



RAMAIAH

College of Arts, Science &
Commerce

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M S Ramaiah College of Arts, Science and Commerce

Re-accredited 'A' by NAAC, Permanently Affiliated to Bengaluru City University,
Approved by Government of Karnataka, Approved by AICTE, New Delhi,

Recognized by UGC under 2f & 12B of UGC act 1956



(National Institutional Ranking Framework, Ministry of Education, Govt of India)
Ranked 62nd in NIRF India Ranking by MHRD, New Delhi
DBT Star College Scheme

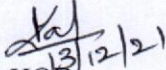
Ref: MSRCASC/CSc/21-22/011

Date: 13/12/2021

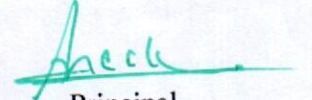
CIRCULAR

Department of Computer Science

This is to inform to all the BCA III semester students that the department has planned to conduct a Value added course on “**Machine Learning using Python**” from 5th to January 2022. Students who are interested can enrol your names to Mrs Suma C on or before 24th December 2021. Free registration. The resource person is Ms. Geetanjali R, Senior Teaching Assistant, Department of Master of Computer Applications, MSRIT, Bengaluru.


HOD

Head Of The Department Of Computer Science
M. S. Ramaiah College Of
Arts Science And Commerce
MSRIT Post, Bangalore - 560 054


Principal

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

About The College

Ramaiah College of Arts, Science and Commerce was established in 1994 by our founder Late Dr. M S Ramaiah offering both under graduate and post graduate degrees offered by Bengaluru Central University approved by AICTE, New Delhi, recognized by the Government of Karnataka. The college is also recognized by UGC under 2f and 12b of UGC Act 1956, re-accredited "A" grade by NAAC and has ranked 62nd in a NIRF ranking and 1st among the best colleges of Karnataka

About The Department

The Computer Science Department of RCASC aims to educate students in the science and practice of IT. The emphasis is on hands on practical training of software development.. The program enables the student to be updated on the latest revolution on technology and equips the students with the required skills and knowledge to assimilate into the industry at ease.

Objective & Outcome of the Program

Objective: To develop skills required for ML Technologies using Python to analyze data ,solving ML problems like Regression, Classification, and Clustering using ML algorithms.

Outcome: Understand how to evaluate models generated from data. Apply the algorithms to a real problem.

Event Coordinator

Suma C, Asst.Professor, MSRCASC

Patrons

Dr. M R Jayaram Chairman, GEF
Sri M R Janakiram Director, GEF
Sri M R Kodandaram Director, GEF
Sri B S Ramprasad Chief Executive GEF(E & GS)
Sri G Ramachandra Chief of Finance GEF(E & GS)

Organizing Committee

Dr A Nagarathna Principal, RCASC.
Dr Prathiba V Kalburgi, HOD
Mrs Haripriya G S, Assistant professor
Mr Lakshminipathi V Assistant Professor
Mrs R Srividya, Assistant Professor
Mrs Dhanashree Vaishali, Asst. Professor
Mrs Shilpa Nayak Asst. Professor
Mrs Savitri K Asst. Professor

Resource Person

Mrs. Geetanjali R, Senior Teaching Assistant

Department of MCA, MSRIT

Course Outline

Python program to understand Central Tendency Measures:
Mean, Median, Mode, Variance, Standard Deviation
Python Basic Libraries , Libraries for ML application
Python program to implement Simple Linear Regression
Implementation of Multiple Linear Regression for House
Price Prediction using sklearn,
Decision tree using sklearn and its parameter tuning



Value Added Course on MACHINE LEARNING



5th January to 3rd February 2022

① Venue: Online

Registration link:

<https://forms.gle/gzZTrVPHQCpaueC46>

Meeting link : <http://meet.google.com/ats-jxsk-xvz>

Beneficiaries : Second year students

Organized by

Computer Science Department
M S Ramaiah College of Arts, Science &
Commerce, Bangalore-54





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Department of Computer science

Value added course

Title: Machine Learning Using Python

Date: 5th January to 3rd February 2022

Venue: Online

Participants: II Year BCA students

**Resource Person: Geetanjali R, Senior Teaching Assistant, Department of Master of
Computer Applications, MSRIT**

No of Students: 78

Event Coordinator: Suma C

Objective: To develop skills required for ML Technologies using Python to analyse data,
solving ML problems like Regression, Classification, and Clustering using ML algorithms.

