Resource Persons:

1. Golla Naga Mounika,Trainer,APSSDC
2. Meda Ruthumma, Trainer,APSSDC

Registration and Fee Particulars:

- Registration Fee Rs 300/-
- Registration for the Program may be done by signing up in APSSDC portal.
- http://engineering.apssdc.in/register/
- After clicking on the link, it will ask you for signup. Fill your details and submit the form.

Important Dates:

Last Date for Registration: 04/12/2021

Certificate Criteria:

- A test will be conducted at the end of the program.
- Minimum Attendance needed: 80%
- Exam Score: Minimum 60% marks in the test

Contact Persons:

Coordinators:

1) Dr.P.Ashok Reddy
Assoc Prof -Department of CSE
Coordinator-Skill Development Center
Mobile: 9948400430
Mail Id: pashokreddy29@gmail.com

2) Dr S .Jayaprada,
Assoc. Professor,
Dept. of CSE, LBRCE.
Mobile: 9346994255
Mail Id: jayasomala@gmail.com

COMMITTEE MEMBERS

Chief Patrons:

1) **Sri L. Jaya Prakash Reddy,** Co-Chairman
2) **Sri L.R.N.K. Prasad Reddy,** Vice-Chairman

Patrons:

1) **Sri G. Srinivasa Reddy,** President
2) **Dr. K. Appa Rao,** Principal
3) **Dr. K. Harinadha Reddy,** Vice-Principal
4) **Dr. M. Srinivasa Rao,** Dean Academics

Convener:

Dr. D. Veeraiah, Professor &HoD, CSE

Coordinators:

1. Dr.P.Ashok Reddy, Assoc.Professor,, Dept. of CSE, LBRCE
2. Dr S .Jayaprada, Assoc. Professor,, Dept. of CSE, LBRCE

Co-Coordinators:

1) **Mr.J.Nageswara Rao,** Dept. of CSE, LBRCE
2) **Mrs.K.Devi Priya,** Dept. of CSE, LBRCE
3) **Mr.N.V.Naik,** Dept. of CSE, LBRCE

Organizing Committee:

All Faculty Members of Department of CSE

Skill AP APSSDC

COMPUTER SOCIETY OF INDIA ESTD. 1965

Online Short Term Training Programme (STTP)
on

"Machine Learning Using Python"

(06th – 24th December 2021)

In Association with

Andhra Pradesh State Skill Development Corporation

&

Computer Society of India

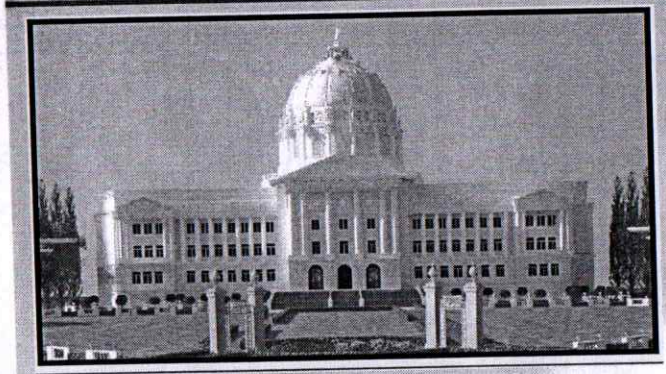
Organized by:

Department of Computer Science &Engineering
(Accredited by NBA under Tier – I)

nirf NATIONAL INSTITUTIONAL RANKING FRAMEWORK
(Rank Band: 201-250
India Rankings 2020)

NBA
(Under Tier-I)

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)
Accredited by NAAC & NBA (CSE, IT, ECE, EEE, MECH)
ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.



LBRCE was founded through Lakireddy Bali Reddy charitable trust in 1998 which stands for quality technical education which is exemplified by the continuous strides it has taken towards excellence in the last two decades. Started with an intake of 180 and now our intake is of 1164 Students. It has got Autonomous Status in the Year 2010 from UGC, which is extended for a period of 06 years in 2016. We were accredited with NAAC and NBA (CSE, IT, ECE, EEE & MECH) under Tier-I valid up to 2021-22. The College has also been awarded 2(f) and 12(B) statuses, apart from the recognition as a 'College with Potential for Excellence (CPE)' from the UGC. We take pride to have large pool of well-qualified and experienced faculty.

About the Department:

The Department of Computer Science and Engineering at the LBRCE was established in 1998, offers UG Course - B.Tech in CSE, CSE (AI&ML), and PG Course - M.Tech in CSE. The B.Tech (CSE) program was started in the year 1998 with an intake of 40 students and the intake was subsequently increased to 60 students in the year 1999, 90 students in the year 2008, 120 students in the year 2009 and 180 students in the year 2019. The B.Tech CSE (AI&ML) program was started in the year 2021 with an intake of 60 students. Department was accredited by NBA in the year 2008 for the period of three years and in the year 2019 under Tier-I, valid up to A.Y: 2021-22. The department is also recognized as Research Centre by JNTUK, Kakinada. At Present, Department consists of 45 Well-Qualified Faculty with 12 Doctorates from reputed

Topics to be covered:

1. Introduction to Machine Learning
a. What is Machine Learning
b. Machine Learning Classification
c. Types of Algorithms
d. Overview of Exploratory Data Analysis with NumPy, Pandas,Matplotlib

2. Regression Models
a. Linear Regression with One variable
b. Evaluation Metrics in Regression Models
c. Train/Test splitting of data & Cross Validation
d. Linear Regression with Multiple Variables

3. Regularization Models
a. Under fitting
b. Overfitting
c. Best fit
d. Applying Ridge Regression
e. Lasso Regression Algorithms

4. Classification Models
a. Introduction to categorical types of data
b. Types of classification
c. K-Nearest Neighbors Classifier
d. Evaluation Metrics for classification Models
e. Support Vector Machines
f. Decision Trees Classifier
g. Random Forest Algorithm

5. Unsupervised Machine Learning
a. Introduction to Unsupervised Learning
b. Types of Unsupervised Learning

6. Clustering
a. Introduction to clustering
b. Types of Clustering Methods
c. K Means Clustering Applications

7. Dimensionality Reduction
a. Dimensionality reduction
b. Principal Component Analysis (PCA)

About APSSDC:

The Government of Andhra Pradesh has a vision to be among the three best states in India by 2022 and to achieve the status of a developed state by 2029.To achieve this goal, the State has adopted a mission-mode approach and has created a 'Knowledge and Skills Mission' along with six other missions. This mission will look into the manpower requirements of all other missions. Towards this, the Government of Andhra Pradesh has created a separate Department of Skill Development, Entrepreneurship and Innovation, to provide the thrust to skilling in the state and Andhra Pradesh State Skill Development Corporation (APSSDC) has been established as the implementing arm and spearheading the training skilling initiatives in the state.

About the STTP:

Machine learning is a method of data analytics. It is a branch of artificial intelligence that investigates how computers can learn from data to recognize complex patterns and make intelligent decisions with minimal human intervention.ML is a fast growing discipline and in recent years. It has gained o lot of importance and wide acceptance. This program is intended to introduce the algorithmic approaches in machine Learning and discuss the recent research directions in these areas, The main aim of this SP is to improve upgrading of knowledge and skills for students involved in active participation in the area of machine Learning and related technologies. The outcome of this program is learn how to use data patterns to make decisions and predictions with real world examples.

Objectives of the STTP:

- To introduce students/Faculty to the basic concepts and techniques of Machine Learning.
- To develop skills of using recent machine learning software for solving practical problems.
- To gain experience in doing independent study and research.

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

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Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.

http://cse.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

REPORT

on

Three week

Online Short Term Training Programme (STTP)

On

"Machine Learning Using Python"

06th – 24th December 2021

In Association with

Andhra Pradesh State Skill Development Corporation

&

Computer Society of India

Department of Computer Science and Engineering, Lakireddy Bali Reddy College of Engineering has conducted Three Week Short Term Training Programme (STTP) In Association with APSSDC and CSI on "**Machine Learning Using Python"** from Dec 6th to Dec 24th 2021. The main essence of this Programme is to highlight effective techniques that can be applied on machines and enable them to extract the human insights to best solutions. This STTP provides a broad introduction to Machine Learning and its Algorithms, Regression Models, Dimensionality Reduction, Classification Models and Clustering. The STTP also draws attention to numerous case studies and applications using Python, so that the participants learn how to apply Machine Learning Techniques to real-time data in various areas.

Date: 6th Dec, 2021

Day 1-Inauguration Session

STTP was inaugurated on 6th December, 2021 by Resource Persons Golla Naga Mounika,Trainer,APSSDC and Meda Ruthumma, Trainer,APSSDC , Dr. D. Veeraiah ,Professor & HoD, CSE, ,Dr.P.Ashok Reddy,Assoc Prof -Department of CSE APSSDC Coordinater cum STTP Coordinator , Dr S .Jayaprada, Assoc. Professor, Department of CSE, STTP Coordinator, LBRCE, and Co-Coordinator of STTP. Dr.P.Ashok Reddy,Assoc Prof - Department of CSE welcomed all the dignitaries and Students. In welcome speech, highlighted the importance and objectives of organizing this Short Term Training Programme (STTP).

On the occasion, Dr. D. Veeraiah ,Professor & HoD, CSE, Lakireddy Bali Reddy College of Engineering , welcomed all the faculty participants and Students emphasized the important points -- the importance of Machine Learning Techniques and its Applications and how it is important for a students to be aware of all the emerging technologies.

