

# CHHOTUBHAI GOPALBHAI PATEL INSTITUTE OF TECHNOLOGY

## Department of Computer Engineering and Information Technology

### A REPORT

### ON

### Three Days Workshop on “Advance Network Simulation using NS-3”

<b>Organizing Department</b>	<b>Computer Engineering &amp; Information Technology</b>
<b>Chief Patron</b>	Dr. D. R. Shah, Provost, UTU.
<b>Patron</b>	Dr. N. C. Shah, Director, CGPIT.
<b>Convener</b>	Mr. Devendra Thakor, Head CE & IT Dept., CGPIT
<b>Coordinators</b>	Ms. Ankita Desai Mr. Vijay Reshamwala
<b>Organising Committee</b>	Mr. Vishvajit Bakrola Mr. Achyut Sakadasariya Ms. Himani Parekh Ms. Niyanta Desai
<b>Target Audience</b>	Academic Professionals, PG students and Research scholars.
<b>Total Number of Participants</b>	49
<b>Date of Programme</b>	21-23 December, 2015.
<b>Invited Speakers</b>	Dr. Mohit Tahiliani, Assistant Professor, NITK, Surathkal Ms. Mansa Tahiliani, Assistant Professor ,NMAMIT,NITTE

### **Schedule:**

Sr. No.	Time	Description
<b>Day 1 (21<sup>st</sup> December)</b>		
1	09:00 AM - 10:00 AM	Registration and Breakfast
2	10:00 AM - 10:30 AM	Inaugural Function
3	10:30 AM - 12:30 PM	Lecture-1 Introduction to architecture of NS-3
4	12:30 PM - 01:30 PM	Lunch Break
5	01:30 PM - 03:30 PM	Lecture-2 Simulating point-to-point and CSMA network in NS-3(Part-I)
6	03:30 PM - 03:45 PM	Tea break
7	03:45 PM - 05:00 PM	Lecture-2 Simulating point-to-point and CSMA network in NS-3(Part-II)
<b>Day 2 (22<sup>nd</sup> December)</b>		
8	09:30 AM - 10:00 AM	Breakfast
9	10:00 AM - 12:00 PM	Lecture-3 Simulating infrastructure and adhoc wireless network in NS-3
10	12:00 PM - 01:00 PM	Lunch Break
11	01:00 PM - 03:00 PM	Lecture-4 How to use PyViz, NetAnim and Gnuplot with NS-3
112	03:00 PM - 03:15 PM	Tea break
13	03:15 PM - 05:00 PM	Lecture-5 How to use Wireshark, TraceMetrics and Flow Monitor with NS-3
<b>Day 3 (23<sup>rd</sup> December)</b>		
14	09:30 AM - 10:00 AM	Breakfast
15	10:00 AM - 12:00 PM	Lecture-6 Real data passing in NS-3
16	12:00 PM - 01:00 PM	Lunch Break
17	01:00 PM - 02:30 PM	Lecture-7 Emulation using NS-3
18	02:30 PM - 04:00 PM	Lecture-8 Creating a new routing protocol in NS-3
19	04:00 PM - 04:15 PM	Tea break
20	04:15 PM - 05:00 PM	Valedictory Function

### **Details of the Workshop:**

#### **Preamble:**

Department of Computer Engineering & Information Technology, CGPIT has organized three days workshop on “Advance Network Simulation using NS-3” sponsored by Uka Tarsadia University. Total 49 participants participated in this workshop which includes faculties, research scholars, and M.Tech and Ph.D. students from different colleges of Gujarat. There were 36 faculties and 13 students from different colleges like SVNIT, MSU Baroda and Nirma University, Ahmadabad.

The workshop was started by UTU song followed by lamp lighting and prayer to seek the blessings of almighty. As per tradition of CGPIT, all the dignitaries were given a warm welcome and were felicitated to express respect and gratitude towards them for devoting their valuable time and gracing the workshop. The dignitaries that graced the workshop were Honourable Dr. D. R. Shah (Provost UTU), Dr. N. C. Shah (Director, CGPIT), Dr. S.A. Shah (Registrar, UTU) and directors of various institutes of UTU. Along with the dignitaries, our experts were also felicitated by the coordinators of the workshops.

Ms. Jitisha Patel gave a brief introduction about the NS-3 on which the workshop was focused. She introduced the expert and expressed her views about the importance of workshop.

**The Honourable Director of CGPIT, Dr. N.C. Shah** gave the welcome speech. He motivated the faculties and students for participating in technical events like short term training program, workshop, expert talk, etc. He also congratulated the CE/IT department for organizing such workshop. He also appreciated the efforts made by CE/IT department with the great coordination.

