

## DAILY ASSESSMENT FORMAT

Date:	1/06/2020	Name:	Prajwal Kamagethi Chakravarti P L
Course:	Python	USN:	4AL17EC073
Topic:	Application 6: Build a Webcam Motion Detector	Semester & Section:	6 & B
Github Repository:	<a href="https://github.com/alvas-education-foundation/Prajwal-Kamagethi.git">https://github.com/alvas-education-foundation/Prajwal-Kamagethi.git</a>		

## FORENOON SESSION DETAILS

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

The screenshot displays a Udemy course page for 'The Python Mega Course: Build 10 Real World Applications'. The main video player shows a Python script for a motion detector. The script includes comments and code for detecting motion in a video frame. The right sidebar shows the course content, including sections 223, 224, 225, and 28 through 33. The bottom of the page shows the course description and a list of application projects.

**About this course**

A complete Python course for both beginners and intermediates! Master Python 3 by making desktop, web, and mobile apps.

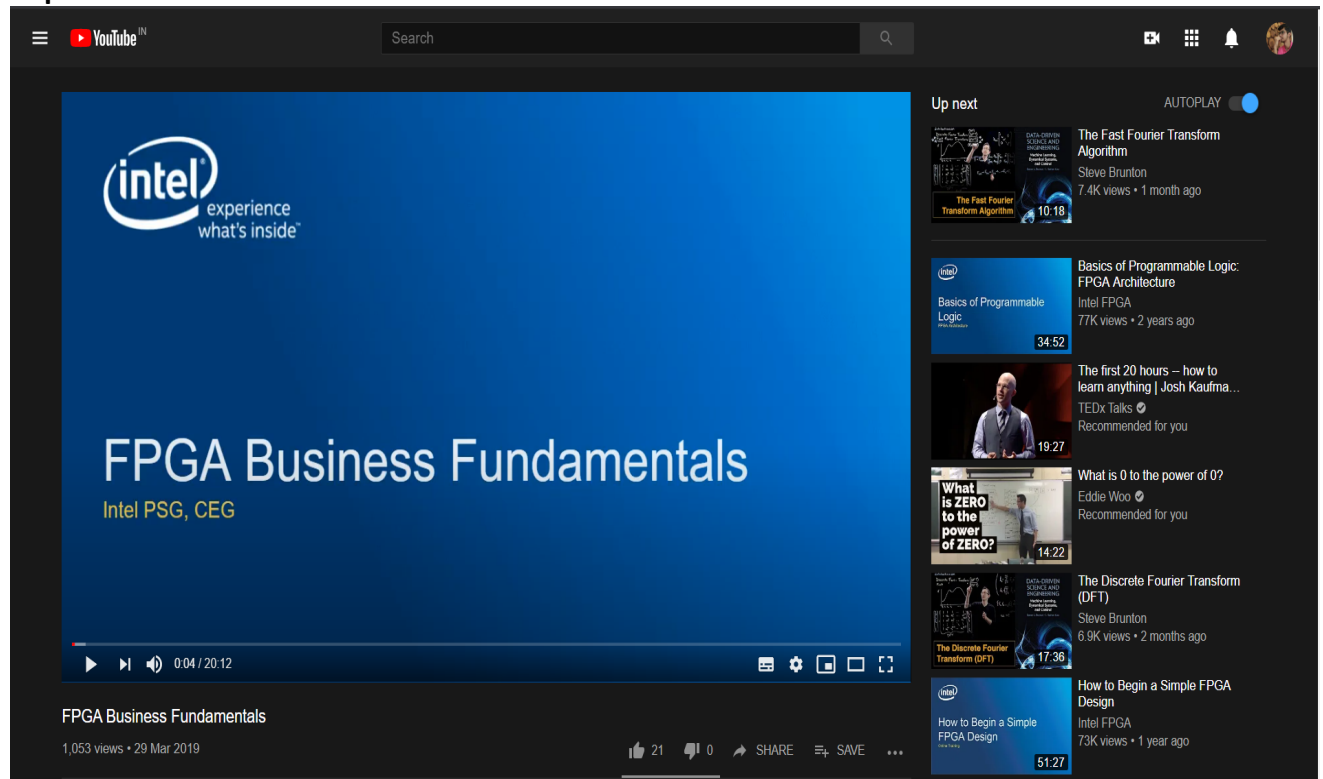
**Course content**

- 3 / 3 | 53min
- 223. Webcam Motion Detector - How The Output Will Look Like (2min)
- 224. Detecting Webcam Objects (30min)
- 225. Capturing Motion Time (21min)
- Section 28: Interactive Data Visualization with Bokeh (0 / 17 | 58min)
- Section 29: Webscraping with Python Beautiful Soup (0 / 4 | 23min)
- Section 30: Application 7: Scrape Real Estate Property Data from the Web (0 / 8 | 1hr 14min)
- Section 31: Application 8: Build a Web-based Financial Graph (0 / 12 | 1hr 40min)
- Section 32: Application 9: Build a Data Collector Web App with PostGreSQL and Flask (0 / 11 | 2hr 47min)
- Section 33: Application 10: Project Exercise on Building a Geocoder Web Service (0 / 4 | 30min)

- In this section, we learnt about building a Webcam Motion Detector. Creating Gray scale images and converting it into white and black. Also having raw colored images to detect motion. When motion is detected it starts noting the time at which the motion is detected. And that time and date is stored in excel file. Time at which motion was detected and saved in excel sheet is shown below.