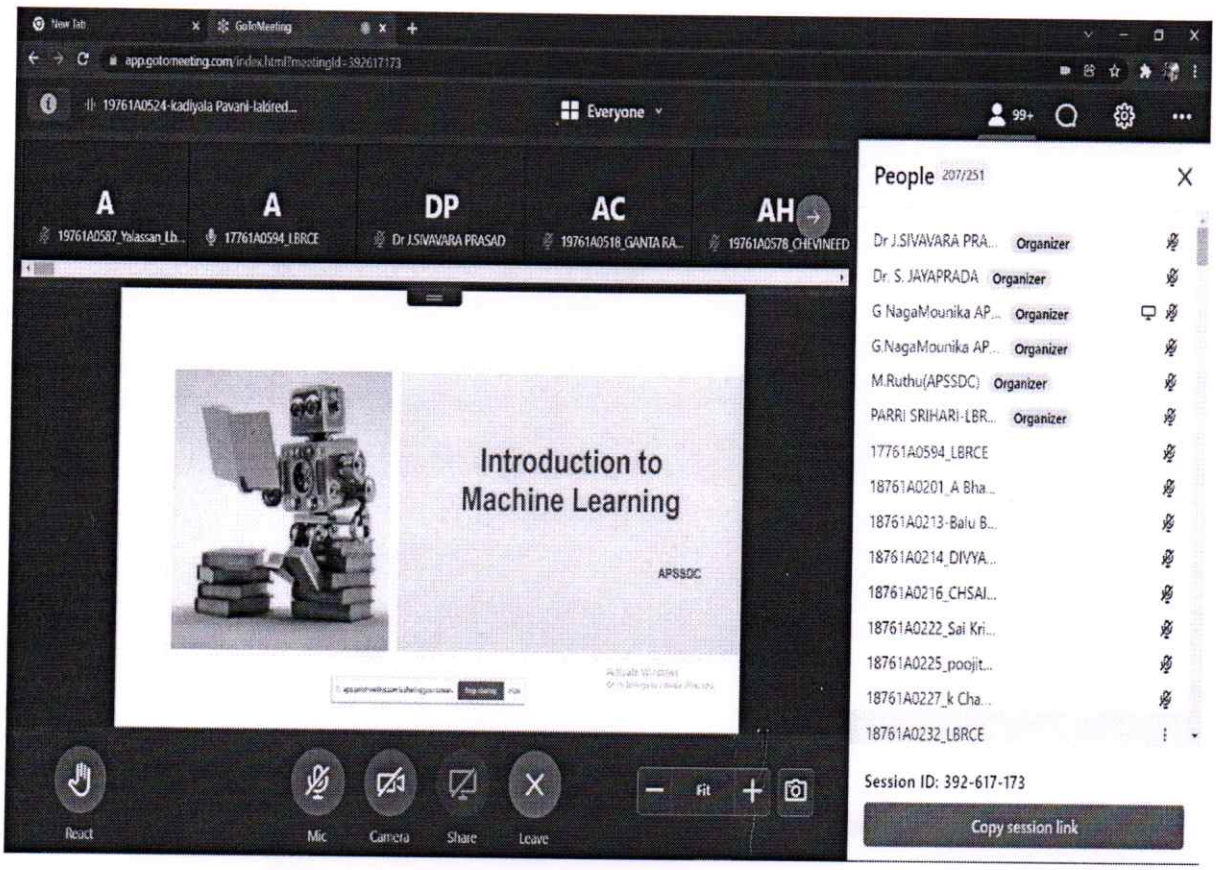
Date: 6th Dec, 2021

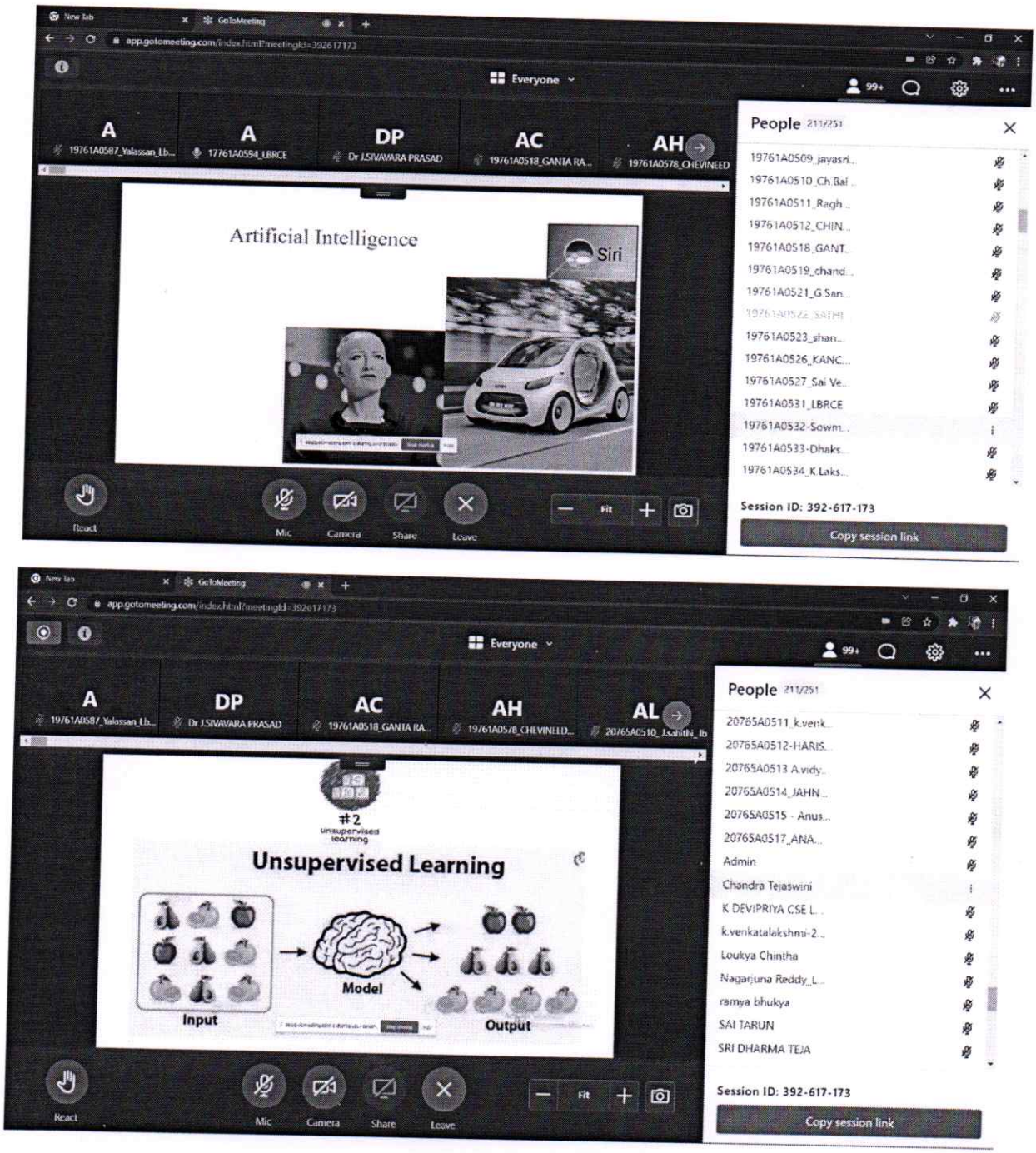
Session: 1

Topic: Introduction to Machine Learning, Types of Machine Learning, Artificial Intelligence.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 1st technical session was started with formal introduction of the resource person ,started session with an introduction to Machine Learning, and she further elaborated the concepts by explaining Artificial Intelligence and Machine Learning Applications. The session was ended with the vote of thanks.