Head of the CE/IT department as well as the convener of the workshop **Mr. Devendra Thakor** gave a brief introduction about the three days workshop.

**Our Honourable Provost of UTU, Dr. D.R. Shah** spoke a few words and showered his blessings on the occasion. The coordinator of the workshop, **Ms. Ankita Desai** gave the vote of thanks.

### **Session Detail:**

Session started with introduction of NS-3 and its architecture. He also covered difference between NS-2 and NS-3. He presented all the content in a very interactive manner which laid a very good impact on the audience.

### **Topics Covered:**

- Session-1:** Simulating point-to-point and CSMA network in NS-3
- Session-2:** Simulating infrastructure and adhoc wireless network in NS-3
- Session-3:** Use PyViz, NetAnim and Gnuplot with NS-3
- Session-4:** Use Wireshark, TraceMetrics and Flow Monitor with NS-3
- Session-5:** Real data passing in NS-3
- Session-6:** Emulation using NS-3
- Session-7:** Creating a new routing protocol in NS-3

### **• Simulating point-to-point and CSMA network in NS-3**

In this session, Ms. Mansa Tahiliani showed how to establish wired point to point connection between two nodes and she also showed how CSMA channel can be created and data flow between two nodes using CSMA channel. The entire session emphasised on wired point to point connection.

- **Simulating infrastructure and adhoc wireless network in NS-3**

Dr. Mohit Tahiliani showed the adhoc wireless network creation and data flow between mobile or moving nodes.

- **Use PyViz, NetAnim and Gnuplot with NS-3**

In this session all the above tools were explained by both speakers. These tools are used for graphical representation of simulating environment. Using this we can display the statistics of network parameters.

- **Use Wireshark, TraceMetrics and Flow Monitor with NS-3**

Dr. Mohit Tahiliani started the session with giving idea about network and what a packet header contains. The demos for packet information capturing was shown by both the speakers and participants were given time to perform it.

- **Real data passing in NS-3**

In this session, how real data such as videos, images and text files can be passed over the network was shown using Wireshark by both the speakers.

- **Emulation using NS-3 and Creating a new routing protocol in NS-3**

Ms. Mansa Tahiliani gave the clear idea about protocol cloning and showed demo of how one can create own protocol by modifying existing one. Dr. Mohit Tahiliani gave demo for creating a new routing protocol.

### **Valedictory Function:**

Valedictory function started with UTU Anthem. **The Honourable Director of CGPIT, Dr. N.C. Shah** gave concluding speech and felicitated expert **Dr. Mohit Tahiliani and Ms. Mansa Tahiliani**. He congratulated the CO/IT department for organizing such workshop. **Dr. Mohit Tahiliani** also shared his experience about the workshop at our institute. As a token of love and gratitude a memento were presented to both the experts by **Dr. N.C. Shah**.

After workshop a feedback was conducted from the participants of the workshop which included students as well as faculties. The feedback was positive and everyone was satisfied with the contents delivered. Certificates were distributed by **Dr.N.C.Shah, Dr. Mohit Tahiliani** and **Ms. Mansa Tahiliani** respectively.

**Mr. Vijay Reshamwala** delivered vote of thanks. The function concluded with group photograph of organising committee and participants.

