



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai Accredited by NAAC
ECE, EEE, MECH – NBA Accredited)

Dindigul – Palani Highway, Dindigul – 624 002

Department of Computer Science and Engineering

Value Added Course Summary 2022-2023

Course Name: “Data Science using Python”

Course Duration: 40 hours

Year Offered: 2022-2023

Course Instructors: Dr. G. Prabu, Associate Professor/CSE

Mrs.K. Sureka, Assistant Professor/CSE

Mrs. N. J. Divya. Assistant professor/CSE

Course Outcome:

On completion of the course, students will be able to know basic data types in Python, operators, how to clean and merge datasets, pandas library, the main methods for DataFrames, how to import data in Python and how to work in Jupyter Notebook.

Course Type: Self Framed

Assessment Mode

Attendance: 40 hours

Number of Participants: 58

Scheme of Exam: Project Work

Course Co-ordinator



G-HK

HoD

V.I.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Avvathupatti Village, Sindlagundu, Tiru-
varur, Road, Dindigul 624 002



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai & Accredited by NAAC)
Dindigul-Palani Highway, Dindigul

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

14.02.2023

CIRCULAR

The Department of CSE has planned to conduct a **Technology Training** for **III year - CSE** students on "**Data Science using Python**", by CADD CAE Technology, Coimbatore from **20.02.2023 to 03.03.2023 (10 days)** at CSE lab I. All our third year students are expected to attend this training without fail.

C. Prabh
14/2/23

G. LKB
15/2/23

N.J.DP
16/2/23

Programme Co-Ordinators:

Dr.G.Prabhu, ASP/CSE
Mrs.K.Sureka, AP/CSE
Mrs. N.J Divya, AP/CSE

HOD/CSE

(Dr.C.Sujatha)

D. Senthil Kumaran
Principal

(Dr.D.Senthil Kumaran)



DR.D.SENTHIL KUMARAN M.E., Ph.D. (MUS),
Principai
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu(Po),
Palani Road, Dindigul - 624 002.

01.02.2023

From
Dr.C.Sujatha,
Prof & Head /CSE,
SSM Institute of Engineering and Technology,
Dindigul – Palani Highway,
Dindigul.

To
The Principal,
SSM Institute of Engineering and Technology,
Dindigul – Palani Highway,
Dindigul.

Respected Sir,

Sub: Requisition for conducting Technology Training on Data Science using Python-reg.

We wish to bring to your kind notice that a Technology Training is planned to be conducted for III CSE on "Data Science using Python", by CADD CAE Technology, Coimbatore from 20.02.2023 to 3.03.2023 (10 days). In this regard, we seek your permission for the conduct of the training programme.

1. C. Prabhu
2/2/23
2. S. Sureka
2/2/23
3. N.J. Divya
2/2/23

Thanking you,

Yours faithfully,

6.4.16
2/2/23
(Dr.C.Sujatha)

Programme Co-Ordinators:

Dr.G.Prabhu, ASP/CSE
Mrs.K.Sureka, AP/CSE
Mrs. N.J Divya, AP/CSE

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MS
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SSM

INSTITUTE OF ENGINEERING AND
TECHNOLOGY

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ACCREDITED BY NAAC | ACCREDITED BY NBA (ECE, EEE, MECH UG PROGRAMS)

Technology Training

Data Science using Python

by CADD CAE Technology, Coimbatore

For III Year CSE



Date

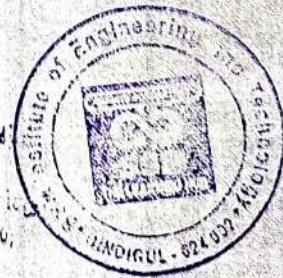
From 20.02.2023
to 03.03.2023



Venue

CSE lab II

Dr. D. SENTHIL KUMARAN, M.E., Ph.D., M.Tech
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (P.O),
Palani Road, Dindigul - 624 002.



HOD/CSE
Dr. C. Sujatha

Principal
Dr. D. Senthil Kumaran

Data Science with Python

Duration - 40 hours

Course objective:

This program is intended to students have in-depth knowledge of the many approaches, aptitudes, methodologies, and instruments needed to deal with corporate data. Courses provide specialized knowledge and instruction in statistics, programming, algorithms, and other analytical subjects. Students receive instruction in the abilities needed to find the needed solutions and assist in making significant judgments.

