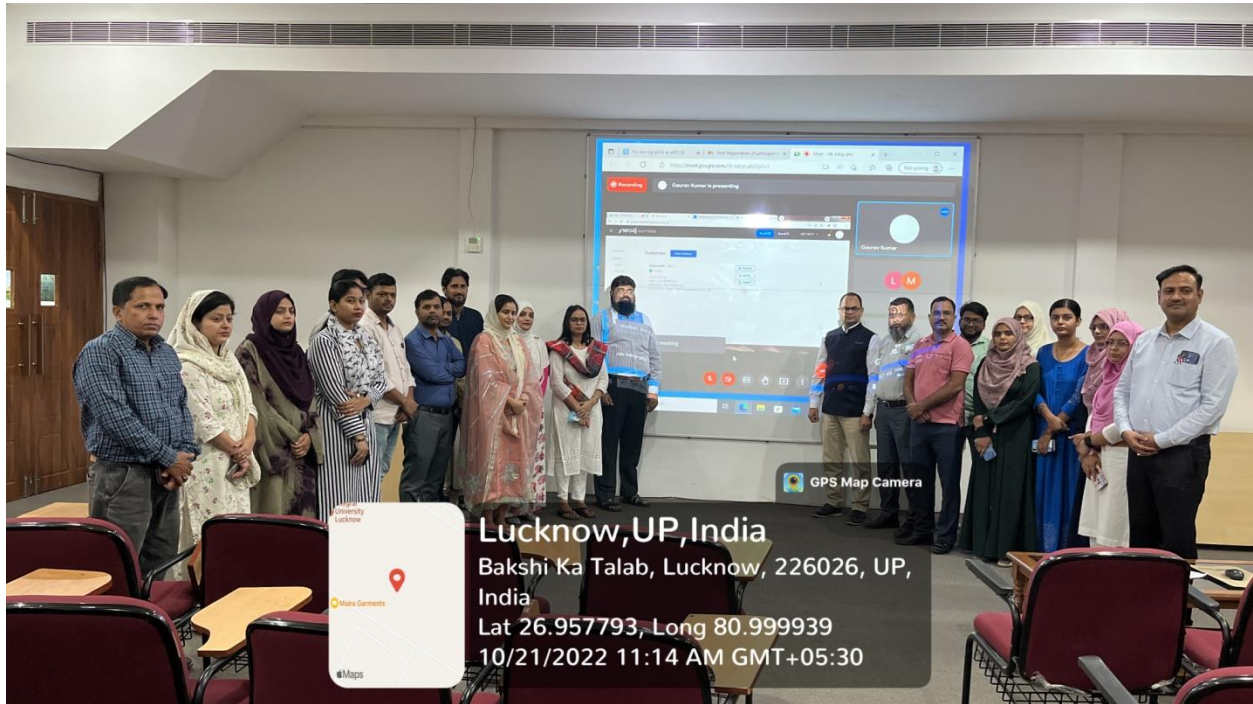


Report on One-week STC
"Open-Source Technologies (ICT-131)"
(HRDC, Integral University, Lucknow, a Remote Center of NITTTR, Chandigarh)
17- 21 October 2022

The Human Resource Development Centre, Integral University as a remote centre of NITTTR, Chandigarh has organized AICTE Recognized Short Term Course through Information and Communication Technology (ICT) on "**Open-Source Technologies**" from **17-21 October 2022** at the Integral University, Lucknow. This Short Term Course is organized in association with National Institute of Technical Teachers Training & Research, Chandigarh under Ministry of Education, Government of India.



As an outcome of the course, the participants gained knowledge about the various open-source software tools which will help them to present their work efficiently and effectively. A total of Fifteen technical sessions were constituted from a wide variety of topics and each session was led by a team of experts viz.:

Day 1:

- Introduction to Open Source Technology by Dr Amit Doegar, Associate Professor, NITTTR, Chandigarh.
- Free Resources and Software for Engineering Applications, by Jagriti Saini Founder & Owner of Eternal RESTE
- NodeRed Simulator for IoT system Design by Mohammad Ahsan Chishti Associate Professor, NIT Srinagar.

Day 2:

- Tinker cad and Sketch Programming for 3d printing and circuit design Gaurav Kumar, Director Magma, Research and consultancy services.
- Reference Management in Research: Practical Approach using Mendeley by Neha Gulati, Deputy Director, Indian research Center.
- Essentials of Python Programming for Open Source and Computer Vision Applications by Dr Amit Doegar, Associate Professor, NITTTR

Day 3:

- Open Source Research Tools, by Ishaq sheikh Government Engineering College, Dahod.
- Technical and Research Writing using LaTeX Programming, Ishaq sheikh Government Engineering College, Dahod.
- Data Analysis and Feature Engineering using Open Source, by Mohammad Ahsan Chishti Associate Professor, NIT Srinagar.

Day 4.

- Overleaf for research Writing and Data Visualization using Tableau, Dr Shruti, Research assistant, NITTTR Chandigarh.
- Open Source “Orange” for Data Visualization, Machine learning, and Data Mining, by Jagriti Saini Founder & Owner of Eternal RESTE.
- Open Source Tools for Security and Forensics by Dr Balaraju.J., Professor, NITTTR.

