

**Faculty Of Engineering**  
**Department of Electronics & Communication Engineering**

**REPORT ON DEPARTMENT EVENTS**

Academic year & Semester	2019, ODD	
Name of the Department	ECE	
PoC Faculty Member for clarifications (write email ID & mobile number for contact)	Prof. Delson T R <a href="mailto:delson.tr@christuniversity.in">delson.tr@christuniversity.in</a> 7760327703	
<b>Details of the Event</b>		
Name of Event	<b>FPGA Design Flow using Vivado</b>	
Description of the Event (seminar/workshop/guest lecture/hands on practice/Industrial Visit)	Workshop - Industry Oriented	
Address & contact details of Resource Persons/Speakers if any (provide email ID & mobile number of all the speakers)	<b>CoreEL Technolgies and CDI, IOC Venture</b>	
No. of Days event held	<b>Two</b>	
Date(s) and Duration	Date: 09 & 10 Dec 2019	Time: 9:00 am to 4:00 pm
Any amount spent for the event ?	Nil	
<b>Details of participants attended the event</b>		
Number of guests from outside university	Nil	
Students & faculty members from the department	<b>45</b>	
Students & faculty members from Faculty of Engineering (other depts.)	-	
Total Participants	<b>45</b>	
Is Attendance list enclosed? If no, specify the reason	<b>Yes</b>	



## 5. FPGA Design Flow using Vivado

### Report

Dated: 09 and 10 Dec 2019

### Schedule

09 Dec 2019

7-Series Architecture Overview

Lab 1: Vivado Design Flow

- Use Vivado IDE to create a simple HDL design. Simulate the design using the XSIM HDL simulator available in Vivado design suite. Generate the bitstream and verify in hardware.

Synthesis Technique

Lab 2: Synthesizing a RTL Design

- Synthesize a design with the default settings as well as other settings changed and observe the effect.

Implementation and Static Timing Analysis

Lab 3: Implementing the Design

- Implement the synthesized design of previous lab, perform timing analysis, generate bitstream, download the bitstream and verify the functionality.

Demonstration of Image processing on ZedBoard.

Demonstration of Internet of Things (IoT) design using ZedBoard

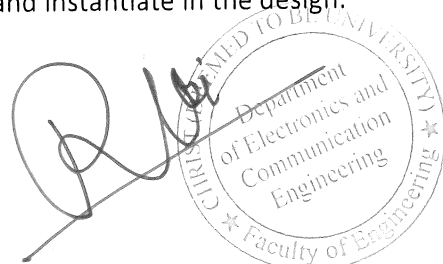
10 Dec 2019

IP Integrator

Lab 4: Using the IP Catalog and IP Integrator

- Use the IP Catalog to generate a clock resource and instantiate in a design. Use IP Integrate to generate a core and instantiate in the design.

Xilinx Design Constraints



## Lab 5: Xilinx Design Constraints

- Create a project with I/O Planning type, enter pin locations, and export it to the rtl. Then create the timing constraints and perform the timing analysis.

## Hardware Debugging

### Lab 6: Hardware Debugging

- Use Mark Debug feature and also available Integrated Logic Analyzer(ILA) core (available in IP Catalog) to debug the hardware.

CoreEL Technologies initiated two days workshop o Vivado FPGA Design.

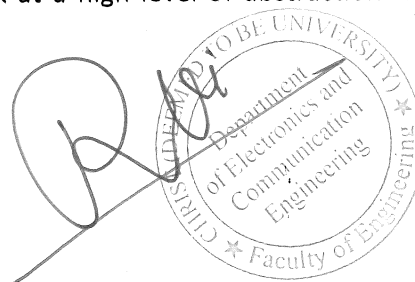
## Introduction to the PYNQ project

### Board setup on PYNQ Z2 Board

Labs setup completed in workshop:

- Getting started with Jupyter Notebooks
- Getting started with IPython
- Exploring the board Programming on board peripherals
  
- This two days' workshop conducted in connection with CDI (Center for Digital Innovation), CHRIST University. One batch of ECE branched participated in this two day workshop and get enriched the skill set in Robotics Prototype development.

Vivado® Design Suite HLx editions supply design teams with the tools and methodology needed to leverage C-based design and optimized reuse, IP sub-system reuse, integration automation and accelerated design closure. When coupled with the UltraFast™ High-Level Productivity Design Methodology Guide, this unique combination is proven to accelerate productivity by enabling designers to work at a high level of abstraction while facilitating design reuse.



