MOOC on Cloud Computing
Architecting Software for the Cloud

Part-1: 25th Aug to 25th Sept 2014
Part-2: 15th Oct to 15th Nov 2014

Organizing workshops and courses comes with its share of logistical problems. Leave and travel arrangements for the participants are major stumbling blocks. Hence, we wanted a locally manageable interactive e-learning platform. Prof. Prabhakar and his team from CSE created such a platform, which was used to offer the first computing course, as a summer course at IIT Kanpur. A first MOOC course "*Architecting Software for the Cloud*" was launched on 25th August. Almost 2000 students from across all TEQIP institutions and other interested institutions enrolled for this course.

This course was planned to address the challenges posed by contemporary application scenarios, an engineer today should know how to build applications using cloud platforms. A set of short lecture videos in the form of learning objects to students were given. This course had assessment components in the form of quizzes. It also offered opportunities to discuss online with fellow students and instructors. Students were given a certificate of accomplishment after successfully completing the course.

Topics Discussed

Part-1	Part-2

• Basics of software architecture
   • Architecture design
   • Quality attributes
   • Tactics and patterns
• Basics of cloud computing
   • Driving factors for cloud
   • Characteristics of various cloud variants such as IaaS, PaaS etc.
   • Case studies for different cloud variants
	• Architecture issues for cloud based applications
	   • Security
	   • Performance
	   • Failure handling etc.
	• Harnessing cloud characteristics in application design
	• NoSQL, MapReduce
	• Comparison with grid

Organizers

Prof. Prabhakar T.V

He is with Dept. of Computer Science and Engineering at IIT Kanpur since 1986, and works in Software Architecture and Semantic Web. More at: http://cse.iitk.ac.in/users/tvp

Prof. Balwinder Sodhi

Has spent about a decade in the IT industry across the globe and is currently a member of faculty with the Dept. of Computer Science and Engineering at IIT Ropar (Punjab), India. He works in Software Architecture and Cloud Computing. More at: http://www.iitrpr.ac.in/sodhi

Participanting Institutes

MOOC on Cloud Computing (25 August-15 November, 2014)		
S.No.	Name of the Institute	Number of Participation
1	Anna University, Bharathidasan Institute of Technology, Tiruchirappalli	12
2	B.M.S. College of Engineering, Bangalore	23
3	B.V.Bhoomreddi College of Engineering Vidyanagar, Hubli	14
4	Bipin Tripathi Kumaon Institute of Technology, Dwa	1
5	Birla Institute of Technology, Mesra, Ranchi	2
6	BIT Sindri	1
7	Bundelkhand Institute of Engg. & Technology, Jhans	1
8	BVM Engineering College, Gujrat	68
9	Chandigarh Engg. College, Landran	100
10	College of Engineering Pune	1
11	Deenbandhu Chhotu Ram University of Sc. & Tech Mur	1
12	Department of Technology, Shivaji University	1
13	DR. BABASAHEB AMBEDKAR TECHNOLOGYCAL UNIVERSITY	89
14	G B pant Ag & Tech pantnager	15
15	G B Pant Engineering college, Pauri Grahwal	12
16	G.H.Raisoni College of Engineering, Nagpur, Maharashtra	447
17	Government College of Engineering, Bargur	10
18	Government Engineering College, Rajkot	1
19	Government Engineering College, Patan, Gujrat	1
20	Government Engineering College,Bartonhill	5
21	Heritage Institute of Technology	5
22	IET Lucknow	1

23	IFTM University, Moradabad	1
24	Madanapalle Institute of Technology and Science	43
25	Malaviya National Institute of Technology	2
26	Maulana Azad National Institute of Technology,Bhopal	3
27	MLV Textile & Engineering College,Bhilwara	1
28	MMMEC college Gorakhpur	4
29	Motilal Nehru National Institute of Technology, Al	66
30	NC college of engineering, Panipat	1
31	NIT Agartala	68
32	NIT Karnataka	24
33	NIT Kurukshetra	1
34	NIT Raipur	2
35	NIT Silchar	1
36	NIT Warangal	47
37	Nitte Meenakshi Institute of Technology	2
38	North Eastern Regional Institute of Science & Technology	1
39	Osmania Univesity	1
40	pondicherry engineering college	1
41	PSG college of technology coimbatore	89
42	Rajarambapu Institute of TEchnology,Sakhrale,Maharashtra	42
43	rajiv gandhi proudyogiki vishwavidyalaya bhopal	1
44	R.V College of Engineering	1
45	Sagar Institute of Research and Technology, Bhopal	1
46	Samrat Ashok Technological Institute	1
47	Sardar Vallabhbhai National Institute of Technology, Surat	6
48	SDM College of Engineering & Technology, Dharwad	33
49	Shri Vishnu Engineering College for Women, Bhimavaram	2
50	siddaganga institute of technology	13
51	Sree Vidyanikethan Engineering College	6
52	Thappar University Patiala	1
53	Thiagarajar College of Engineering	44
54	Tripura Institute of Technology	6
55	UIET, Chandigarh	71
56	University College of Engineering(A) Kakinada	1
57	University college of Engineering,Trichy	1
58	University Institute of Chemical Engineering and Tech punjab	1
59	University of Calcutta	3

60	University Visveswaraya College of Engineering	4
61	V R SIDDHARTHA ENGINEERING COLLEGE	5
62	Walchand college of Engineering Sangli	2
63	Zakir hussain college of Engineering & Technology	20

Total Number of registrations: 1648

Outcome

After successfully completing this course students were able to:

1. Have a clear understanding of cloud variants and their characteristics. You will know how to leverage cloud characteristics to address different application design issues.
2. Provision and manage virtual hardware infrastructure on a cloud.
3. Have clear understanding of different types of virtualization technologies. You will know pros and cons of different virtualization platform in context of various application scenarios.
4. Create and manage virtual machines using different virtualization tools.
5. Understand cloud-oriented design paradigms and tools such as MapReduce and NoSQL.