Course Modules:

- Introduction to Data Science
- Mathematical and Statistical Skills
- Machine Learning Algorithms
- Data Warehousing
- Data Mining
- Data Visualization
- Project Deployment Tools
- Predictive Analytics and Segmentation
- Exploratory Data Analysis

Library Required:

- NumPy
- Data wrangling
- Data exploration
- Data visualization
- Hypothesis building
- Pandas
- Matplotlib

ANACONDA:

Learn how to use Anaconda to manage packages and environments for use with Python.

JUPYTER NOTEBOOKS

Learn how to use Jupyter Notebooks to create documents combining code, text, images, and more.

NUMPY BASICS

Learn the value of NumPy and how to use it to manipulate data for AI problems.



L.D. SRINATH, M.E., Ph.D., (MUS),
Principal
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Palani Road, Dindigul - 624 002.

Mini-Project 1:

Use NumPy to mean normalize an array and separate it into several smaller ND arrays.

PANDAS BASICS

Learn to use Pandas to load and process data for machine learning problems.

Mini-Project 2:

Use Pandas to plot and get statistics from stock data

MATPLOTLIB BASICS

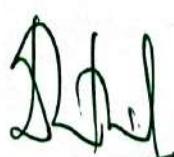
Learn how to use Matplotlib to choose appropriate plots for one and two variables based on the types of data you have.

Assignments:

- Change the legend position in Matplotlib
- How to Change Legend Font Size in Matplotlib?
- How Change the vertical spacing between legend entries in Matplotlib?
- Use multiple columns in a Matplotlib legend
- How to Create a Single Legend for All Subplots in Matplotlib?
- How to manually add a legend with a color box on a Matplotlib figure?
- How to Place Legend Outside of the Plot in Matplotlib?
- Remove the legend border in Matplotlib

Project:

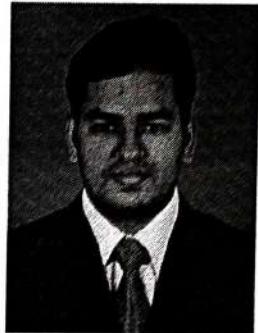
- Gender Detection and Age Prediction
- Sentimental Analysis
- Project on Diabetic Retinopathy
- Loan Prediction



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Resource Person Profile



ATHEESH KUMAR S

IT - Trainer

ctgatheeesh@gmail.com

Educational Credentials:

Professional Degree: MCA

Bharathiar University, Coimbatore

Work Experience:

S.No	Organization	Designation	Total Years
1	IT, Division of CADD TECHNOLOGIES	<i>IT - Trainer</i>	3 Months
2	Falcon Orange Technologies	<i>Software Developer</i>	1 Year 2 Months
Total years			1 Year 5 Months

Technical Skills:

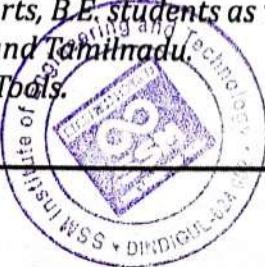
Operating systems: Windows 7/8.1/10/11

Research Tools : HTML , CSS, JavaScript, React js & Node js

Embedded Tools : Python

Professional Experience:

- Having Hands on experience in software development field in Digital-Product unit.
- Done the Project - Substrates Inventory Management system using python and JavaScript for B2B Customer.
- Provided Training for Arts, B.E. students as well as Research Scholars from Various Institutions in and around Tamilnadu.
- Active in Self Learning Tools.



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Department of Computer Science and Engineering

Name of the Program: Technology Training on “Data Science with python”

Mr Atheesh Kumar S,

Name of the Guest:
IT Trainer,
CADD CAE Technologies,
Coimbatore.

Venue: CSE Lab - 1

Timing: 09.00 a.m. to 03.15 p.m.