## FPGA Design Flow using Vivado Workshop

### Attendance List 09 and 10 Dec 2019

SL No	Register Number	Name	PRESENT/ABSENT
1	1660114	SOWMYA SREENIVASAN	Samy
2	1660370	RUDRAKSH MISHRA	Rudra
3	1660486	R ARJUN	Arjun
4	1660601	AJAY RAMAKRISHNA MENON	Ajay
5	1660603	BRAHM DEV TIWARI	Brahm
6	1660606	ISAC S KULAKUDY	Isac
7	1660607	K ABISHEK CHANDRAN	Abishek
8	1660608	K KARTHIK	Karthik
9	1660610	LOURDHU AKHIL KANNA	Lourdhu
10	1660611	M SIBI MANUSH	Sibi
11	1660612	MANIK RAJ	Manik
12	1660613	MICHENAMETLA MEGHA SHYAM	Megha
13	1660614	MINTO MATHEW K J	Minto
14	1660615	PRITHVI RAJ MACHA	Prithvi
15	1660617	REEVE IGNATIUS SAVIO LOBO	Reeve
16	1660621	STEVE STEPHEN PONISAKE	Steve
17	1660622	ANGELA ANISHA	Angela
18	1660623	ANJANA K S	Anjana
19	1660624	CLARINE RENIE DELILAH J	Clarine
20	1660625	JUSTEENA THOMAS	Justeena
21	1660627	NIKITA NAYAR	Nikita
22	1660629	POOJITHA.M	Poojitha
23	1660632	ROSE ANTONY	Rose
24	1660633	RUTH SANDRA H	Ruth
25	1660634	Y.CHAITRI GOVARDHANA RAO	Chaitri
26	1660636	KARTHIK E	Karthik
27	1660637	ROSHIN CHERIAN	Roshin
28	1660640	FARHEEN ZUBAIR	Farheen
29	1660641	DHRUPAD U	Dhrupad
30	1660642	GEORGE F VADAKUMCHERY	George
31	1660643	VIGNESH N H	Vignesh
32	1660644	SHAARU D A	Shaaru
33	1660645	YALLAREDDYGARI MANOJKUMAR REDDY	Manoj
34	1660646	VAIBHAV P THOMAS	Vaibhav
35	1660647	P AMAR	Amar
36	1660648	SANGEERTH VINOD	Sangeerth

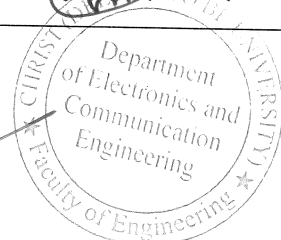



37	1660649	PRIYANKA BISWAS	<i>Priyanka</i>
38	1660650	ASHISH PRIYADERSHY	<i>Ashish Priyadershy</i>
39	1660651	NANDITA NAIR	<i>Nandita Nair</i>
40	1660652	MALLAVAJJALA SIDDARTHA ATHREYA	<i>Siddhartha</i>
41	1660653	JERRIPOTHULA SAIJEETH	<i>Saijeeth</i>
42	1660654	MAYOOGH GIRISH	<i>Girish</i>
43	1660655	UTSAV DIHINGIA	<i>Utsav</i>
44	1660656	PROTTUSH DUTTA	<i>Prottush</i>
45	1661014	ATHINA ANN THOMAS	
46	1760308	ALWIN C VARGHESE	<i>Alwin C</i>
47	1760453	MEKA KUMAR VIGNESWAR REDDY	<i>Meka Kumar</i>
48	1760601	ABIN CHALSON	<i>Abin Chalson</i>
49	1760603	ALDRIN LOUIS FIGURADO	<i>Aldrin</i>
50	1760604	ANISH T CYRIAC	<i>Anish T</i>
51	1760605	ARVIND R	<i>Arvind R</i>
52	1760606	ASHISH G NAIR	
54	1760607	B RISHITH RAO	<i>B Rishith</i>
55	1760608	BENSON THOMAS	<i>Benson Thomas</i>
56	1760613	MACHERLA PRAJWAL	
57	1760614	MANDLE SANDEEP REDDY	<i>Mandle Sandeep</i>
58	1760615	MOPURI AKHIL KUMAR REDDDY	<i>Mopuri Akhil</i>
59	1760618	RAKUL A V	<i>Rakul AV</i>
60	1760622	ANAKHA ELIZABATH GEORGE	
61	1760623	ANITA JOSE	<i>Anita Jose</i>
62	1760625	KELLY MARTIN	<i>Kelly Martin</i>
63	1760627	ROSE RAJAN	<i>Rose Rajan</i>
64	1760628	SAI RAKSHITHA	<i>Sai Rakshitha</i>
65	1760630	SWETHA SUNITH	
66	1760631	G R BHARATH	<i>G R Bharath</i>
67	1760632	NIKITA ELIZABETH JOSEPH	
68	1760633	JONNALA VENKATA VISHNU	<i>Jonjala Venkata</i>
69	1760634	KOVVURU HEMANTH CHARAN REDDY	<i>Kovvuru Hemanth</i>
70	1760636	PEDDAKOTLA SANJAYDATTA	
71	1760637	POTU HARSHIT	<i>Potu Harshit</i>
72	1760639	KUSUMA B	<i>Kusuma B</i>
73	1760640	MARIYA SNEHA	<i>Mariya Sneha</i>
74	1760642	MOGALLURI SRIKANTH	<i>Mogalluri Srikanth</i>
75	1760643	NANDIMANDALAM NAGENDRA SAI	<i>Nandimandalam</i>
76	1760644	CHRISTINA T .J	<i>Christina T J</i>
77	1760645	GUNDLAMADUGU MADHUKIRAN	<i>Gundlamadugu</i>
78	1760646	LOMADA SAI PRASAD REDDY	<i>Lomada Sai Prasad</i>
79	1760647	KANEKAL NUZHATH SAMREEN	<i>Kane Kal Nuzhath</i>