Golla Naga Mounika delivering a lecture on Machine Learning

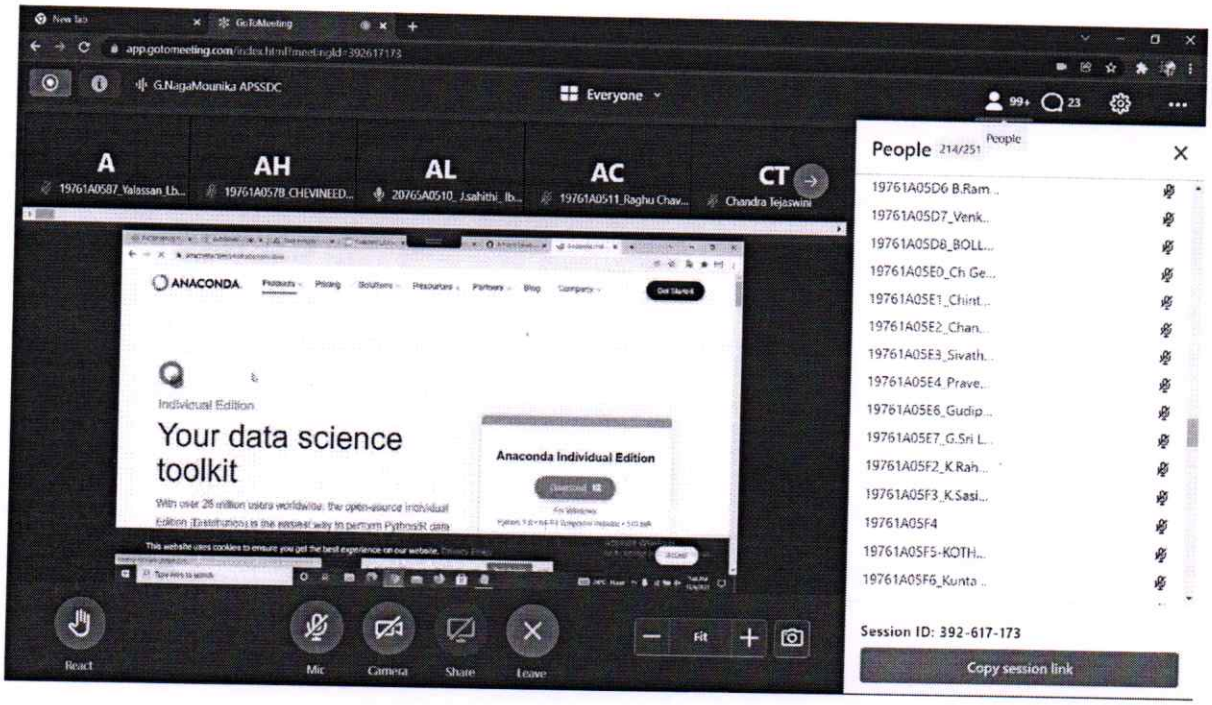
Date: 7th Dec, 2021

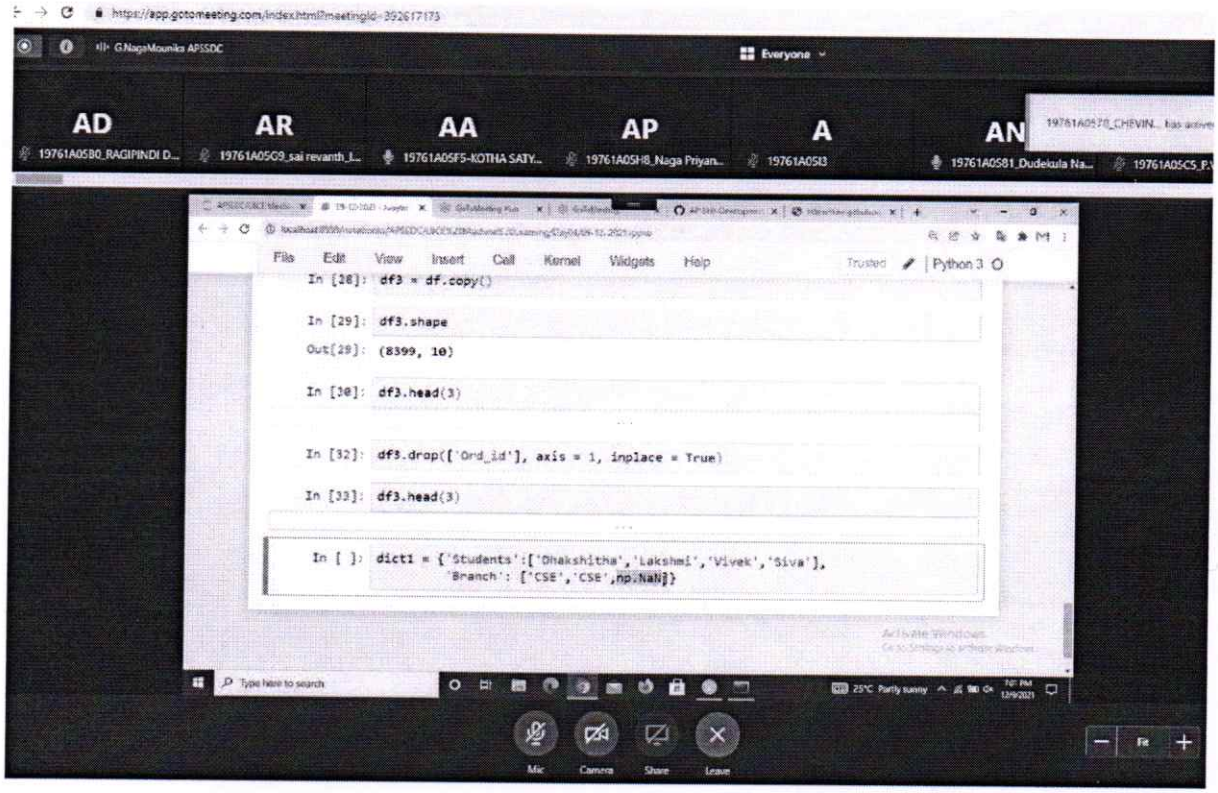
Session: 2

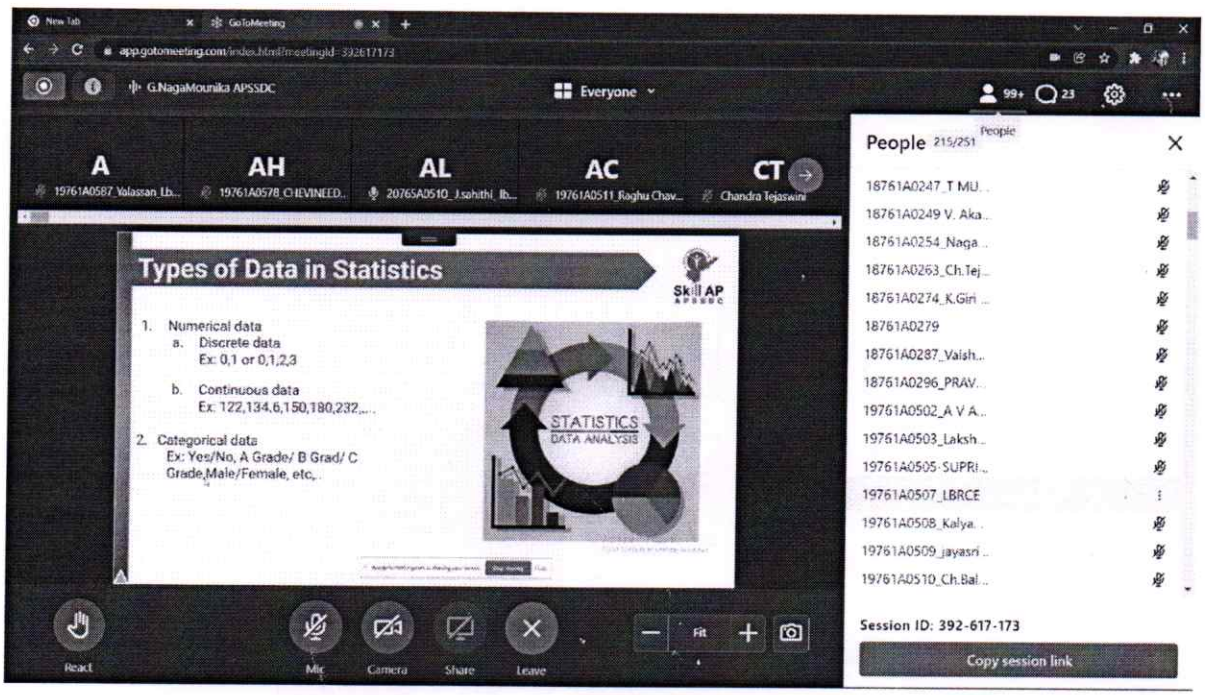
Topic:About NumPy.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 2nd technical session was started about the introduction toNumPy, Installation of NumPy, NumPy methods, Creation of arrays(1-Dimensional array, 2-Dimensional array, 3-Dimensional or Multi-Dimensional array) and ended the section with the Advantages of NumPy. The session was ended with the vote of thanks.







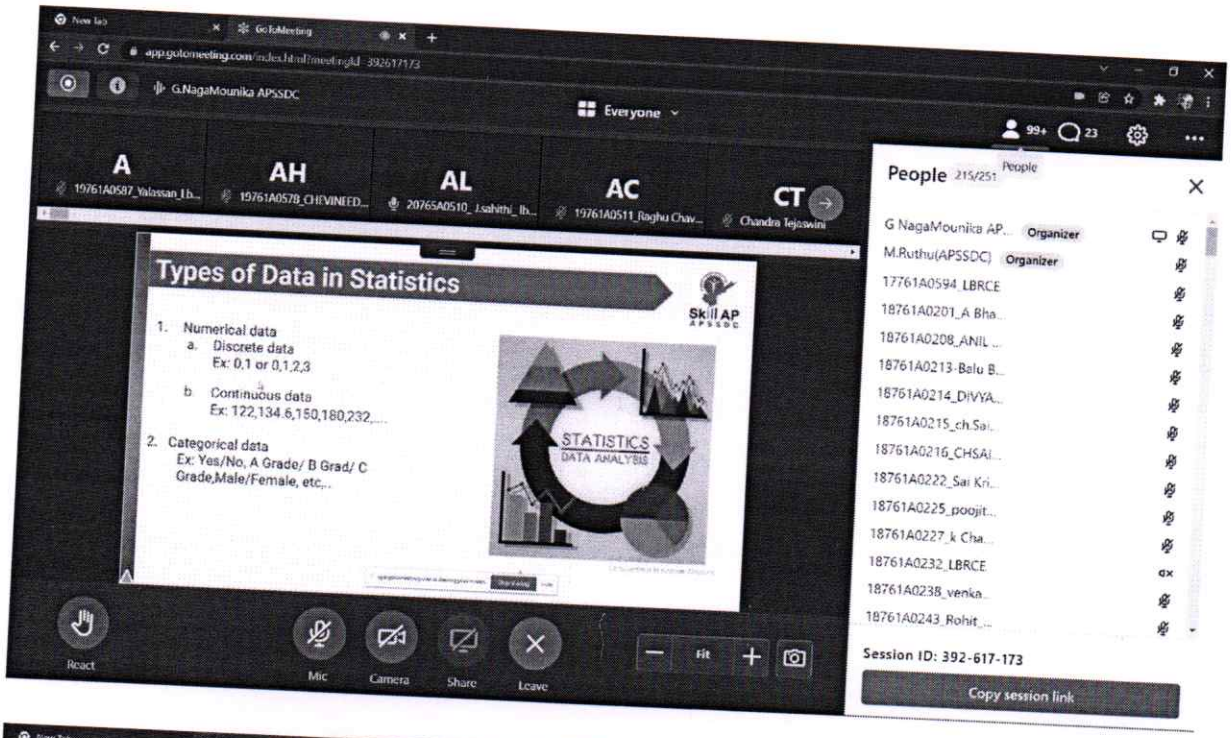
Date: 8th Dec, 2021

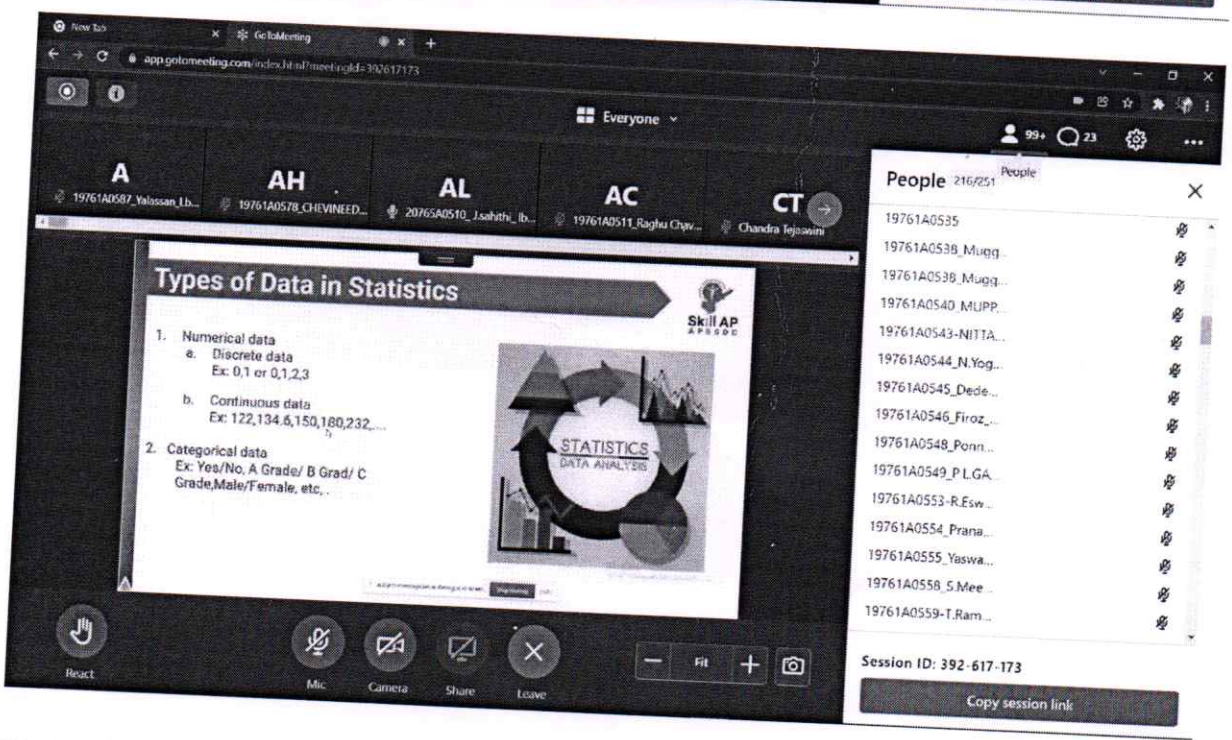
Session: 3

Topic:About Pandas.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 3rd technical session was about the introduction to Pandas and Types of Data Structures. In this we can creating the data, accessing the data, getting the data, Statistics, Filtering the data, Data cleaning using Pandas, identifying duplicates and removing duplicates. The session was ended with the vote of thanks.