Course Outline –

- 1 Python program to understanding computing of
 - a. Central Tendency Measures: Mean, Median, Mode
 - b. Measure of Dispersion: Variance, Standard Deviation
- 2 Programing of Python Basic Libraries such as Statistics, Math, Numpy and Scipy
- 3 Programing of Python Libraries for ML application such as Pandas and Matplotlib
- 4 Python program to implement Simple Linear Regression
- 5 Implementation of Multiple Linear Regression for House Price Prediction
using sklearn
- 6 Implementation of Decision tree using sklearn and its parameter tuning

M S Ramaiah Nagar
MSRIT Post
Bangalore 560 054

T +91 80 2360 0966/8597
+91 80 2360 6905
F +91 80 2360 6213

E principal.msrmasc@gmail.com
W www.msrmasc.edu.in

Principal,
M S Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

The Value Added Education Courses aim to provide additional learner centric graded skill oriented technical training, with the primary objective of improving the employability skills of students. To bridge the skill gaps and make students industry ready.

The first day of the course began with the senior faculty member introducing the resource person to all. The resource person introduced how the industry works. He gave insights into what the industry is looking at and what are the high demand technologies in the industry.

He spoke that it is the 'age of data' that is enriched with better computational power and more storage resources, this data or information is increasing day by day, but the real challenge is to make sense of all the data. Businesses & organizations are trying to deal with it by building intelligent systems using the concepts and methodologies from Data science, Data Mining and Machine learning. Among them, machine learning is the most exciting field of computer science. Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values. Other popular uses include fraud detection, spam filtering, malware threat detection, business process automation (BPA) and predictive maintenance.

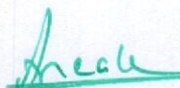
The Resource person gave introduction to python programming language. Python is an interpreted high-level programming language for general-purpose programming. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales. Python features a dynamic type system and automatic memory management. It supports multiple programming paradigms, including object-oriented, imperative, functional and procedural, and has a large and comprehensive standard library. Python interpreters are available for many operating systems

The resource person gave insight about advantages of python., the common libraries used in python. He explained central tendency with an example. To obtain the average behavior of the data set, the measures of central tendency that include **mean, median, and mode** are calculated. He also discussed the basics of linear regression and its implementation in the Python programming language. Linear regression is a statistical method for modelling relationships between a dependent variable with a given set of independent variables.

He spoke about Decision Tree which is **one of the most powerful and popular algorithm**. Decision-tree algorithm falls under the category of supervised learning algorithms. It works for both continuous as well as categorical output variables and the uses of it

Several techniques used by the resource person which included questions and answer, brainstorming, group discussion, practical implementation of some of the topics to make sure all the participants get the whole concepts and they practise what they learn. The last day session concluded with the presentation of a vote of thanks from RCASC's senior faculties from the department of Computer Science

Outcome: Understand how to evaluate models generated from data. Apply the algorithms to a real problem.



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A.S. Ramaiah College of Arts, Science & Commerce
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Department of Computer Science**Value Added Course :Machine Learning using Python**