Attendance Sheet – (III – Year CSE)

S. N o	Register Number	Name of the Participant	Signature of the Participant							
			20.02.23		21.02.23		22.02.23		23.02.23	
			F.N	A.N	F.N	A.N	F.N	A.N	F.N	A.N
1	922120104001	ABINAYA G							AB	AB
2	922120104002	ABINAYA T								
3	922120104003	AKALYA A N								
4	922120104004	ANU P								
5	922120104005	ASHOK KUMAR M								
6	922120104006	ASMETAA G Y								
7	922120104007	BALASURYA R								
8	922120104008	BHOOMIKA R								
9	922120104009	DINESH RAJA E								



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SSM Institute of Engineering and Technology, Dindigul

Dindigul – Palani Highway, Dindigul – 624 002

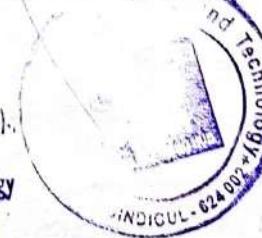
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10	922120104010	EVANS ABRAHAM J	<i>EVANS ABRAHAM J</i>												
11	922120104011	HAREESWARAN S	<i>HAREESWARAN S</i>												
12	922120104012	HARINI S	<i>HARINI S</i>												
13	922120104013	JEEVA J	<i>JEEVA J</i>												
14	922120104014	JEYASHREE S	<i>JEYASHREE S</i>												
15	922120104015	JOHANS PRAVEEN S	<i>JOHANS PRAVEEN S</i>												
16	922120104016	JOSEPHINE JESILA M	<i>JOSEPHINE JESILA M</i>												
17	922120104018	KARUNYA M D	<i>KARUNYA M D</i>												
18	922120104019	KARUPPAIYA M	<i>KARUPPAIYA M</i>												
19	922120104022	LOGATHARANI S	<i>LOGATHARANI S</i>												
20	922120104023	LOGESHWARI P	<i>LOGESHWARI P</i>												
21	922120104024	LOKESH G	<i>LOKESH G</i>												
22	922120104025	MADHESH KUMAR D	<i>MADHESH KUMAR D</i>												
23	922120104026	MOHAMED ARSATH M	<i>MOHAMED ARSATH M</i>												
24	922120104027	MOHAMED FAZIL J	<i>MOHAMED FAZIL J</i>												
25	922120104028	MOHAMED HADHI S	<i>MOHAMED HADHI S</i>												
26	922120104029	MUGILAN M	<i>MUGILAN M</i>												
27	922120104030	PARTHI PRASATH N	<i>PARTHI PRASATH N</i>												
28	922120104031	PIRUTHVI RAMANA V	<i>PIRUTHVI RAMANA V</i>												
29	922120104032	POOJA M	<i>POOJA M</i>												
30	922120104033	PRADEEP V	<i>PRADEEP V</i>												
31	922120104034	PRAKASH S	<i>PRAKASH S</i>												

Dr. D. SENTHIL KUMARAN, M.E., Ph.D., (MUS).

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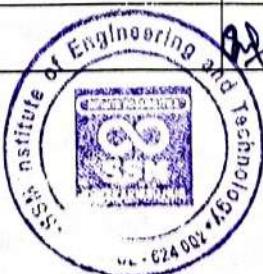


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31	922120104034	PRAKASH S	<i>Pra</i>										
32	922120104035	PREETHIGA M	<i>Pre</i>										
33	922120104036	PRETHEEBA U	<i>Pre</i>										
34	922120104037	REENA M	<i>Ree</i>										
35	922120104038	SABARIKRISHNAN R	<i>Sab</i>										
36	922120104039	SAKTHI VIGNESHWARAN B	<i>Sak</i>										
37	922120104040	SANJAY PANDIM	<i>Sanj</i>										
38	922120104041	SANJEEV SARAVANAN S	<i>Sanj</i>										
39	922120104042	SANTHIYADHARSHINI S	<i>Sant</i>										
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41	922120104044	SARAN PANDIAN S	<i>Sara</i>										
42	922120104045	SATHEESH KUMAR K	<i>Sat</i>										
43	922120104046	SHALINI J	<i>Shalini</i>										
44	922120104047	SHARMILA S	<i>Sharmi</i>										
45	922120104049	SINDHUJA INFANT A	<i>Sindh</i>										
46	922120104050	SIVA SHANTHANA BHARATHI	<i>Moj</i>										
47	922120104051	SIVASUNDAR V	<i>Siva</i>										
48	922120104052	SOUNDHARYA DEVI M	<i>Sound</i>										
49	922120104053	SRIDHARAN S	<i>Srid</i>										
50	922120104054	SRIRAM J	<i>J</i>										
51	922120104055	SRIRAM S	<i>SR</i>										



