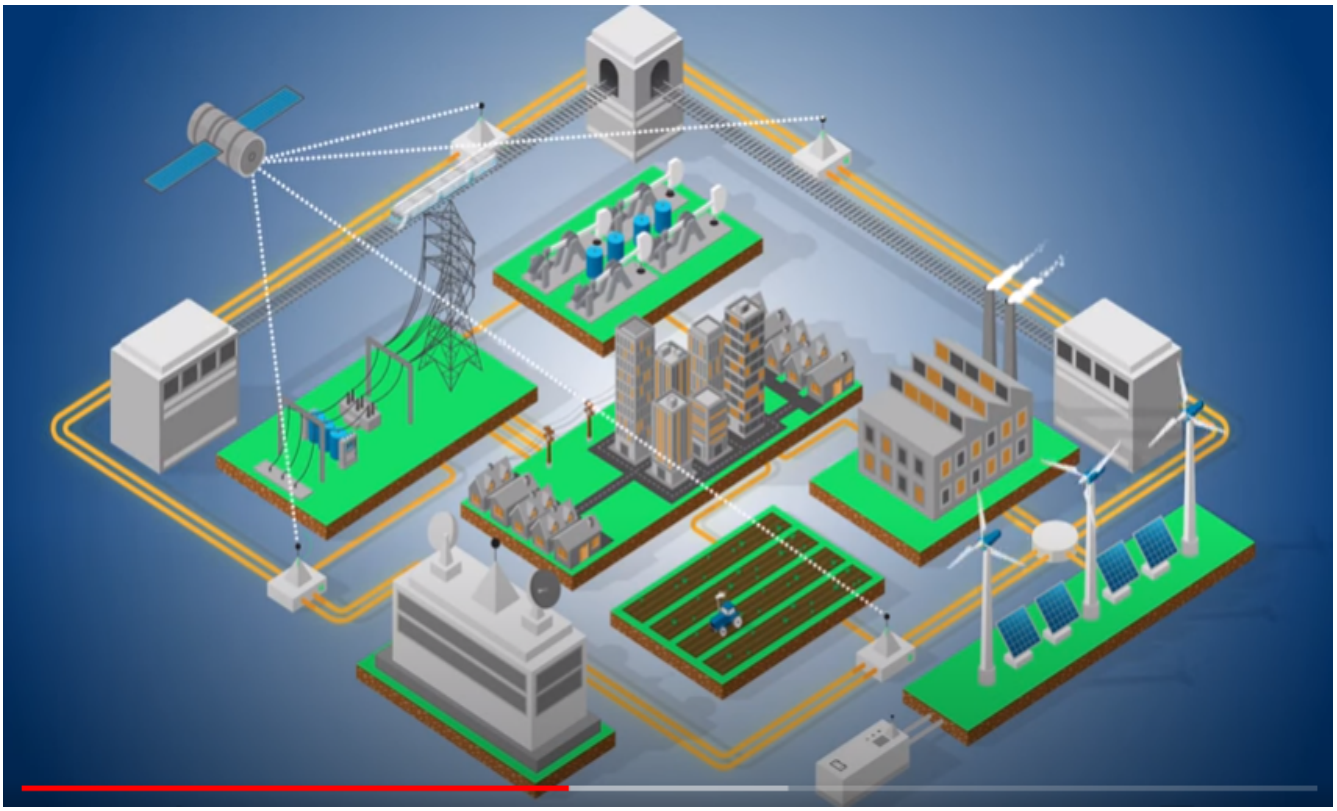
DAILY ASSESSMENT FORMAT

Date:	1/06/2020	Name:	Akshatha M Deshpande
Course:	DIGITAL DESIGN USING HDL	USN:	4AL17EC006
Topic:	Industry applications of FPGA, FPGA business fundamentals,FPGA vs ASIC design flow, FPGA basics	Semester & Section:	6th Sem A sec
Github Repository:	AkshathaDeshpande		

FORENOON SESSION DETAILS
Image of session



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

Introduction :

- In today's smart factories Intel is helping integrate secure could connected programmable logic controllers human machine interfaces and motor drives on a single chip.
- FPGA's provide low latency high performance synchro phaser application such as real time grid state estimation and white area frequency monitoring.