| | Timestamp | Email address | Name | Register Number | Please select the semester you are currently studying |
|----|-------------------|--------------------------------|-----------------------------|-----------------|---|
| 1 | 2-3-2022 9:33:35 | tusharpokar77@gmail.com | TUSHAR POKAR | R2017672 | 4th |
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| 17 | 2-3-2022 10:38:37 | fuhaidsanu@gmail.com | FUHAIID SANEEN T C | R2017617 | 4th |
| 18 | 2-3-2022 10:39:00 | tejasvk2000@gmail.com | TEJAS VIDYADHAR KULKARNI | R2017670 | 4th |
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| 20 | 2-3-2022 10:39:17 | yeshureddy91@gmail.com | GORANTLA YESHASWINI | R2017620 | 4th |
| 21 | 2-3-2022 10:39:19 | harshsingh25102002@gmail.com | HARSH | R2017621 | 4th |
| 22 | 2-3-2022 10:39:23 | harshanalwar99@gmail.com | | | 4th |
| 23 | 2-3-2022 10:39:30 | athota.2002@gmail.com | HEMA ATHOTA | R2017623 | 4th |
| 24 | 2-3-2022 10:39:45 | hemanshibhatt2003@gmail.com | HEMANSHI BHATT | R2017624 | 4th |
| 25 | 2-3-2022 10:40:01 | Inderdeepsingh576@gmail.com | INDERDEEP SINGH | R2017625 | 4th |
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| 27 | 2-3-2022 10:41:06 | thanidha0314@gmail.com | KEERTHI T R | R2017627 | 4th |
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| 29 | 2-3-2022 10:41:58 | m.harikishore2001010@gmail.com | | | 4th |
| 30 | 2-3-2022 10:49:50 | manjuhd6789@gmail.com | MANJU MURTHY K | R2017630 | 4th |
| 31 | 2-3-2022 10:50:57 | nihalpeek@gmail.com | MOHAMMED NIHAL P K | R2017631 | 4th |
| 32 | 2-3-2022 10:51:08 | mdsahil04072002@gmail.com | MOHAMMED SAHIL | R2017632 | 4th |
| 33 | 2-3-2022 10:51:20 | Monazirk51@gmail.com | MONAZIR KHAN | R2017633 | 4th |
| 34 | 2-3-2022 10:51:27 | hashikanamburi2466@gmail.com | N.M.HASHIKA NAMBURI | R2017634 | 4th |
| 35 | 2-3-2022 10:51:45 | salmanummer007@gmail.com | SALMAN UMER | R2017656 | 4th |
| 36 | 2-3-2022 10:51:47 | naveentn484@gmail.com | NAVEEN E | R2017636 | 4th |
| 37 | 2-3-2022 10:51:48 | nishanthnv2904@gmail.com | NISHANTH N V | R2017637 | 4th |