	A	B	C	
		Start	End	
	0	37:53.7	37:59.4	
	1	37:59.9	37:59.9	
	2	38:03.1	38:04.2	
	3	38:06.0	38:07.1	
	4	38:08.9	38:10.0	
	5	38:10.7	38:14.8	
Date:	01-06-2020		Name:	Prajwal Kamagethi Chakravarti P L
Course:	DIGITAL DESIGN USING HDL		USN:	4AL17EC073
Topic:	<ul style="list-style-type: none"><li>1. Industry Applications of FPGA</li><li>FPGA Business Fundamentals</li><li>FPGA vs ASIC Design Flow</li></ul> FPGA Basics – A Look Under the Hood		Semester & Section:	6 <sup>TH</sup> & B
Github Repository:	<a href="https://github.com/alvas-education-foundation/Prajwal-Kamagethi.git">https://github.com/alvas-education-foundation/Prajwal-Kamagethi.git</a>			

## Report:



## Industry Applications of FPGA:

- The impact of new FPGA features in industrial applications is analyzed in detail in three main areas, namely digital real-time simulation, advanced control techniques, and electronic instrumentation, with focus on mechatronics, robotics, and power systems design.

## FPGA vs ASIC Design Flow:

- The below table shows the differences between FPGA and ASIC

	FPGA	ASIC
NRE	✓	
Performance		✓
Time to market	✓	
Design Flow	✓	
Cost per Unit (High volume)		✓
Barrier to Entry	✓	
Energy Efficiency		✓
Analog Blocks		✓

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

### 1. Gate Level Code:

```

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

```

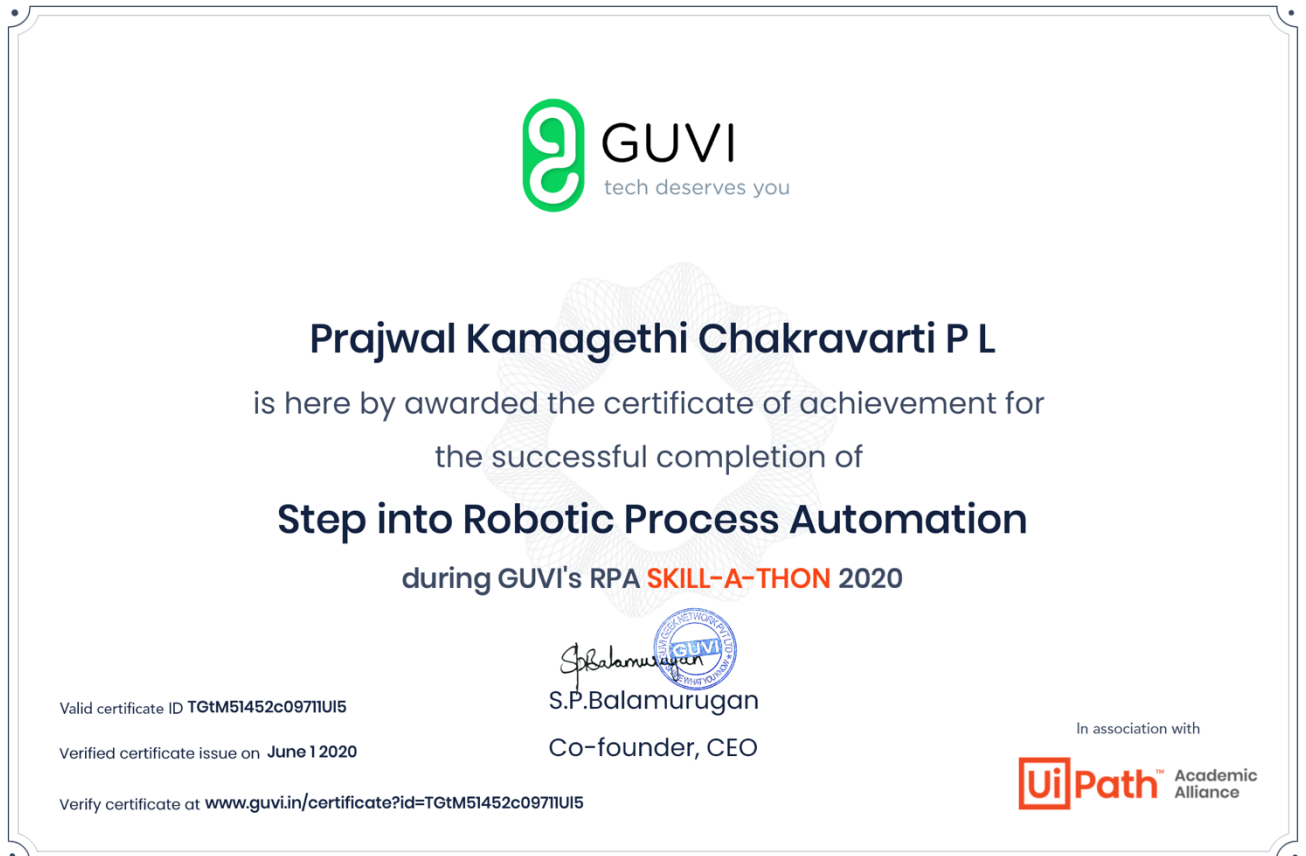
### 2. Data Flow Code:

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

### 3. Behavioral Modelling code:

```
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  
end  
endmodule
```

- **RPA(Robotic Process Automation) Certificate:**



- The above course was useful and interesting as it involved concepts of automation and robotics. Got to learn about UiPath tool for academic purpose. Also learnt to build basic automated bot to search movies in various websites.