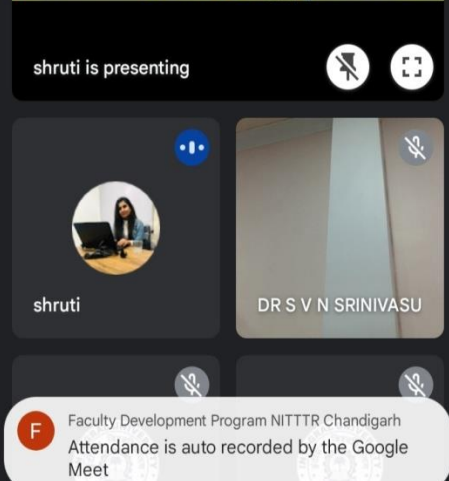
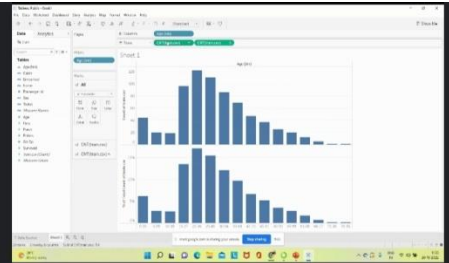
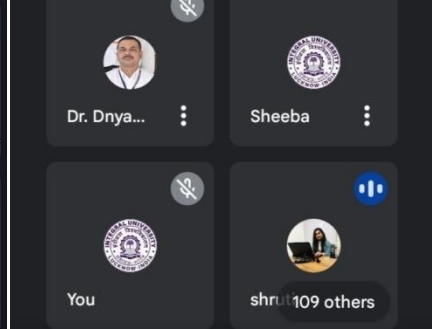
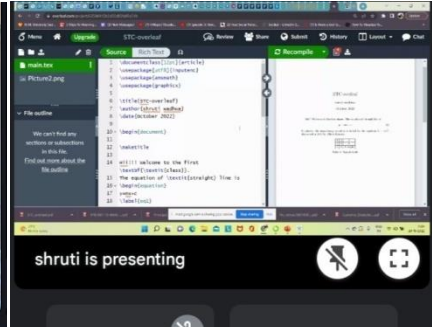
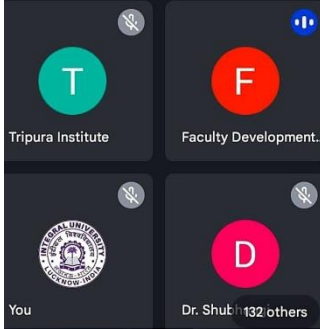
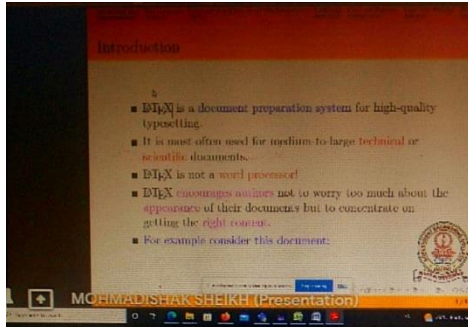
Day 5:

- Open Source NoSQL Databases by Gaurav Kumar, Director Magma, Research and consultancy services.
- Open Source Machine Learning and Deep Learning Libraries, by Gaurav Kumar, Director Magma, Research and consultancy services
- Open Source Case Study, Feedback and Online Quiz by Dr Amit Doegar, Associate Professor, NITTTR, Chandigarh.

This Short Term Course benefitted a total of 48 participants. The Integral University was much praised by NITTTR Chandigarh for its active participation. Dr. Sheeba Praveen, Remote Center Coordinator, and Mr Mohd Arif Ali Usmani, Technical Support Staff from Integral University's Department of Computer Science and Engineering, coordinated the programme.

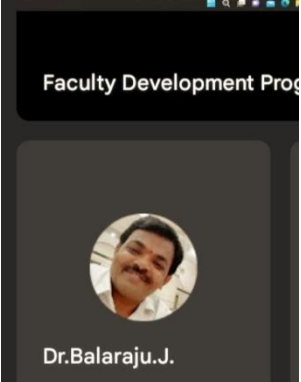
Glimpses of the Event:





Attack Vectors

- Trojan Horse
 - Extra code added manually to web page, program
- Viruses
 - Self-propagating (on execution)
 - Contains a malicious payload.
- Worms
 - Self-propagating through process exploit.
 - Contains a malicious payload.
- Penetration Tools (remote or local)
 - Exploits vulnerabilities to violate policy



Preprocess Widget in Orange

- **Continuization of discrete values:**
 - *Most frequent on base* treats the most frequent discrete value as 0 and others as 1. The discrete attributes with more than 2 values, the most frequent will be considered as a base and controlled with remaining values in corresponding column.
 - *One feature per value* creates columns for each value, place 1 where an instance has that value and 0 where it doesn't. Essentially *One Hot Encoding*.
 - *Remove non-binary features* retains only categorical features that have values of either 0 or 1 and transforms them into continuous.
- *Remove categorical features* removes categorical features altogether.
- *Treat as ordinal* takes discrete values and treats them as numbers. If discrete values are categories, each category will be assigned a number as they appear in the data.
- *Divide by number of values* is similar to treat as ordinal, but the final values will be divided by the total number of values and hence the range of the new continuous variable will be [0, 1].