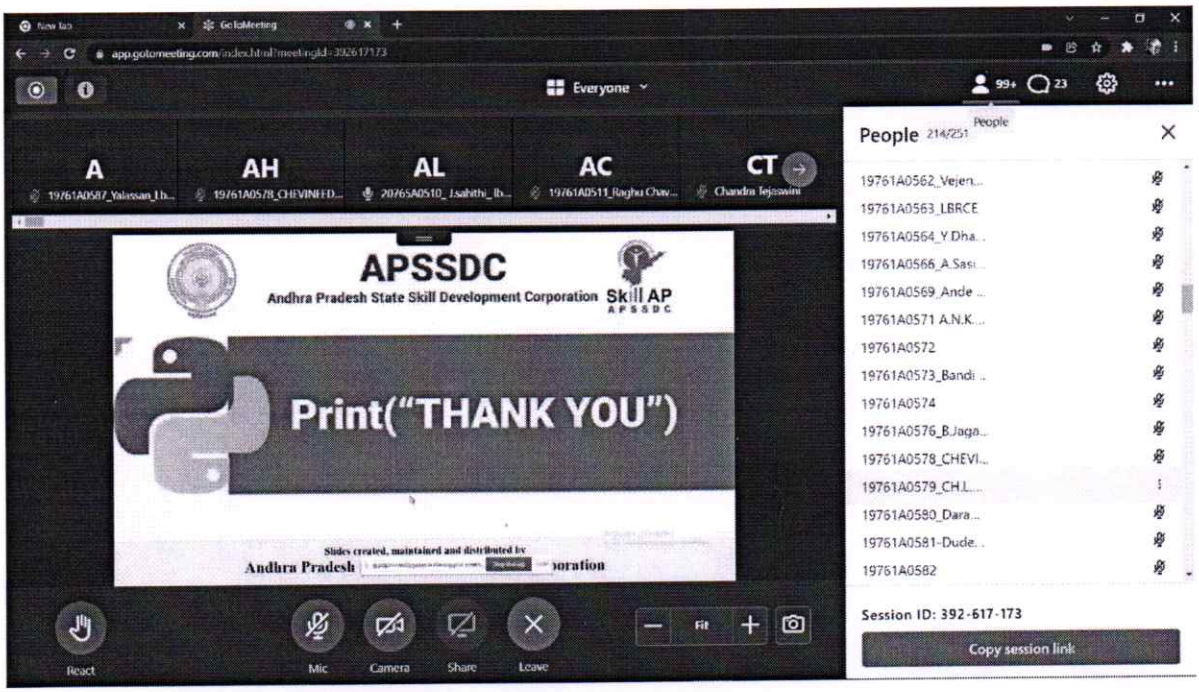
Date: 9th Dec, 2021

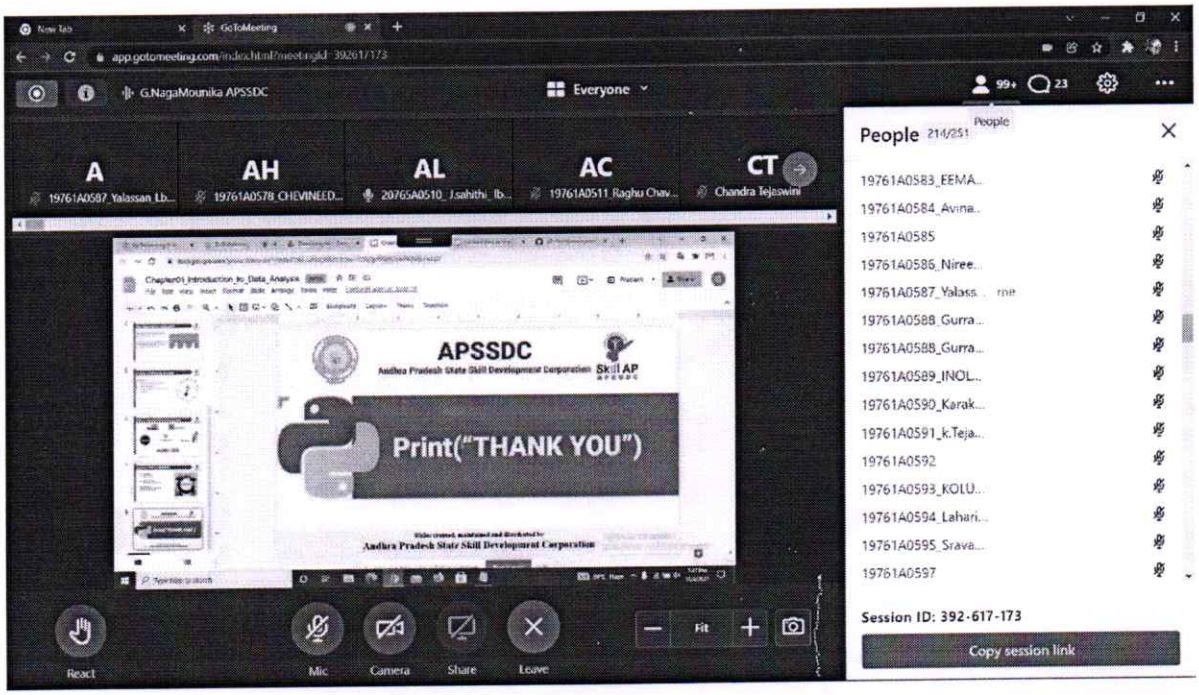
Session: 4

Topic:Cleaning and Encoding Data.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 4th technical session was all about the Cleaning and Encoding Data using Pandas.The next was Handling Missing or Null values, in this there are 4 methods to identify and manipulate missing values. The session was formally ended with the vote of thanks.





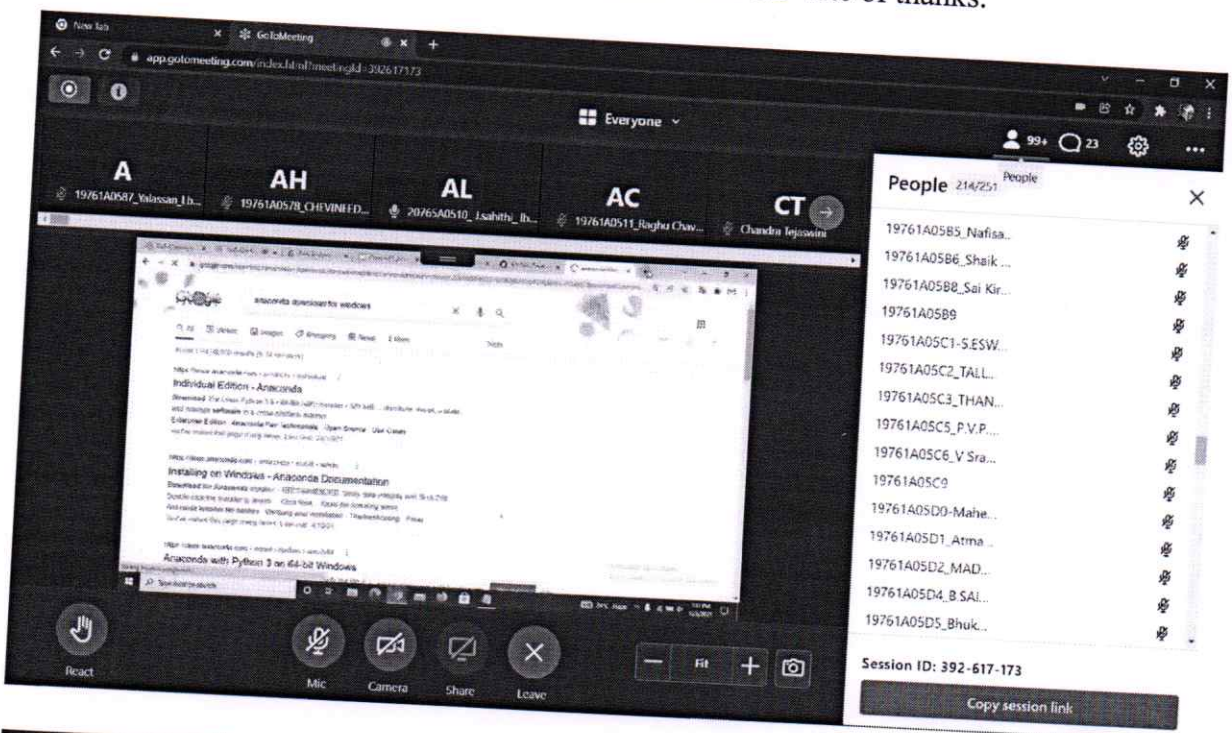
Date: 10th Dec, 2021

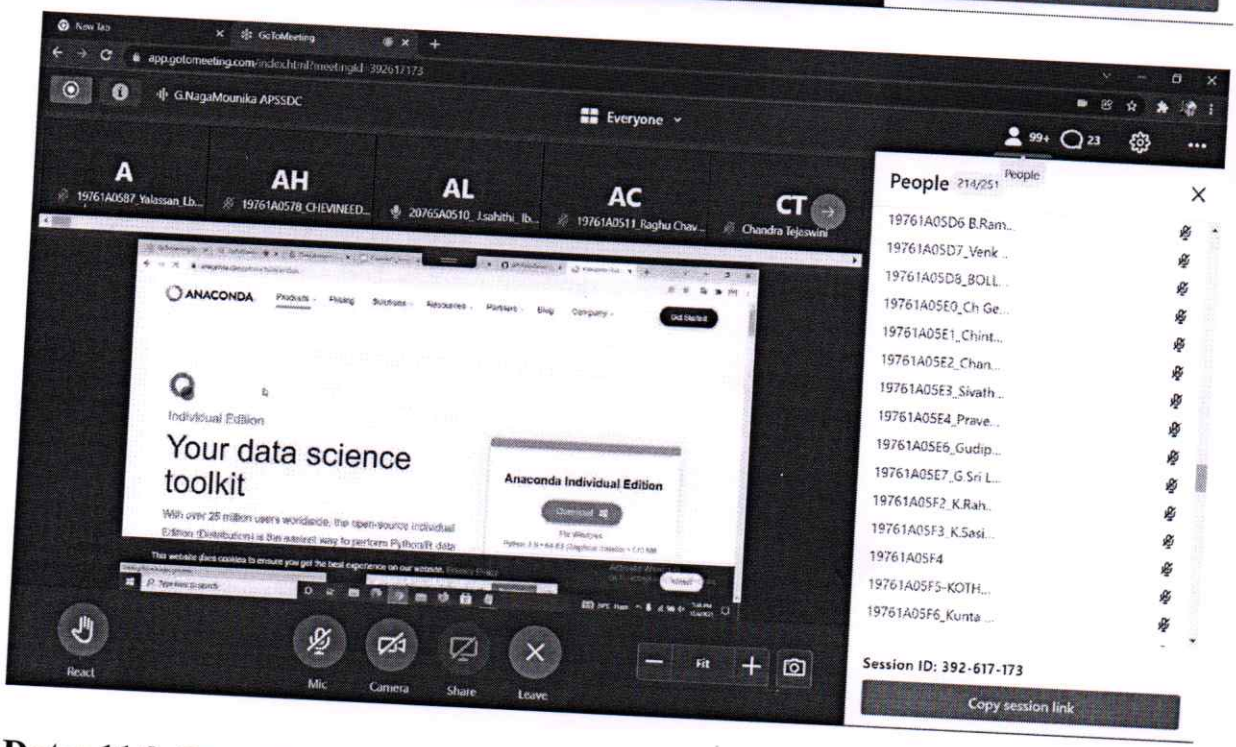
Session: 5

Topic: Visualization.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 5th technical session was about the Visualization. In this there are two types i) Matplotlib: Used to create high quality graphs, figures, plots etc ii) Sea born. This topic also contains different types of plotting. The session was ended with the vote of thanks.





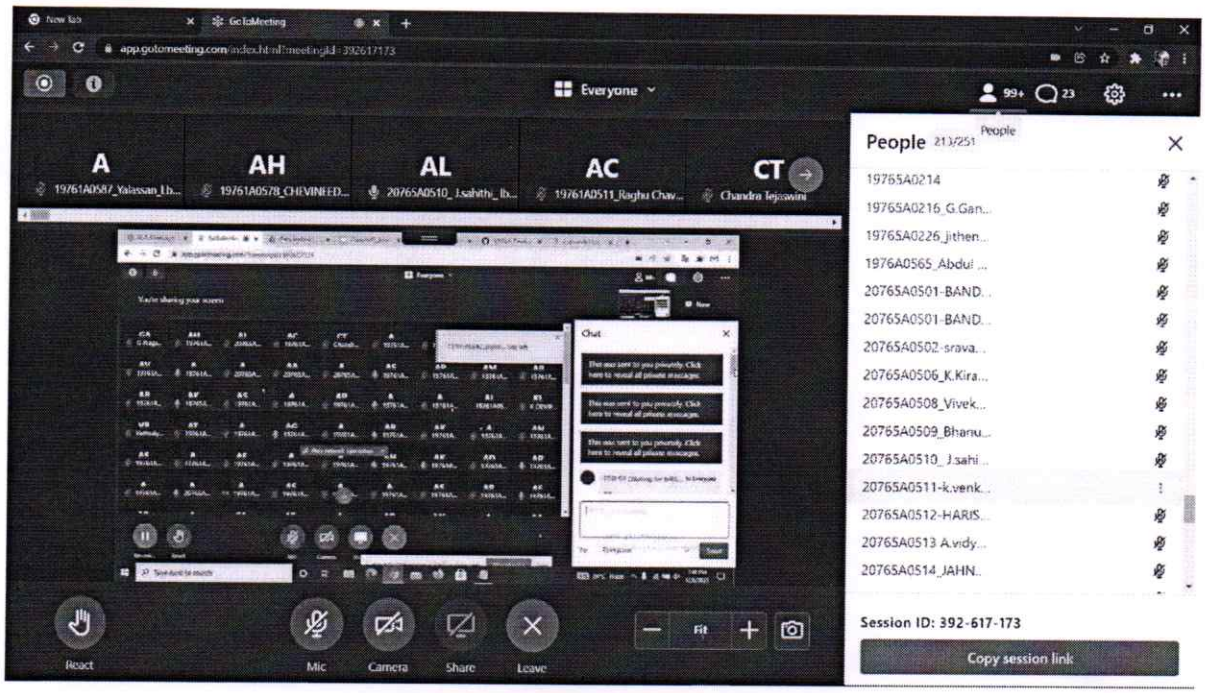
Date: 11th Dec, 2021

Session: 6

Topic: Seaborn.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 6th technical session was about the Seaborn and Supervised Machine Learning. The Seaborn provides the user interface which is attractive and informative statistical plot. The session was ended with the vote of thanks.