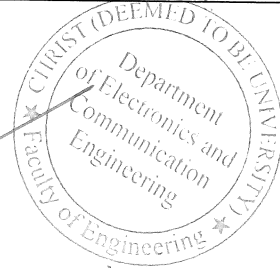
80	1760648	VEDIKA VINITHA RAJ	<i>Chandray</i>
81	1760649	ABHISHEK KUMAR	<i>Abhishek</i>
82	1760651	AMAL J DEV	<i>Amal J Dev</i>
83	1760652	ARCHIT THAKURGOTA	<i>Archit</i>
84	1760654	CHITTIPROLU AAKANKSH	<i>Chittiprolu</i>
85	1760655	KETHIREDDY ROHITH KUMAR REDDY	<i>Kethireddy</i>
86	1760656	POLAKALA DINESH REDDY	
87	1760659	A.HARIRAJ	<i>A Hariraj</i>
88	1760660	JAYAM LIKITHA	<i>Jayam</i>
89	1760661	ANNAVAJALA ABHIRAM SAI	
90	1760662	ANTONY JOSEPH T	<i>Antony</i>
91	1760663	MOHD ZAID	<i>Mohd Zaid</i>
92	1760664	NARAYANA PADMANABHAM TEJA GANESH	<i>Narayana</i>
93	1760670	AJAY S	<i>Ajay S</i>
94	1760602	AKHIL M VARKEY	<i>Akhil</i>
95	1760609	DEEPAK KANNAN	<i>Deepak</i>
96	1760610	DION VARGHESE PRAVEEN	<i>Dion</i>
97	1760619	RONIE MARIA MARCELO S	<i>Ronie</i>
98	1760621	A S DEVI DHARSHINI	<i>A S Devi</i>
99	1760629	SUMI SEK HAR	<i>Sumi</i>
100	1760650	AKHIL BENNY	<i>Akhil</i>
101	1760653	BASAPPA JAMPAPURAM RAJITH	<i>Basappa</i>
102	1760673	ANTHAPU UMA DEVI	<i>Anthapu</i>
103	1760617	POLAMARASETTY SUSHMANTH	<i>Polamarasetty</i>
104	1760620	SHASHANK RAWAT	<i>Shashank</i>
105	1660601	AJAY RAMAKRISHNA MENON	<i>Ajay Ramakrishna</i>
106	1760652	ARCHIT THAKURGOTA	<i>Archit</i>
107	1860602	EDWIN ABRAHAM THOMAS	<i>Edwin</i>
108	1860603	EUGENE ANTONY BABU	<i>Eugene</i>
109	1860604	JUJJAVARAPU RAJ MOULI	<i>Jujjavarapu</i>
110	1860605	KANCHAM ASHISH REDDY	<i>Kancham</i>
111	1860606	KANUMALLI BHARATH CHANDRA	<i>Kanumalli</i>
112	1860607	KHODEGADE MOHAMMAD TOUKEER	<i>Mohd Toukeer</i>
113	1860608	MELVIN PETER CHEERAN	<i>Melvin</i>
114	1860609	MUDUNURI YASWANTH VARMA	<i>Mudunuri</i>
115	1860610	NAMITH N	<i>Namith</i>
116	1860611	NANDYALA VEERA MEGHA CHANDRA REDDY	<i>Nandyala</i>
117	1860613	NEERAJ PUPPALA	<i>Neeraj</i>
118	1860614	NIRANJAN.S	<i>Niranjana</i>
119	1860617	SEGU VENKATA SAI PAVAN KUMAR	<i>Segu</i>
120	1860618	TAMATAM VENKATA SAI PRAVEEN REDDY	<i>Tamatam</i>