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52	922120104056	SRIRAM PRASATH L	<i>[Handwritten marks]</i>	AB	AB	<i>[Handwritten marks]</i>						
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54	922120104058	SUBHA S	<i>[Handwritten marks]</i>									
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56	922120104060	VARSHINI U	<i>[Handwritten marks]</i>									
57	922120104061	VINOOTH KUMAR A	<i>[Handwritten marks]</i>									
58	922120104301	SRIRAM V M	<i>[Handwritten marks]</i>									

[Signature]
Faculty Incharge

G.L.R
HOD/CSE

[Signature]
Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (MUS),
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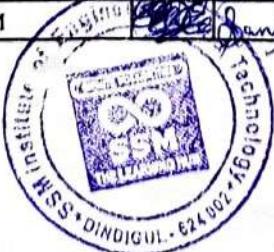


SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year : 2022-2023 (Even Semester)
Batch:2020-2024 Year: III Semester: VI

TECHNOLOGY TRAINING ATTENDANCE SHEET

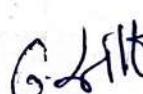
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2	922120104002	ABINAYA T	AbiG	AbiG	AB	AB	AB	AB	AbiT	AbiT	AbiT	AbiT
3	922120104003	AKALYA A N	Akalya									
4	922120104004	ANU P	Anu									
5	922120104005	ASHOK KUMAR M	Ashok									
6	922120104006	ASMETAA G Y	Asmetaa									
7	922120104007	BALASURYA R	Balasurya									
8	922120104008	BHOOMIKA R	Bhoomika									
9	922120104009	DINESH RAJA E	Dinesh									
10	922120104010	EVANS ABRAHAM J	Evan									
11	922120104011	HAREESWARAN S	Hareeswaran									
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18	922120104019	KARUPPAIYA M	Karuppaia									
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21	922120104024	LOKESH G	Lokesha									
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23	922120104026	MOHAMED ARSAT M	AB									
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26	922120104029	MUGILAN M	Mugilan									
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37	922120104040	SANJAY PANDIM	Sanjay									

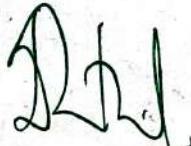


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			FN	AN								
38	922120104041	SANJEEV SARAVANAN S	Sanjeev	Saravan								
39	922120104042	SANTHIYADHARSHINI S	Santhi	Dharmi								
40	922120104043	SANTHOSH R	Santhosh	Ram								
41	922120104044	SARAN PANDIAN S	Saran	Pandian								
42	922120104045	SATHEESH KUMAR K	Satheesh	Kumar								
43	922120104046	SHALINI J	Shalini	J	Shalini	J	Shalini	J	Shalini	J	Shalini	J
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45	922120104049	SINDHUJA INFANT A	Sindhuja	Infant A	Sindhuja	Infant A	Sindhuja	Infant A	Sindhuja	Infant A	Sindhuja	Infant A
46	922120104050	SIVA SHANTHANA BHARATHI M	Siva	Shantha								
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48	922120104052	SOUNDHARYA DEVI M	Soundharya	Devi M	Soundharya	Devi M	Soundharya	Devi M	Soundharya	Devi M	Soundharya	Devi M
49	922120104053	SRIDHARAN S	Sridharan	S	Sridharan	S	Sridharan	S	Sridharan	S	Sridharan	S
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51	922120104055	SRIRAM S	Sriram	S	Sriram	S	Sriram	S	Sriram	S	Sriram	S
52	922120104056	SRIRAM PRASATH L	Sriram	Prasath L	Sriram	Prasath L	Sriram	Prasath L	Sriram	Prasath L	Sriram	Prasath L
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57	922120104061	VINOTH KUMAR A	Vinoth	A	Vinoth	A	Vinoth	A	Vinoth	A	Vinoth	A
58	922120104301	SRIRAM VM	SRIRAM	VM	SRIRAM	VM	SRIRAM	VM	SRIRAM	VM	SRIRAM	VM

 FACULTY INCHARGE


HOD/CSE


Dr. D. SENTHIL KUMARAN, M.E., Ph.D. (MUS).