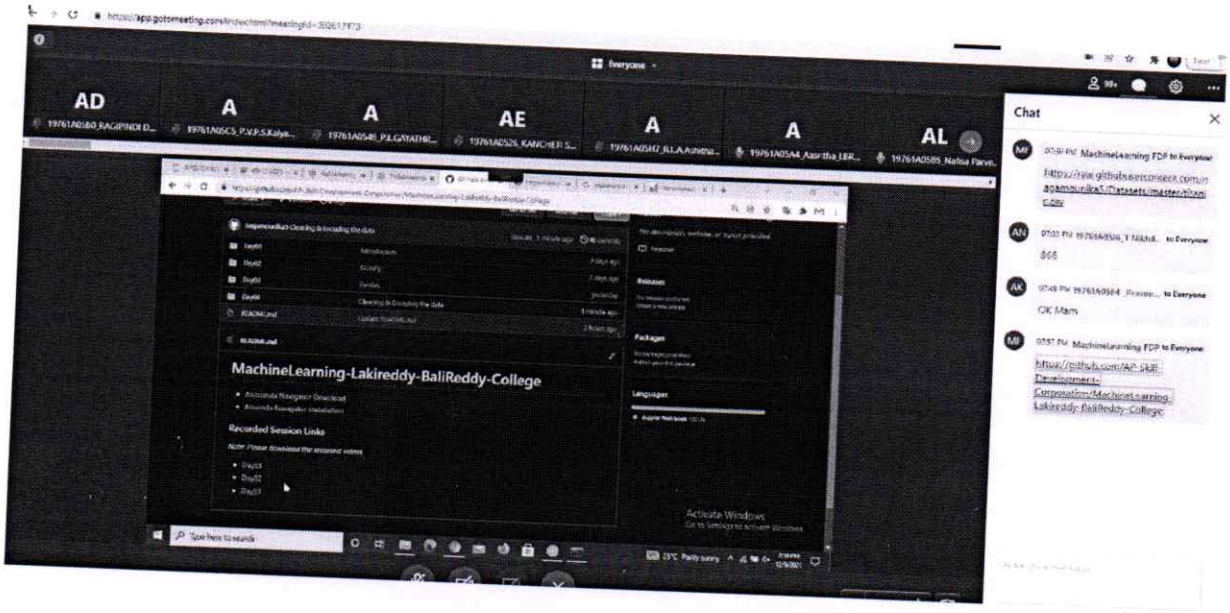
Date: 13th Dec, 2021

Session: 7

Topic: Simple Linear Regression.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 7th technical session was started with the concept of Regression Model, it consists of Linear Regression and Polynomial Regression. Simple Linear Regression is between one independent variable and dependent variable. The session was ended with the vote of thanks.



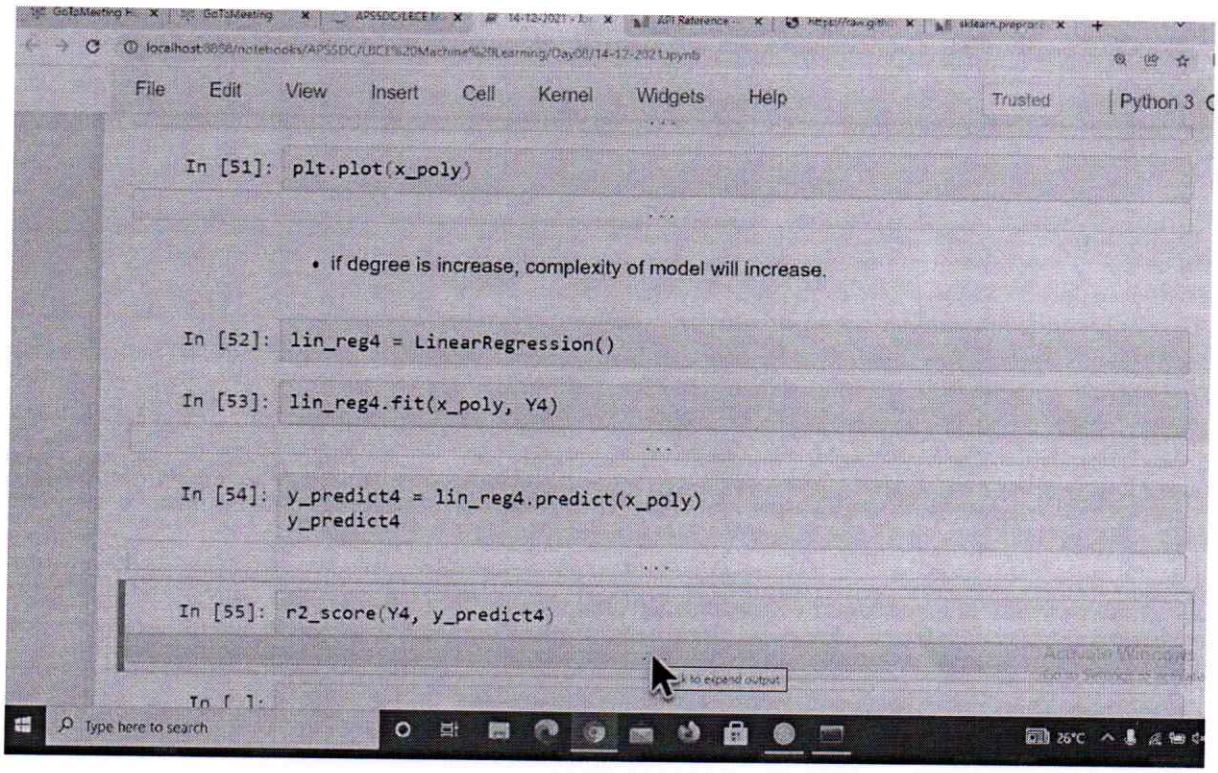
Date: 14th Dec, 2021

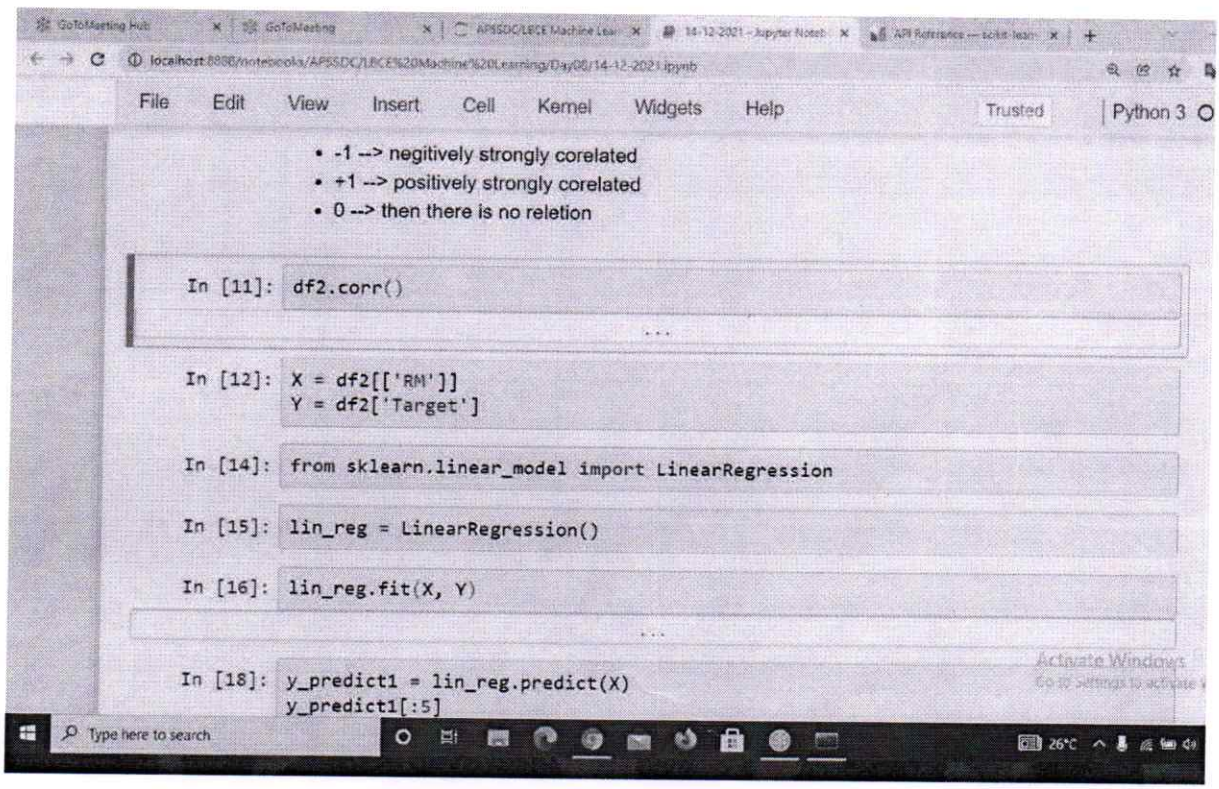
Session: 8

Topic:Multiple Linear Regression & Polynomial.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 8thtechnical session was started with the topic of Evaluation Metrics and Multiple Linear Regression and Polynomial Regression In this linear relation between more than one independent column and one dependent column. The session was ended with the vote of thanks.