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|----|-------------------|-------------------------------|------------------------|----------|-----|
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| 47 | 2-3-2022 10:55:11 | ravikiran4216@gmail.com | RAVI KIRAN B | R2017647 | 4th |
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| 49 | 2-3-2022 10:57:06 | bsmanish2002@gmail.com | VIGNESH B S | R2017674 | 4th |
| 50 | 2-3-2022 10:57:35 | rohan.ashok55@gmail.com | ROHAN A | R2017650 | 4th |
| 51 | 2-3-2022 10:58:01 | roshnim_1629@gmail.com | ROSHNI M | R2017651 | 4th |
| 52 | 2-3-2022 10:59:59 | rushabhbor1310@gmail.com | RUSHABH MOHAN BHOP | R2017652 | 4th |
| 53 | 2-3-2022 11:00:30 | sadhanashyam2204@gmail.com | SADHANA S | R2017653 | 4th |
| 54 | 2-3-2022 11:02:33 | Saikiranvvr@gmail.com | SAI KIRAN V R | R2017654 | 4th |
| 55 | 2-3-2022 11:03:33 | salmanqhureshi654@gmail.com | SALMAN PASHA S | R2017655 | 4th |
| 56 | 2-3-2022 11:04:21 | abhiapexsh@gmail.com | ABHISHEK.A. | R2017604 | 4th |
| 57 | 2-3-2022 11:05:59 | sandyjack0306@gmail.com | SANDEEP KUMAR M | R2017657 | 4th |
| 58 | 2-3-2022 11:07:41 | Soniasarabs27@gmail.com | SONIA SARAH S | R2017664 | 4th |
| 59 | 2-3-2022 11:07:48 | prathik056@gmail.com | PRATIK PUNJ | R2017643 | 4th |
| 60 | 2-3-2022 11:08:06 | VIGNESH.LOKESH2002@GMAIL.COM | VIGNESH LOKESH T C | R2017675 | 4th |
| 61 | 2-3-2022 11:11:27 | akashroman1989@gmail.com | AKASH S | R2017605 | 4th |
| 62 | 2-3-2022 12:09:07 | shilpatweet@gmail.com | SHILPA V | R2017662 | 4th |
| 63 | 2-3-2022 12:09:21 | Kshreehari8@gmail.com | SHREEHARI K | R2017663 | 4th |
| 64 | 2-3-2022 12:10:08 | sanjayshetty1d@gmail.com | SANJAY KUMAR K | R2017658 | 4th |
| 65 | 2-3-2022 12:10:25 | amanbarik998@gmail.com | AMAN BARIK | R2017607 | 4th |
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| 67 | 2-3-2022 12:10:35 | sunilgope2003@gmail.com | SUNIL GOPE | R2017667 | 4th |
| 68 | 2-3-2022 12:10:42 | Sheelabalu003@gmail.com | SHEELA B | R2017661 | 4th |
| 69 | 2-3-2022 12:10:49 | suyashsumant18@gmail.com | SUYASH SUMANT | R2017669 | 4th |
| 70 | 2-3-2022 12:11:07 | nalok2002@gmail.com | ALOK N | R2017606 | 4th |
| 71 | 2-3-2022 12:11:14 | thomaspk98@gmail.com | THOMAS P KURIAN | R2017671 | 4th |
| 72 | 2-3-2022 12:11:18 | kesavanjk333@gamil.com | KESAVAN S | R2017601 | 4th |
| 73 | 2-3-2022 12:11:23 | Ujwalgowda2927@gmail.com | UJWAL R | R2017673 | 4th |
| 74 | 2-3-2022 12:11:33 | sanketkulkarni1947@gmail.com | SANKET S KULKARNI | R2017659 | 4th |
| 75 | 2-3-2022 12:11:38 | amudhasrinivasan265@gmail.com | AMUDHA S | R2017608 | 4th |
| 76 | 2-3-2022 12:11:45 | vikrantvir@gmail.com | VIKRANT VIR | R2017676 | 4th |
| 77 | 2-3-2022 12:11:51 | vindhyaeshwar06@gmail.com | VINDHYA V R | R2017677 | 4th |
| 78 | 2-3-2022 12:11:56 | Shaliniraj4994@gmail.com | SHALINI M | R2017660 | 4th |
| 79 | 2-3-2022 12:15:45 | yathysuresh8@gmail.com | YATHY SURESH | R2017679 | 4th |
| 80 | 2-3-2022 12:25:45 | yeshaswini832@gmail.com | YESHASWINI G | R2017680 | 4th |

Anick

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

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Ranked 62nd in NIRF India Ranking by MHRD, New Delhi
DBT Star College Scheme**Department: BCA****Name of the Program: Machine Learning using Python****Year: 2021-22****Assessment procedure for value added course: Machine Learning using python****Objective: To develop skills required for ML Technologies using Python to analyse data, solving ML problems like Regression, Classification, and Clustering using ML algorithms.**

The Department of computer science had organized value added course from 05/01/2022 to 03/2/2022 for BCA students. Total of 78 students had participated in this course. The course duration was 30 hours.

The certificates were given to all the participants after successfully completion of the course by assessing their knowledge gained during this course. The gained knowledge was assessed with the help of MCQ's.

Assessment procedure:

| Criteria | Marks |
|------------|-------|
| MCQ | 20 |
| Attendance | 10 |
| Practicals | 10 |
| Total | 40 |

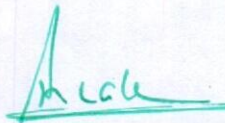
Outcome: Understand how to evaluate models generated from data. Apply the algorithms to a real problem.M S Ramaiah Nagar
MSRIT Post
Bangalore 560 054T +91 80 2360 0966/8597
+91 80 2360 6905
F +91 80 2360 6213E principal.msrmcasc@gmail.com
W www.msrmcasc.edu.in**Principal,**
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Department: BCA

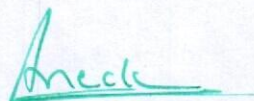
Name of the Program: Machine Learning Using Python