FPGA Business fundamentals:

Different hardware are like signs

- ASIC:Application Specific Integrated Circuits
- ASSP:Application Specific Standard Product
- FPGA:Field Programmable Gate Array

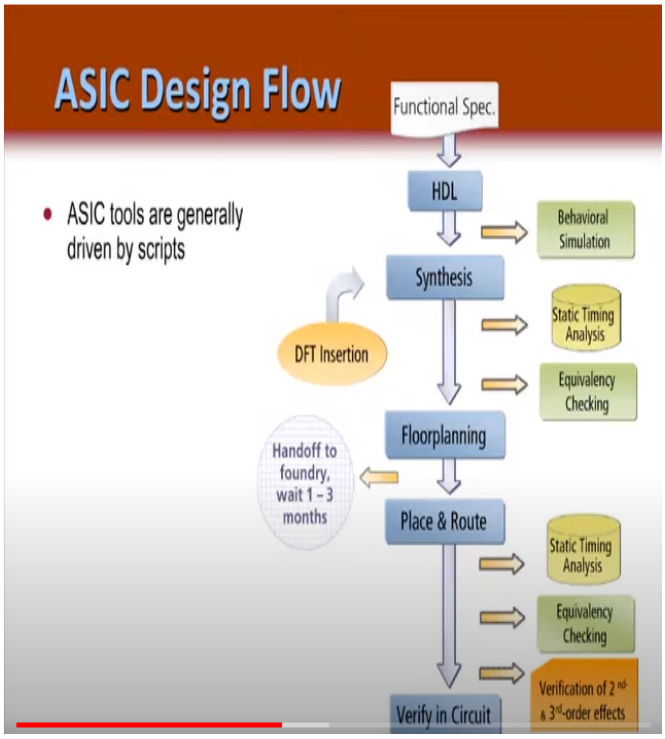
Pros and Cons:

Why FPGA?

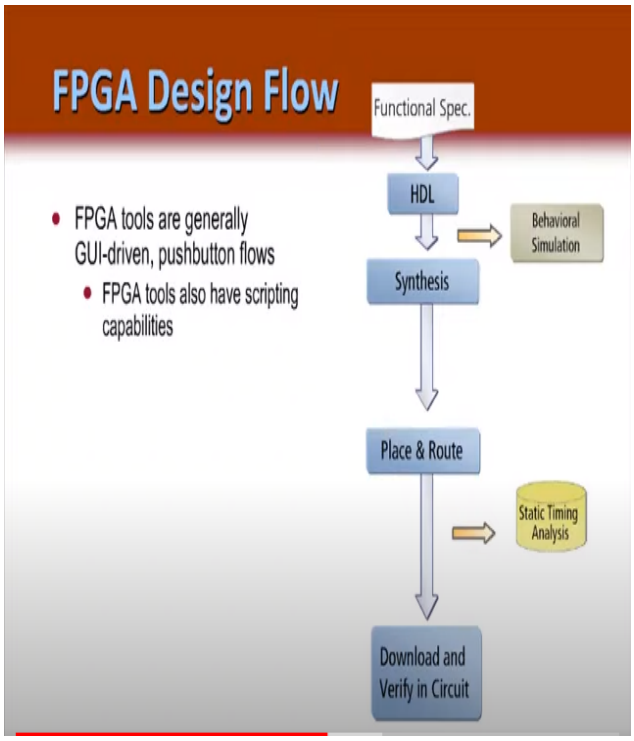
- Re-programmable and flexible
- Product Longevity
- Reduced Time-To-Market
- Market Size Optimized

FPGA vs ASIC design flow:

ASIC:



FPGA:



FPGA Basics:

- Hard cores – These are functional blocks that (at least for the most part) have their own dedicated logical resources. In other words, they are already embedded into your FPGA silicon.
- Soft cores – These are functional blocks that don't have their own dedicated logical resources.

Write a verilog code to implement NAND gate in all different styles:

Gate Level modeling:

```
module NAND_2_gate_level(output Y,input A, B);
wire Yd;
and(Yd, A, B);
not(Y, Yd);
Endmodule
```

Data flow modeling:

```
module NAND_2_data_flow (output Y, input A, B);
assign Y = ~(A & B);
endmodule
```