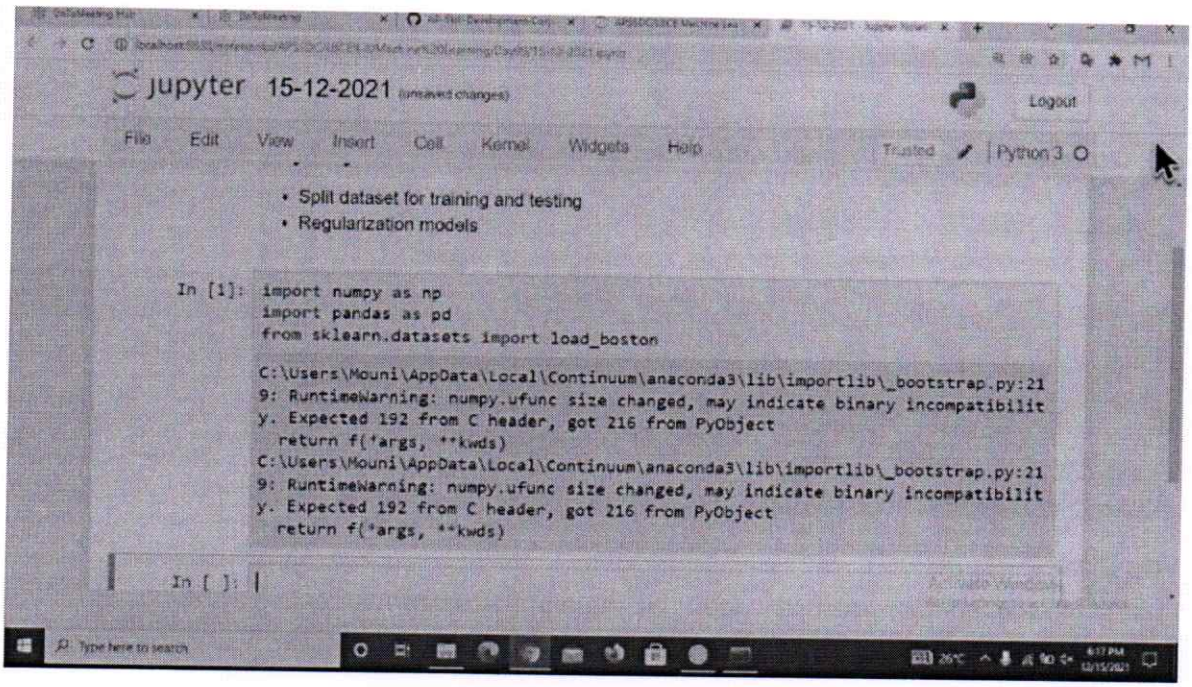
Date: 15th Dec, 2021

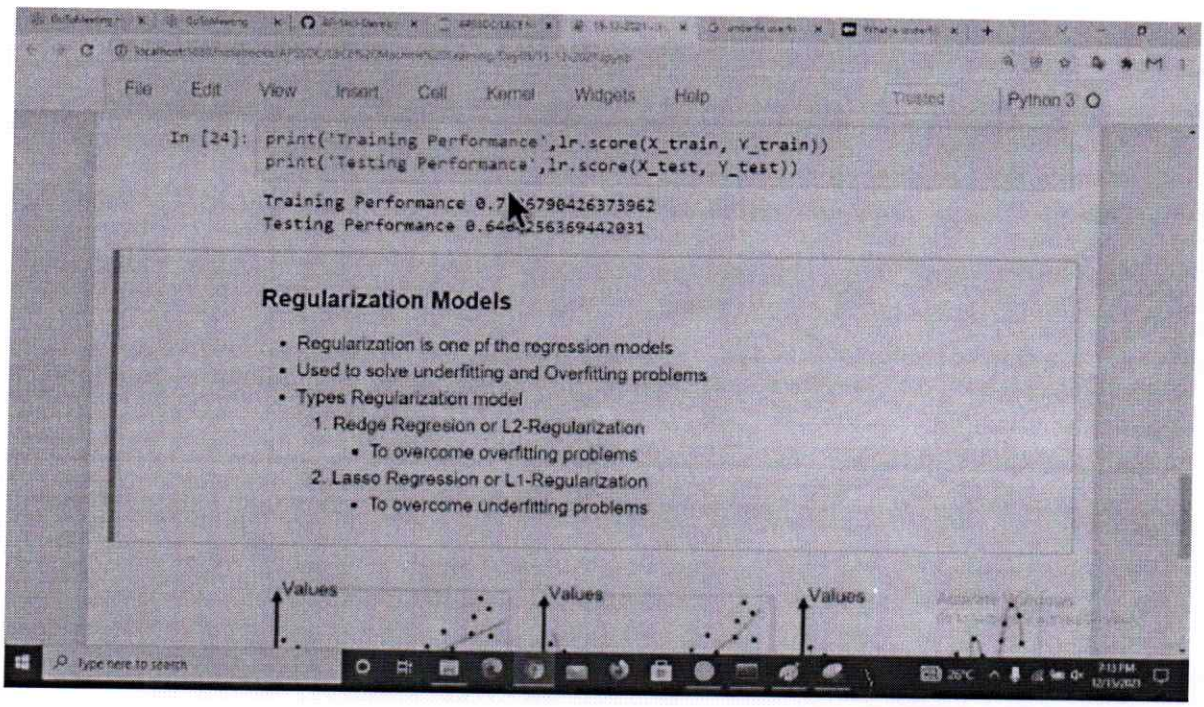
Session: 9

Topic:Splitting Dataset for training and testing.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 9th technical session was started with how to split dataset for training and testing and Regularization model. Regularization model are used to solve underfitting and overfitting problems. There are 2 types of Regularization model: i) Redge Regression ii) Lasso Regression. The session was ended with the vote of thanks.





Date: 16th Dec, 2021

Session: 10

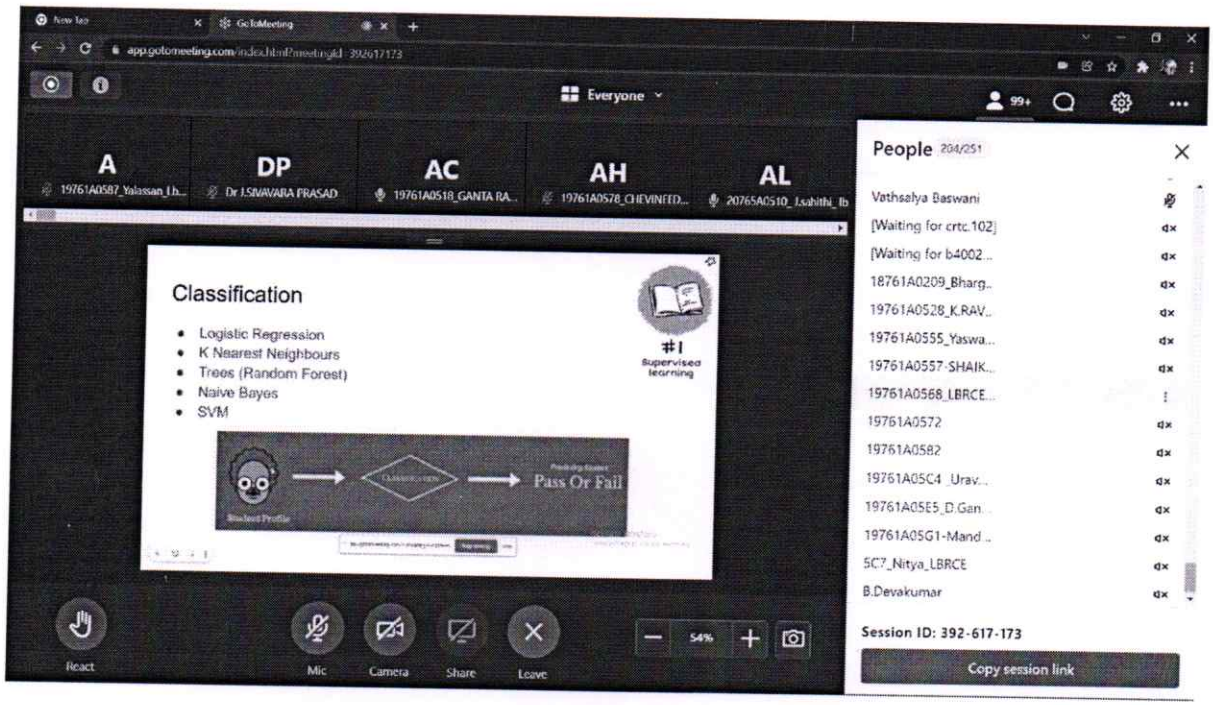
Topic: K Nearest Neighbour's Classification.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 10th technical session was about the K Nearest Neighbour's Classification known as (KNN Classifier). In this we will how does KNN works and Evaluation metrics for classification model.The session was ended with the vote of thanks.

Day Objective

- Classification Models
  - K Nearest Neighbors
  - Logistic Regression
  - Support Vector
  - Tree Models



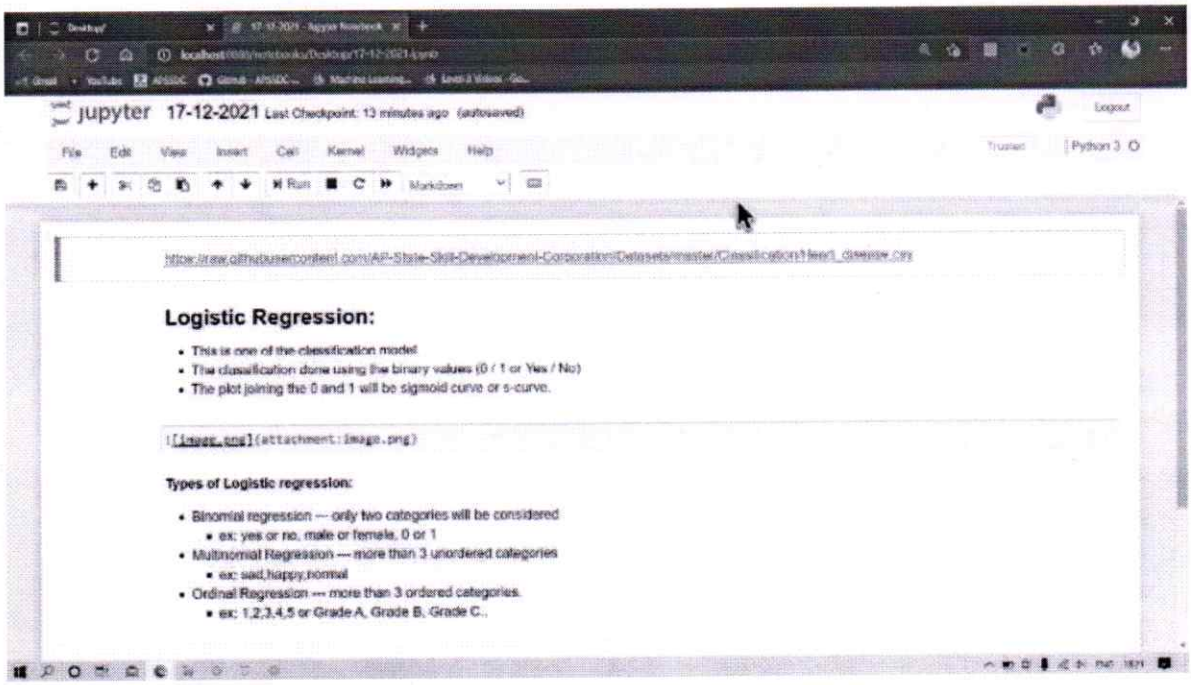
Date: 17th Dec, 2021

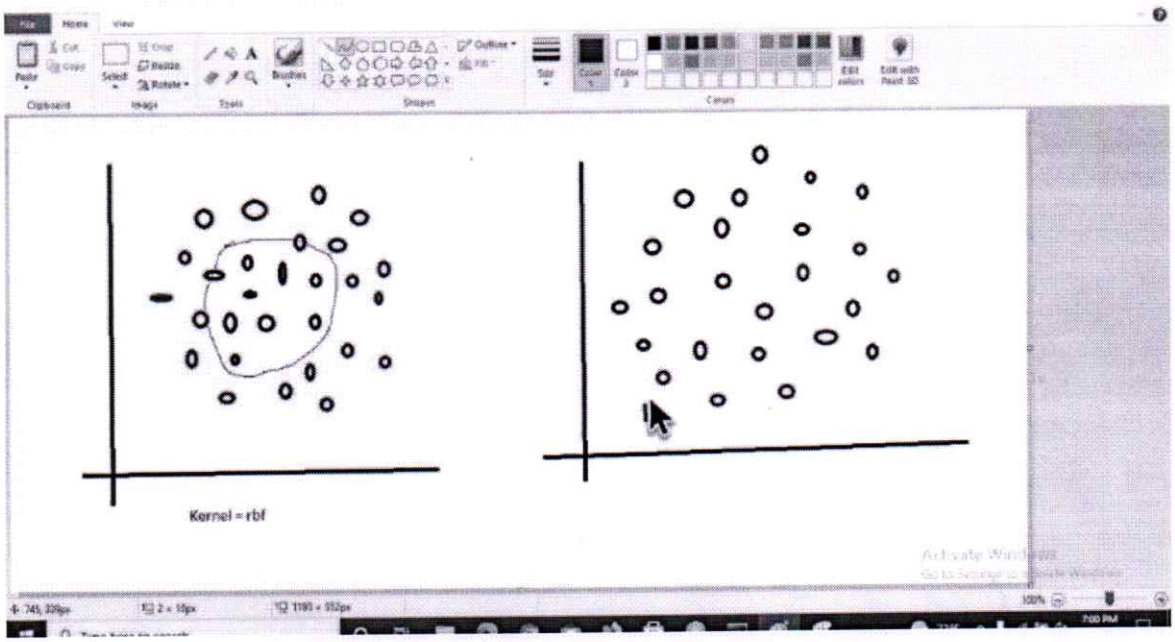
Session: 11

Topic: Logistic regression

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 11th technical session was started with Logistic regression. In this logistic regression model, the primary packages, building and training the model, pandas for data processing, and finally NumPy for working with arrays