## **Glimpse of the Workshop:**



**The Venue**



**Registration Desk**



**High Tea**



**Dignitaries on the Dais**





**Inauguration Ceremony**



**Welcoming the Dignitaries**



**Speech by Dignitaries**



**Technical Sessions**





**Valedictory Function**

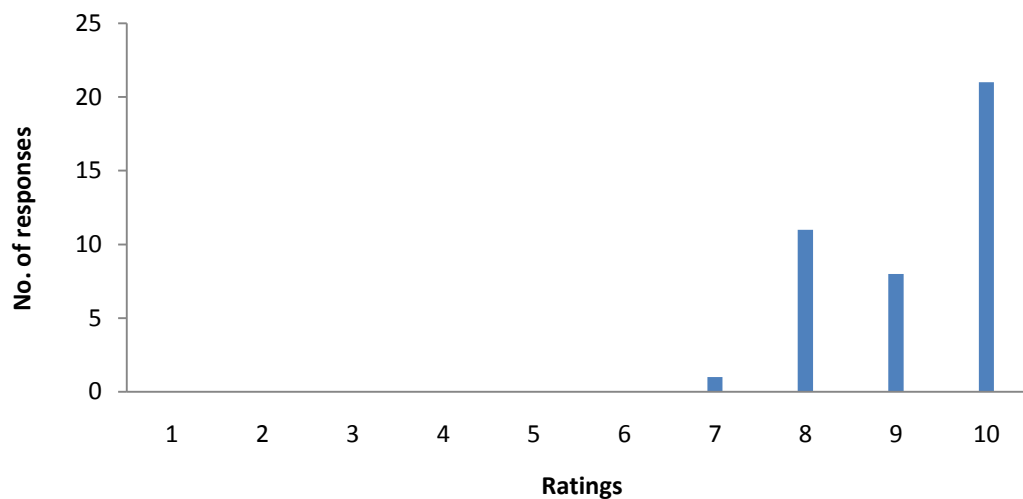


**Organizing Committee and participants of Workshop**

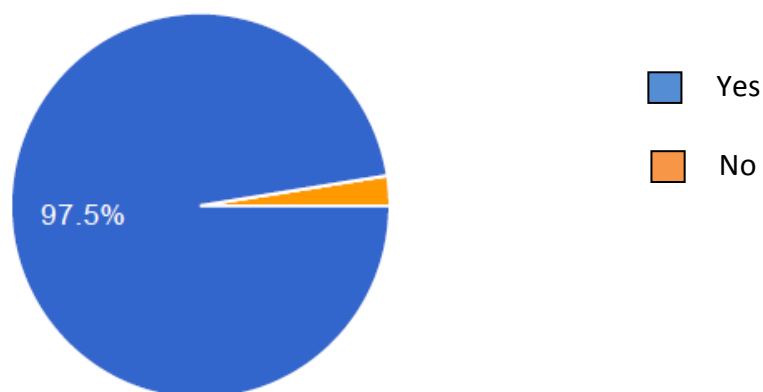
### **Feedback Analysis:**

Online feedback was collected from the participants in last session of the workshop. The overall feedback of the workshop was very positive. Here are some of the feedbacks, which were given by participants.

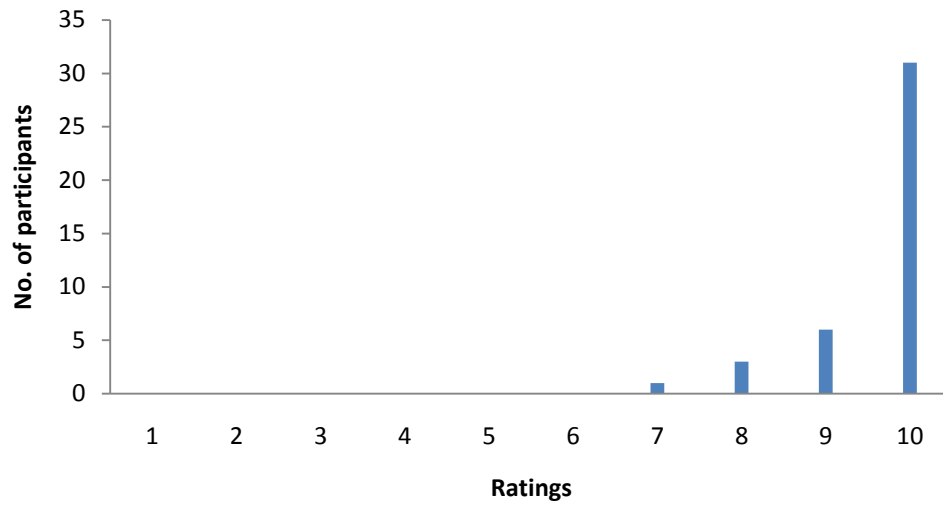
#### **1) How was the impact of the workshop?**



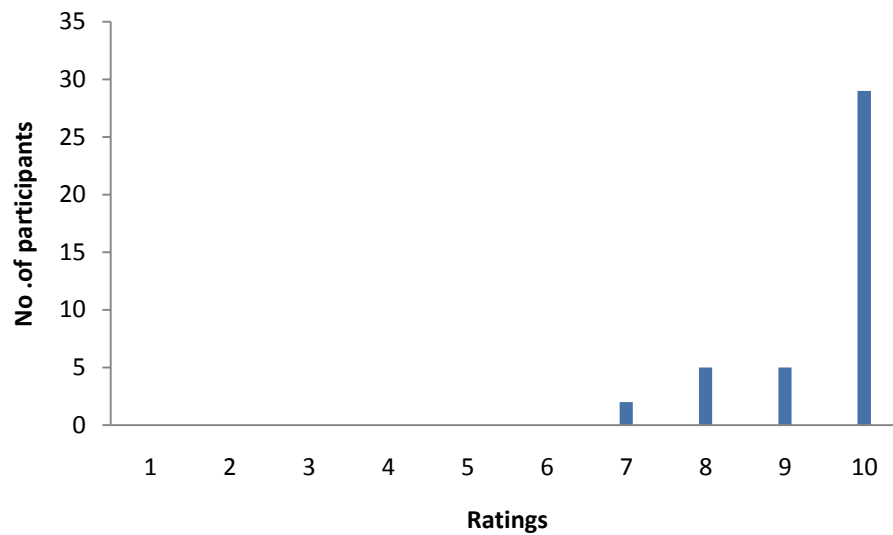
#### **2) Did the workshop achieve program objective?**