*Ravi*

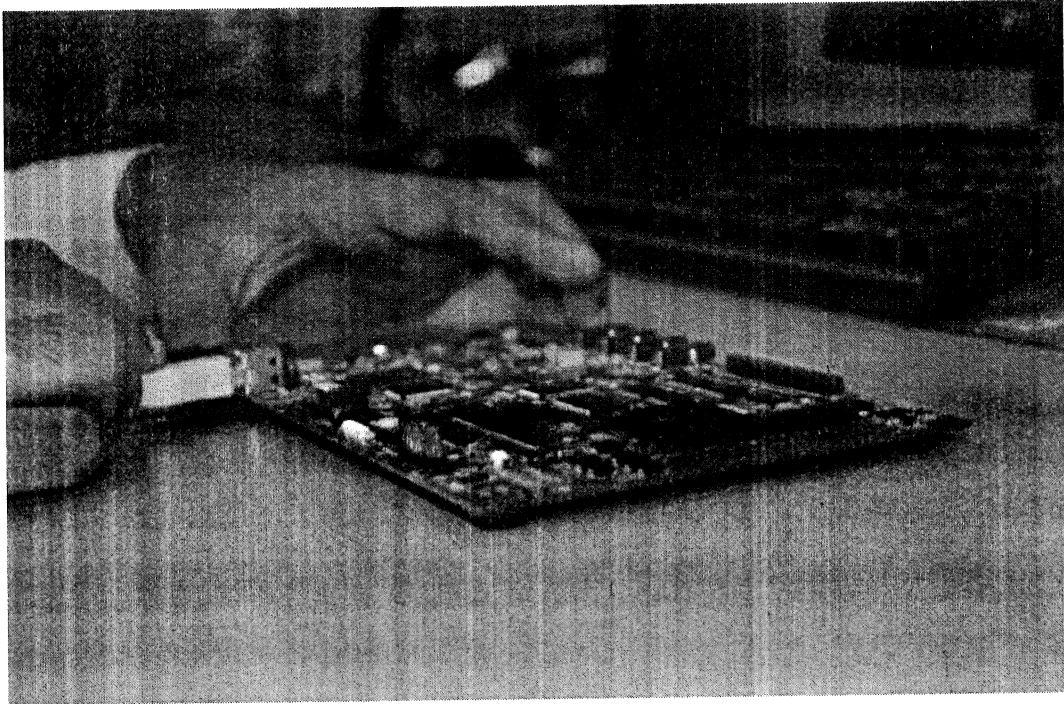


121	1860619	TEJAS JAYAN	<i>Tejas</i>
123	1860621	VISHNU AJAY	<i>Vishnu</i>
124	1860623	CHELSEA AURELIA	<i>Chelsea</i>
125	1860625	GADDAM SAI VENNELA	<i>Gaddam Sai Vennela</i>
126	1860626	GLADIS P SAJI	<i>GLP</i>
127	1860627	HALMANDGE AISHWARYA BHIMASHANKAR	<i>Aishwarya</i>
128	1860628	HARINI N	
129	1860629	LAVANYA K	<i>Lavanya</i>
130	1860630	SAI DHIKSHITA BHANDARU	
131	1860631	AJAY KODIGANDLA	<i>Ajay</i>
132	1860633	BHAVANA P	<i>Bhavana</i>
133	1860634	SHARON JOSE	<i>Sharon</i>
134	1860635	RAGHUBIR	<i>Raghubir</i>
135	1860636	GUMMANUR VIVEK	<i>Gummanur Vivek</i>
136	1860637	M DHARANEESH	<i>M Dharaneesh</i>
137	1860639	ALLE NITHISH REDDY	<i>Alle Nithish</i>
138	1860640	KETHAMREDDY NANDI VARDHAN REDDY	<i>Kethamreddy Nandi Vardhan</i>
139	1860641	PALLAPU YOSHNITHA SONJA	<i>Pallapu</i>
140	1860642	MIRUTHULA J	
141	1860643	BANDI SUPRIYA	<i>Bandi Supriya</i>
142	1860644	ARNOLD ROY NAZARETH	
143	1860645	BANKA TEJA	
144	1860646	CALEB BHASKAR	<i>Caleb Bhaskar</i>
145	1860647	CHILAKALA LAKSHMI GURU RAGHAVENDRA SAGAR	<i>Chilakala Lakshmi Guru</i>
146	1860648	HARSH WARDHAN TEWARI	<i>Harsh Wardhan</i>
147	1860649	NAGULAPATI SUDEEP REDDY	<i>Nagulapati Sudeep</i>
148	1860650	PRATIK KRISHNA PORTE	
149	1860651	S.KANISHKQ	<i>S.Kanishk</i>
150	1860652	SIDDAVATAM JAYA BHARATH REDDY	<i>Siddavatam Jaya Bharath</i>