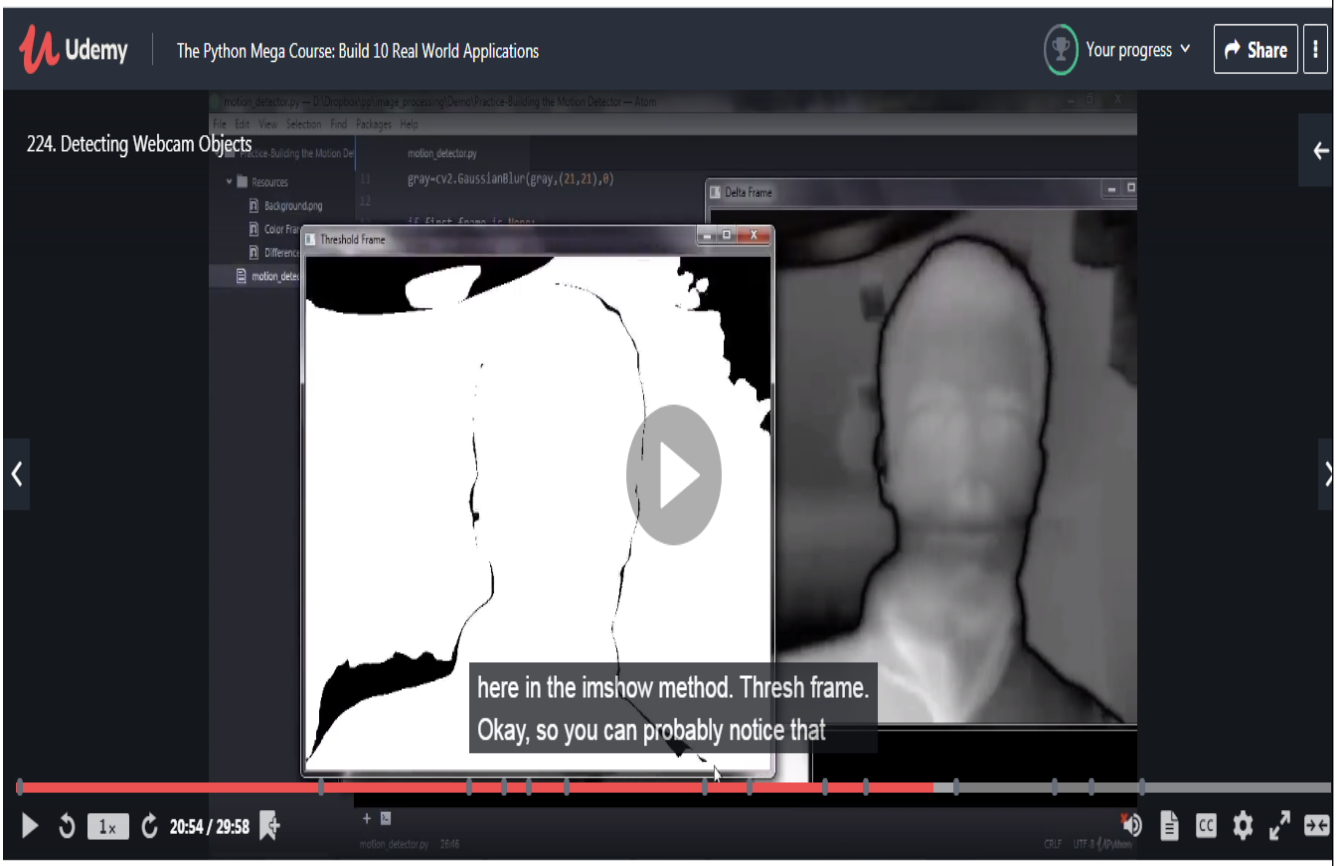
Behavioral Modeling:

```
module NAND_2_behavioral (output reg Y, input A, B);
always @(A or B)
begin
        if(A==1'b1&B==1'b1)
        begin
   Y=1'b0;
   end
   else
   Y=1'b1;
end
endmodule
```

Date:	1/06/2020	Name:	Akshatha M Deshpande
Course:	Python	USN:	4AL17EC006
Topic:	TO BUILD A WEBCAM MOTION DETECTOR	Semester & Section:	6th Sem A sec

AFTERNOON SESSION DETAILS

Image of session



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Webcam motion detector:

- Python is used to detect the moving objects and to plot the graph of a thing appearing and disappearing in front of the camera.
- This can be done by importing cv2 ,time and pandas.
- While loop is used to detect the objects so that when there is something in front of the camera it is read.
- The image is converted into gray scale and then to white and black.
- And the output is saved in a csv file that is the time at which motion is detected.

Date:	1/06/2020	Name:	Akshatha M Deshpande
Course:	RPA-Robotic Process Automation	USN:	4AL17EC006

Certificate :