MCQ's

- 1: What is true about Machine Learning?
 - A. Machine Learning (ML) is that field of computer science
 - B. ML is a type of artificial intelligence that extract patterns out of raw data by using an algorithm or method.
 - C. The main focus of ML is to allow computer systems learn from experience without being explicitly programmed or human intervention.
 - D. All of the above
- 2: Different learning methods does not include?
 - A. Introduction
 - B. Analogy
 - C. Deduction
 - D. Memorization
- 3: Which of the following are ML methods?
 - A. based on human supervision
 - B. supervised Learning
 - C. semi-reinforcement Learning
 - D. All of the above
- 4: In Model based learning methods, an iterative process takes place on the ML models that are built based on various model parameters, called ?
 - A. mini-batches
 - B. optimized parameters
 - C. hyper parameters
 - D. super parameters
- 5: Application of Machine Learning is
 - A. email filtering
 - B. Sentimental Analysis
 - C. Face Recognition
 - D. All the Above
- 6: What is the maximum length of a Python identifier?
 - A.32
 - B.16
 - C.128
 - D. No fixed size is specified
- 7: How is a code block indicated in Python?
 - A. Brackets
 - B. Indentation
 - C. Key
 - D. None of the above


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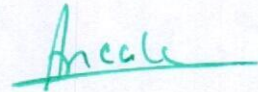
- 8: What will be the output of the following code snippet?
- ```
Print (type (5 / 2))
Print (type (5 // 2))
```
- A. float and int  
B. int and float  
C. float and float  
D. int and int
- 9: Which of the following concepts is not a part of Python?
- A. Pointers  
B. Loops  
C. Dynamic typing  
D. All the above
- 10: Which of the following functions converts date to corresponding time in Python?
- A. strptime ()  
B. strftime ()  
C. Both A and B  
D. None of the above
- 11: As what datatype are the \*args stored, when passed into a function?
- A. List.  
B. Tuple.  
C. Dictionary.  
D. None of the above.
- 12: Which of the following blocks will always be executed whether an exception is encountered or not in a program?
- A. try  
B. except  
C. finally  
D. None of These
- 13: Which of the following are modules/libraries in Python?
- A. NumPy  
B. Pandas  
C. Matplotlib  
D. All of the above
- 14: Which of the following libraries allows to manipulate, transform and visualize data easily and efficiently.
- A. Pandas  
B. NumPy  
C. Matplotlib  
D. All of the above
- 15: \_\_\_\_\_ is an important library used for analysing data.
- A. Math  
B. Random  
C. Pandas  
D. None of the above
- 16: A Series by default have numeric data labels starting from \_\_\_\_\_.
- A. 3  
B. 2

  
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- C. 1  
D. 0
- 17: Which of the following module is to be imported to create Series?  
A. NumPy  
B. Pandas  
C. Matplotlib  
D. None of the above
- 18: What will be output for the following code?  

```
import pandas as pd
s = pd.Series([1,2,3,4,5],index = ['a','b','c','d','e'])
print(s['a'])
```

  
A. 1  
B. 2  
C. 3  
D. 4
- 19: What will be syntax for pandas dataframe?  
A. pandas.DataFrame( data, index, dtype, copy)  
B. pandas.DataFrame( data, index, rows, dtype, copy)  
C. pandas\_DataFrame( data, index, columns, dtype, copy)  
D. pandas.DataFrame( data, index, columns, dtype, copy)
- 20: What will be syntax for pandas dataframe?  
A. pandas.DataFrame( data, index, dtype, copy)  
B. pandas.DataFrame( data, index, rows, dtype, copy)  
C. pandas\_DataFrame( data, index, columns, dtype, copy)  
D. pandas.DataFrame( data, index, columns, dtype, copy)



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## Value added course Machine Learning from 5<sup>th</sup> January 2022

The screenshot shows a Google Meet interface with a Jupyter Notebook open. The notebook is titled "Untitled" and contains the following code:

```
import statistics

data = [1, 38, 39, 100, 1, 4, 84, 37]

meanvalue = statistics.mean(data)

print(meanvalue)
```

The output of the code is 32.25. The meeting is titled "nym-cqng-qxd" and is being presented by Geetanjali Rave. The participant list includes Uma P, Rashmi Sarkar, Deepanshu Chauria, Spandana NC, Vivak Kumar, Geetanjali Rave, vaishali chhabshiri, and 17 others.