*Ravi*



Event Photo



*[Handwritten Signature]*

CHRIST DEEMED TO BE UNIVERSITY  
Department of Electronics and Communication Engineering  
Faculty of Engineering



## About CHRIST

Christ University was born out of the educational vision of St Kuriakose Elias Chavara, an educationalist and social reformer of the nineteenth century in South India. He founded the first Catholic indigenous congregation, Carmelites of Mary Immaculate (CMI), in 1831 which administers Christ University. Established in 1969 as Christ College, it undertook path breaking initiatives in Indian higher education with the introduction of innovative and modern curricula, insistence on academic discipline, imparting of Holistic Education and adoption of global higher education practices with the support of creative and dedicated staff. The University Grants Commission (UGC) of India conferred Autonomy to Christ College in 2004 and identified it as an Institution with Potential for Excellence in 2006. In 2008 under Section 3 of the UGC Act, 1956, the Ministry of Human Resource Development of the Government of India, declared the institution a Deemed to be University, in the name and style of Christ University. One of the first institutions in India to be accredited in 1998 by the NAAC, and subsequently in 2004 and 2016, Christ University has the top grade 'A' in the 4-point scale. The multi-disciplinary University which focuses on teaching research and service, offers Bachelors to Doctoral programmes in humanities, social sciences, science, commerce, management, engineering, education and law to over 18000 students. The campus is a living example for the harmonious multiculturalism with students from all the states of India and from around 60 different countries. Christ University publishes six peer-reviewed research journals and has published more than 300 books in Kannada and English. A promoter of sports, music and literary activities, it is a nurturing ground for creative excellence.

## Vision

CHRIST (Deemed to be university) , a premier educational institution, is an academic fraternity of individuals dedicated to the motto of 'EXCELLANCE AND SERVICE'

## Mission

CHRIST (Deemed to be university) is a nurturing ground for an individual's holistic development to make an effective contribution to the society in a dynamic environment

## Core value.

- Faith in god
- Moral uprightness
- Love of fellow beings
- Social responsibility
- Pursuit of excellence



# Workshop on FPGA DESIGN FLOW USING VIVADO

9<sup>TH</sup> & 10<sup>TH</sup> DEC 2019

9 am - 4 pm

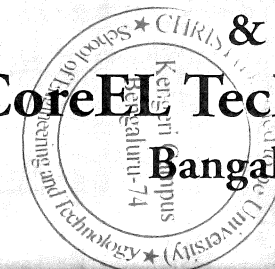
at Block-2 seminar hall, FoE,  
CHRIST (Deemed to be University)

Organised by

## Center for Digital Innovation (CDI)

CHRIST (Deemed to be University)

CHRIST &  
CoreIT Technologies  
Bangalore



## About the Workshop Organizer



Dr CHERUKURI RAVINDRANATH CHOWDARY

BTech, MTech, PhD

ASSOCIATE PROFESSOR

COMPUTER SCIENCE AND ENGINEERING

SCHOOL OF ENGINEERING AND TECHNOLOGY

*BANGALORE KENGERI CAMPUS*

Center for Digital Innovation

Industry Orientation Curriculum – Organizer of workshops

Special interest in the development of secured systems and designs applicable to the theory and practice of engineering science (emphasizing the usage of digital Multimedia processing, information assurance and systems technologies to solve multimedia transmission challenges currently faced by the military and industrial information processing & transmission centers

Specialties: • Image/Signal Analysis (Representation, Transmission, Recognition, Modeling and Compression)

• Information Assurance, Multimedia Security and Privacy System (Digital Multimedia Encryption & Forensics , Steganography, Watermarking, and Authentication)

• Biometric Systems

• Pattern Recognition and Machine Vision

• Statistical Multimedia Analysis

Center for Digital Innovation and IOC is Incubation – CHRIST University organizes workshops in 2019-20:

A handwritten signature in black ink, consisting of stylized, cursive letters.

- Wiznet-lot
- Siemens-Dex
- Robotics Workshop
- Matlab and Simulink
- FPGA Design using using VIVADO

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.