Date: 18th Dec, 2021

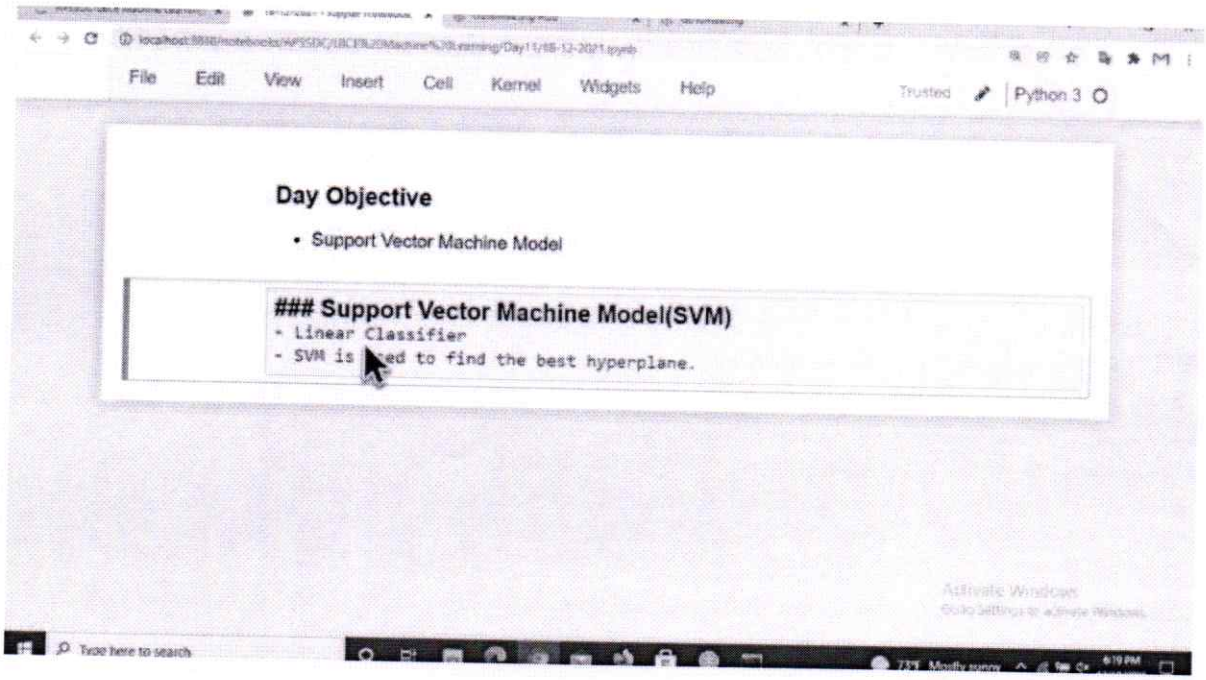
Session: 12

Topic: Support Vector Machine.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 12th technical session was started with the introduction to Support Vector Machine, also known as SVM Model. A support vector machine allows us to classify data that's linearly separable. If it isn't linearly separable, we can use the kernel trick to make it work. However,

for text classification it's better to just stick to a linear kernel.The session was ended with the vote of thanks.



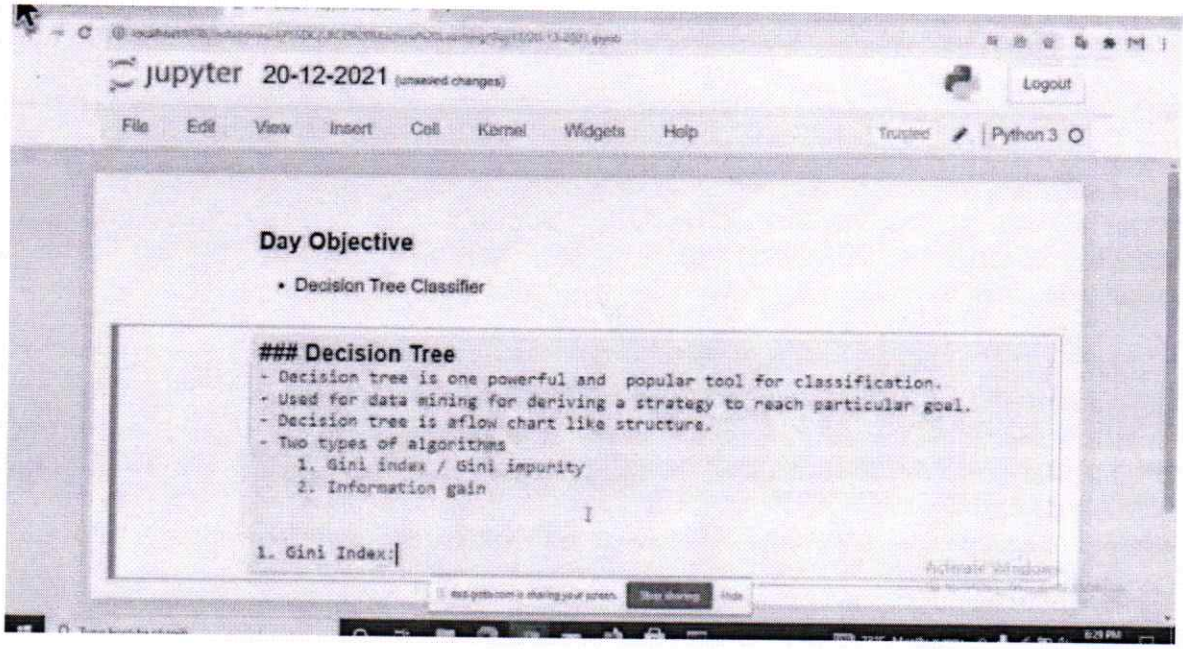
Date: 20th Dec, 2021

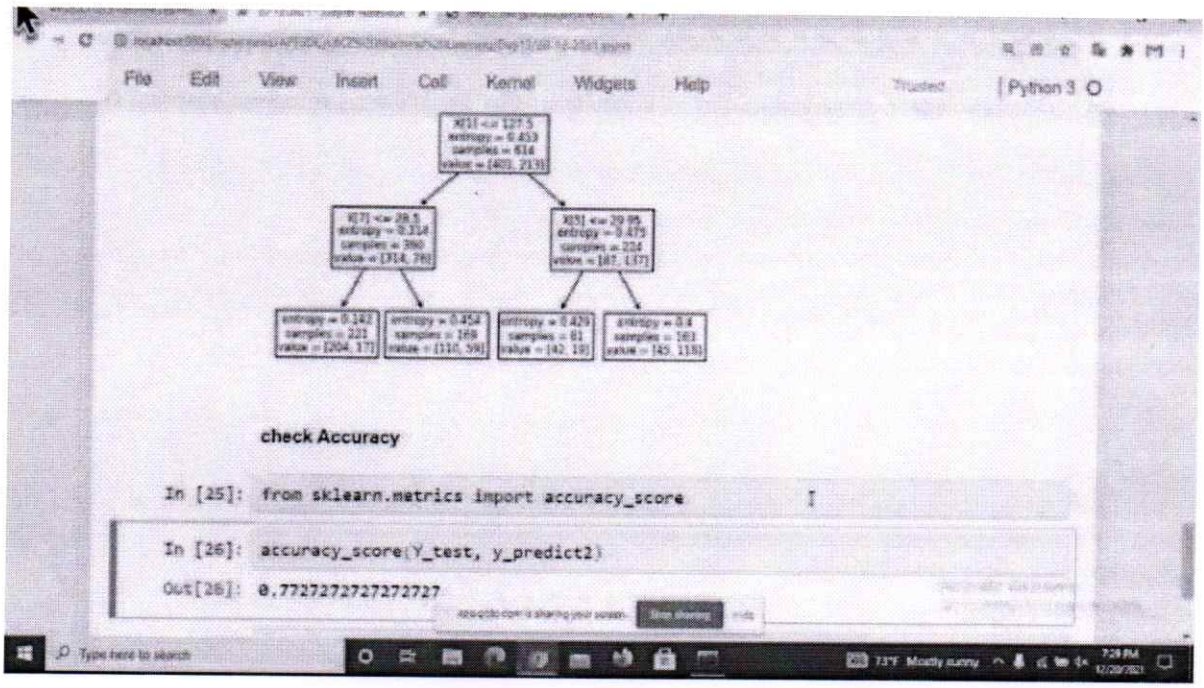
Session: 13

Topic: Decision Tree Model.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 13th technical session was about the Decision Tree, it is a powerful and popular tool for classification and used for data mining for deriving a strategy to reach particular goal. There are 2 types of algorithms i) Gini Index ii) Information Gain and its advantages. The session was ended with the vote of thanks.