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Department of Computer Science and Engineering

**TECHNOLOGY TRAINING
FEEDBACK FORM**

Technology Training-Data Science with Python(Feedback form)

Feedback Report

Email *

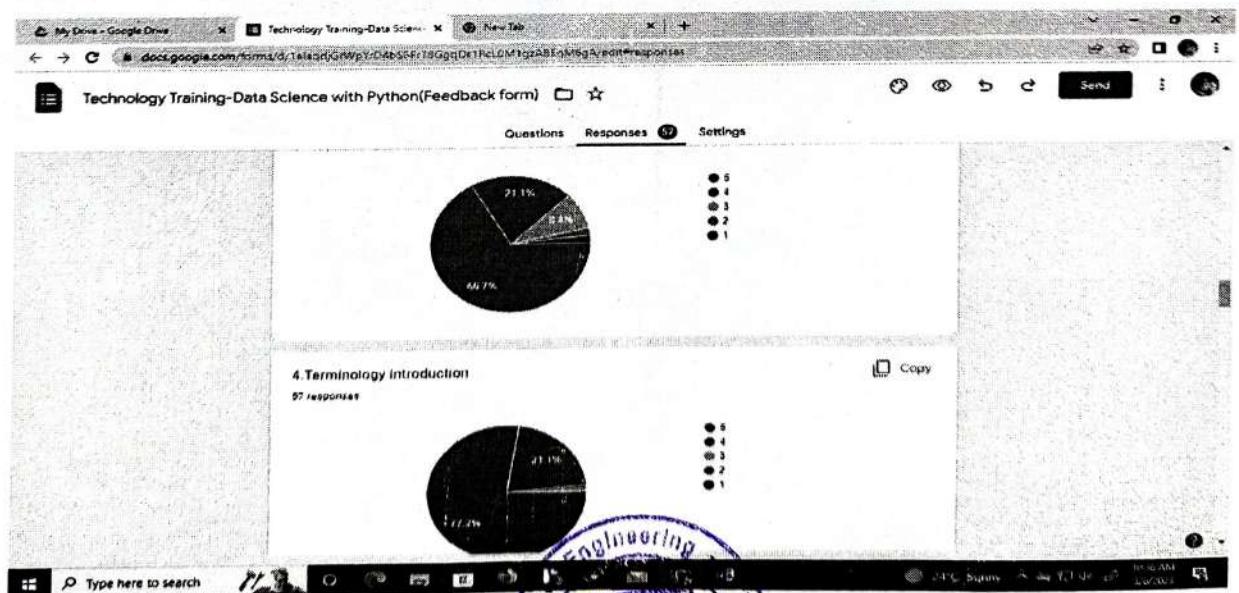
Valid email address

This form is collecting email addresses. Change settings.