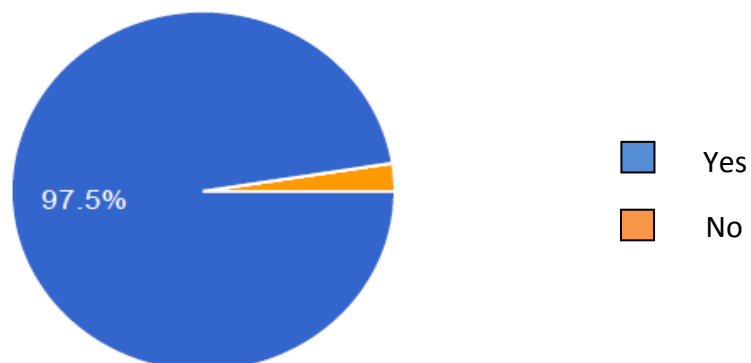
### 3) How was the interaction with the audience?



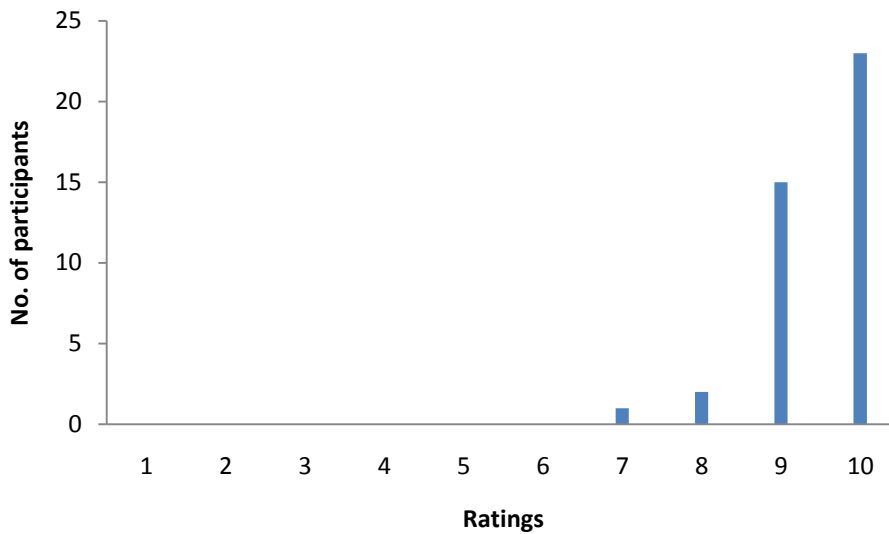
### 4) How was the usefulness of the practical session?



### 5) Did the session met your expectations?



## 6) How was the overall assessment of the workshop?



## Press note of the Workshop:





### **Committee members of the Workshop:**

<b>Registration &amp; Kit</b>	<b>Ms. Purvi Tandel</b> Ms. Shivani Vora Ms. Rachana Oza Ms. Shraddha Kothiya
<b>Publicity and Campaigning</b>	<b>Mr. Nikunj Gamit</b> Ms. Rashmi Pandey Ms. Supriya Pati
<b>Report Writing and Press Note</b>	<b>Ms. Vibha Patel</b> Ms. Isha Vajani Ms. Chandni Naik
<b>Certificate and Banner</b>	<b>Mr. Fenil Khatiwala</b> Ms. Palak Desai Ms. Mithila Sompura
<b>Hosting &amp; Stage Decoration</b>	<b>Ms. Trushna Khatri</b> Ms. Vaidehi Shah Ms. Jitisha Patel
<b>Lab Arrangement</b>	<b>Ms. Tarunika Chaudhary</b> Mr. Dipak Dabhi Ms. Urvi Panchal Ms. Dhara Desai
<b>Photography</b>	<b>Ms. Kinjal Mistree</b> Mr. Jenish Lavji
<b>Food Committee</b>	<b>Ms. Rachna Patel</b> Mr. Mihir Patel Ms. Nancy Raval
<b>Feedback</b>	<b>Ms. Shweta Singh</b> Ms. Monali Gandhi