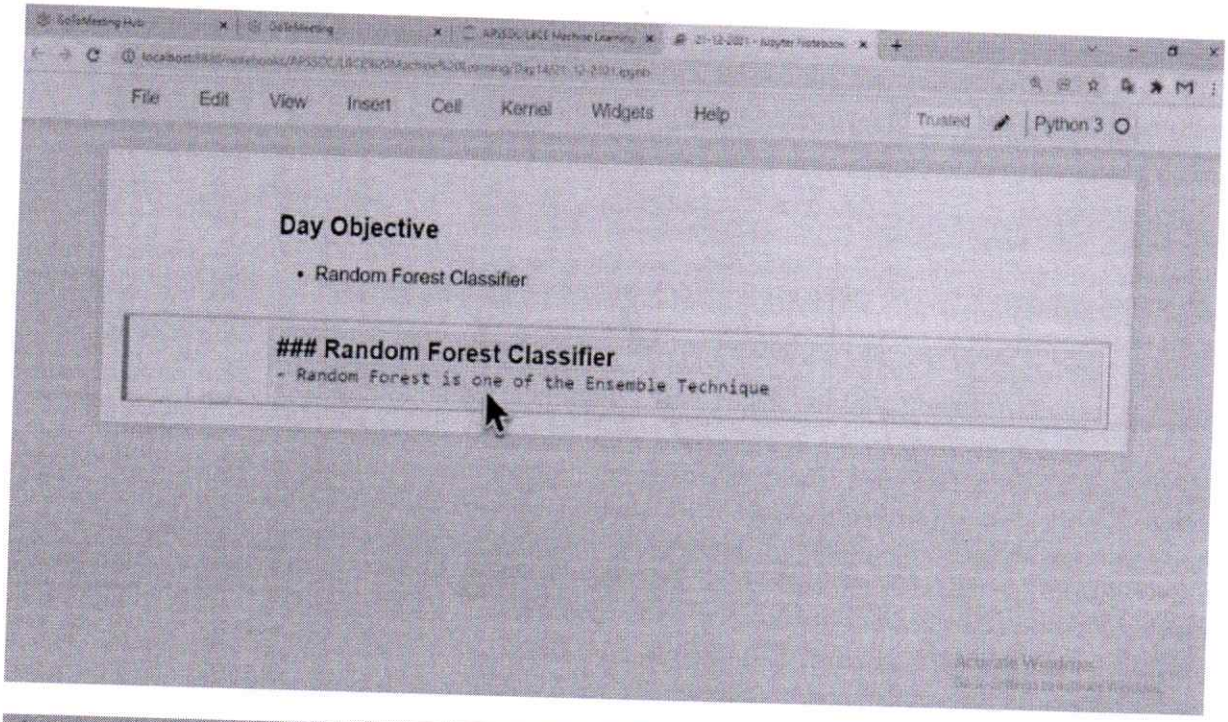
Date: 21st Dec, 2021

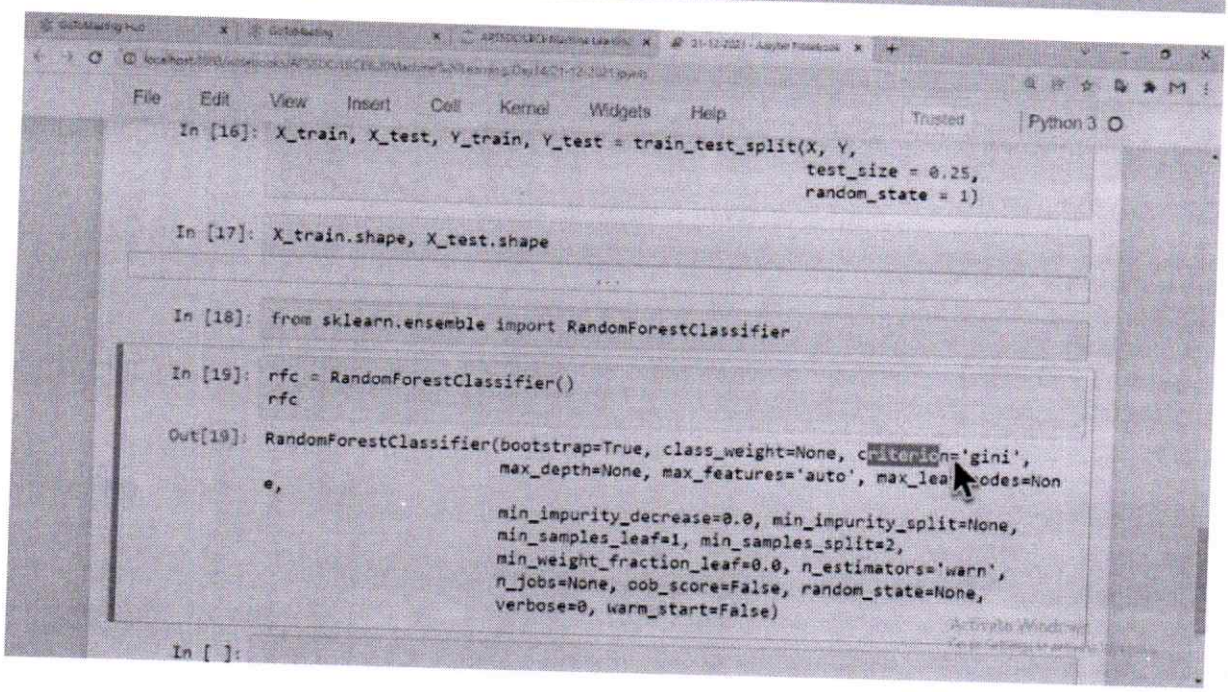
Session: 14

Topic: Random Forest Classifier.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 14th technical session was about Random Forest Classifier, discussed how randomly perform row sampling and feature sampling from the dataset for every model. Explain the step by step sample implementation of Random Forest Regression.





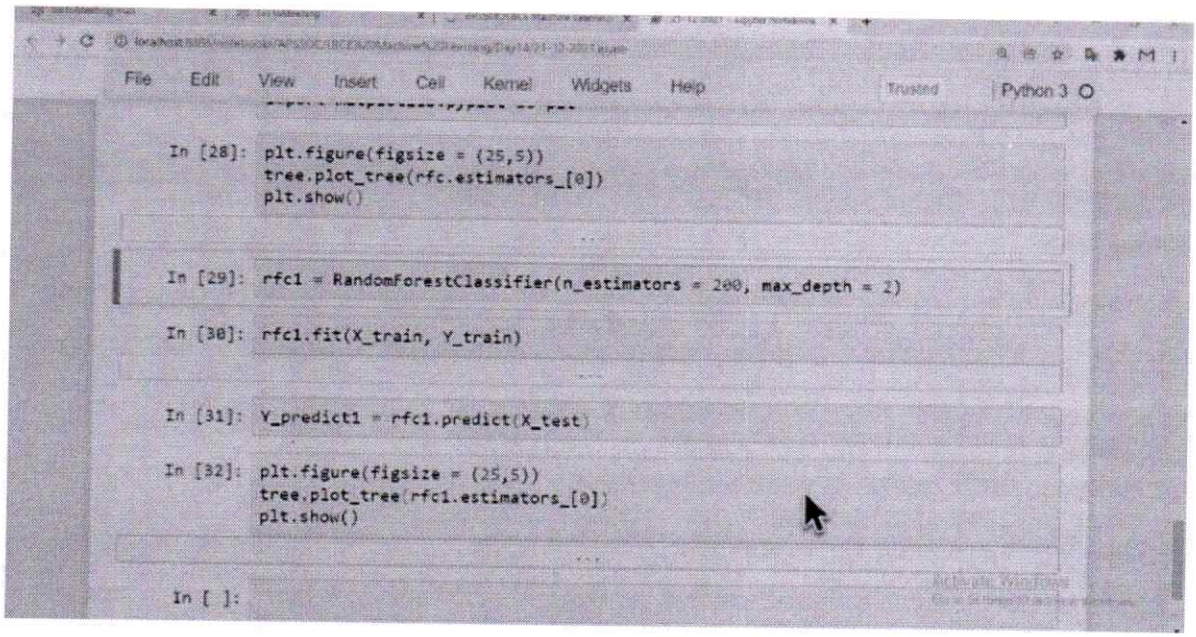
Date: 22nd Dec, 2021

Session: 15

Topic: Unsupervised Machine Learning.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 15th technical session was about Unsupervised Machine Learning, in this discussed unsupervised machine learning methods, how network trains without labels, finds patterns and splits data into the groups



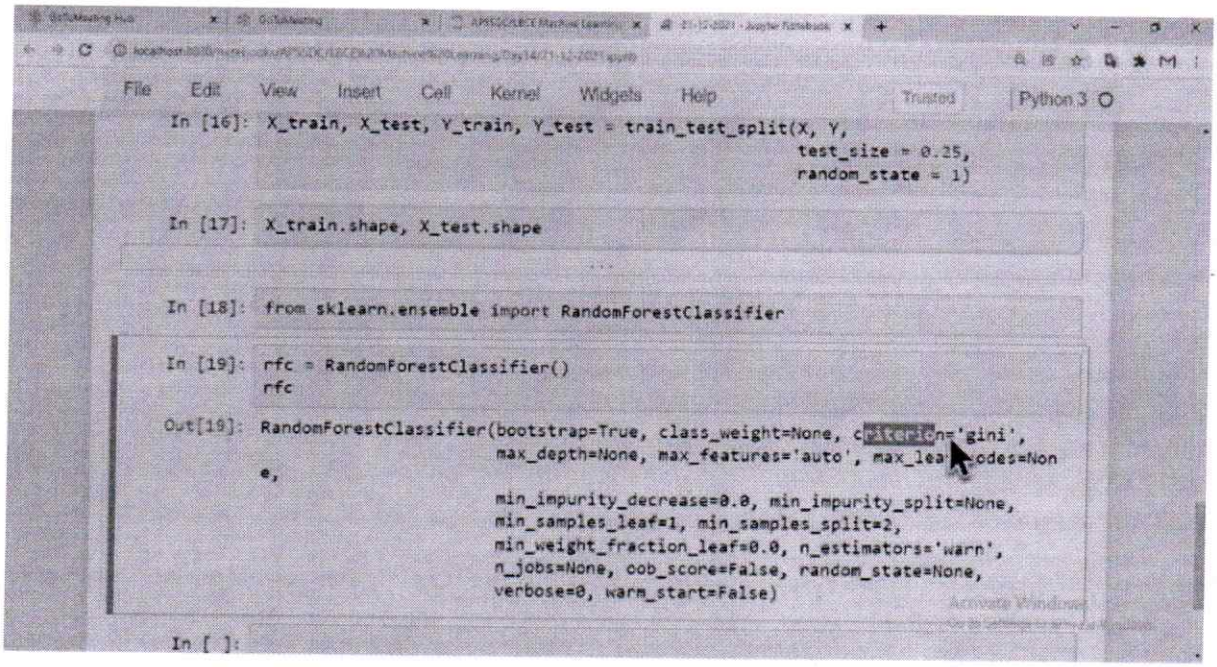
Date: 23rd Dec, 2021

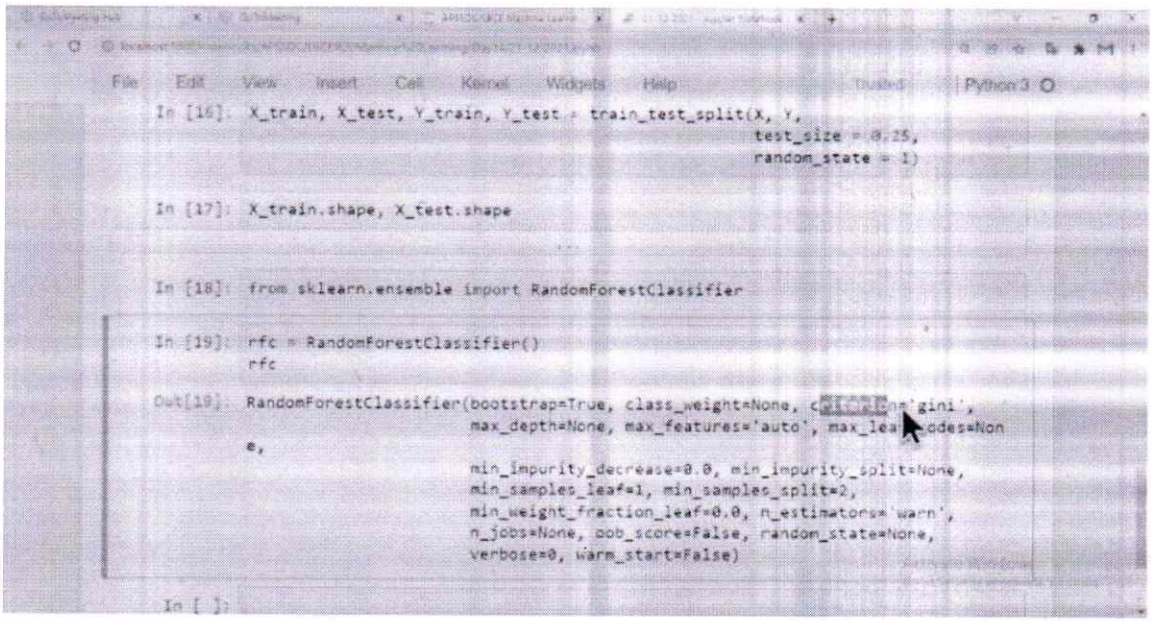
Session: 16

Topic: Clustering methods and Dimensionality Reduction.

Resource Person: Golla Naga Mounika, Trainer, APSSDC.

The 16th technical session was about Clustering methods and Dimensionality Reduction introducing various clustering methods and k-means algorithm and also discussed Dimensionality Reduction ,how it used in data analytics and data science to visualize data, efficiently.





Date: 24th Dec, 2021

Examination

A final exam was conducted in the afternoon session to evaluate the performance of the participants in the last day of STTP.

Valedictory Function

Golla Naga Mounika, Trainer, APSSDC shared happiness in being part of the program as a resource person and then congratulated the coordinators and organizing committee of CSE Dept,LBRCE, for the effective conduction of the STTP. Later the participants were asked to give their feedback on the STTP. Finally, the session was formally ended with the vote of thanks.

Press Report


సాక్షి 30/12/21

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LIBRARY

Coordinator

(Dr.S.Jayaprada & Dr.P.Ashok Reddy)

Head of the Department

(Dr.D.Veeraiah)