The screenshot shows a Google Meet interface with a Jupyter Notebook open. The notebook is titled "Decision Tree" and contains the following code:

```
graphviz.backend.render, capture_stdout=True, check=True, quiet=False)
else:
 graphviz.backend.render, check=True, capture_stdout=True, check=True, quiet=False)
if (len(imgs) > 0):
 # Save the image to a file
 img.save('tree.png')
except OSError as e:
 if e.errno == errno.ENOENT:
 raise ValueError('No such file or directory') from e
 else:
 raise
```

The output of the code is a Decision Tree model. The meeting is titled "nuk-bqzz-utt" and is being presented by Geetanjali Rave. The participant list includes Sadiyah Azra, Deepanshu Chauria, Spandana NC, Nerasha Sk, Geetanjali Rave, Anis Das, Pranav Pandey, and 13 others.

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## Value added course Machine Learning from 5<sup>th</sup> January 2022

The screenshot shows a Google Meet window with a Jupyter Notebook open. The notebook is titled "Untitled" and contains the following code:

```
In [1]: #Importing the statistics module
import statistics

In [2]: #List of int integers
data = [1,2,3,4,5,6,7,8,9,10]

In [3]: #Mean of the data
meanvalue = statistics.mean(data)

In [4]: #Print the mean value
print(meanvalue)

In [5]: #Print the median
print(statistics.median(data))
```

The output of the code is displayed below the cells:

```
32.25
32.25
```

The meeting interface shows a grid of participants on the right, including Uma P, Roshmi Sarkar, Deepanshu Chordia, Spandana NC, Vivok Kumar, Geetanjali Rave, valshali dharmashri, and 17 others. The bottom status bar indicates the time is 2:18 PM and the meeting ID is nym-cqng-qxd.

The screenshot shows a Google Meet window with a Jupyter Notebook open. The notebook is titled "Decision Tree" and contains the following code:

```
In [1]: #Importing the decision tree module
from sklearn.tree import DecisionTreeClassifier

In [2]: #Importing the data
from sklearn.datasets import load_iris

In [3]: #Load the data
iris = load_iris()

In [4]: #Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(iris.data, iris.target, test_size=0.3, random_state=0)
```

The output of the code is displayed below the cells:

```
array([0, 1, 2])
```

The meeting interface shows a grid of participants on the right, including Sadiyyah Azra, Deepanshu Chordia, Spandana NC, Nerasha Sk, Geetanjali Rave, Anis Des, Pranav Pandey, and 13 others. The bottom status bar indicates the time is 2:59 PM and the meeting ID is nuk-bqzz-utt.

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A handwritten signature in blue ink, appearing to read 'Suresh', is positioned above a horizontal blue line.

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A handwritten signature in blue ink, appearing to read 'Suresh', is positioned above a horizontal blue line.

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A handwritten signature in blue ink, appearing to read 'Aneale', is positioned above a horizontal blue line.

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This is to certify that Mr/Ms PEER ABDUL BASIT of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms POOJA R of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms VINUTHA Y N of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms R V VENKAT NATH of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms RUSHABH MOHAN BHOR of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SAI KIRAN V R of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms ABHISHEK.A. of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SANDEEP KUMAR M of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SONIA SARAHS of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SHILPA V of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SHREEHARI K of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SANJAY KUMAR K of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms AMAN BARIK of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SUBHASH S BHARADWAJ of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SUNIL GOPE of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SHEELA B of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SUYASH SUMANT of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms ALOK N of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms THOMAS P KURIAN of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms KESAVAN S of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms SANKET S KULKARNI of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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This is to certify that Mr/Ms AMUDHA S of III Semester BCA has successfully completed the course on *Machine Learning using Python* organized by Department of Computer Science, MSRCASC in association with MSRIT held between January and February 2022.

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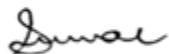
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