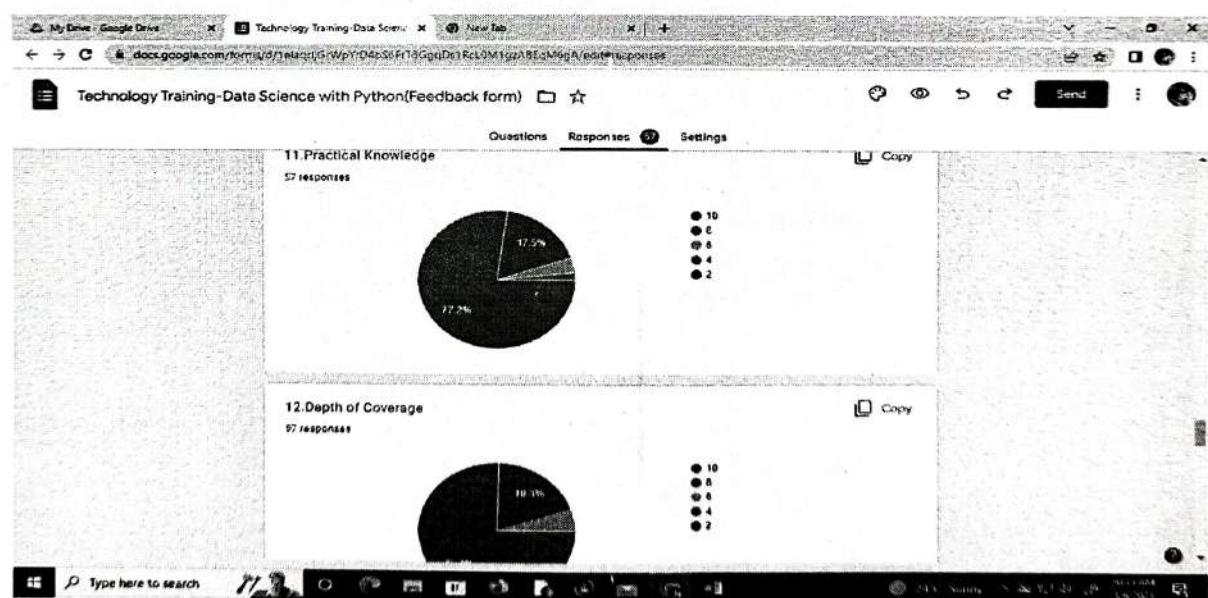
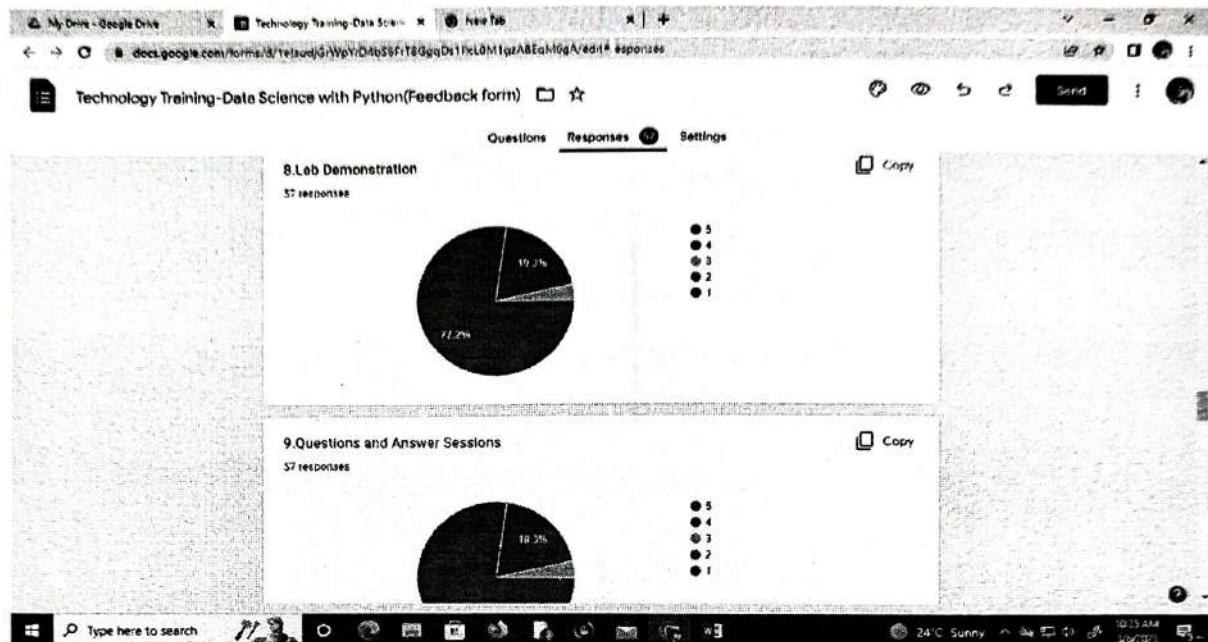
Register Number

Short-answer text

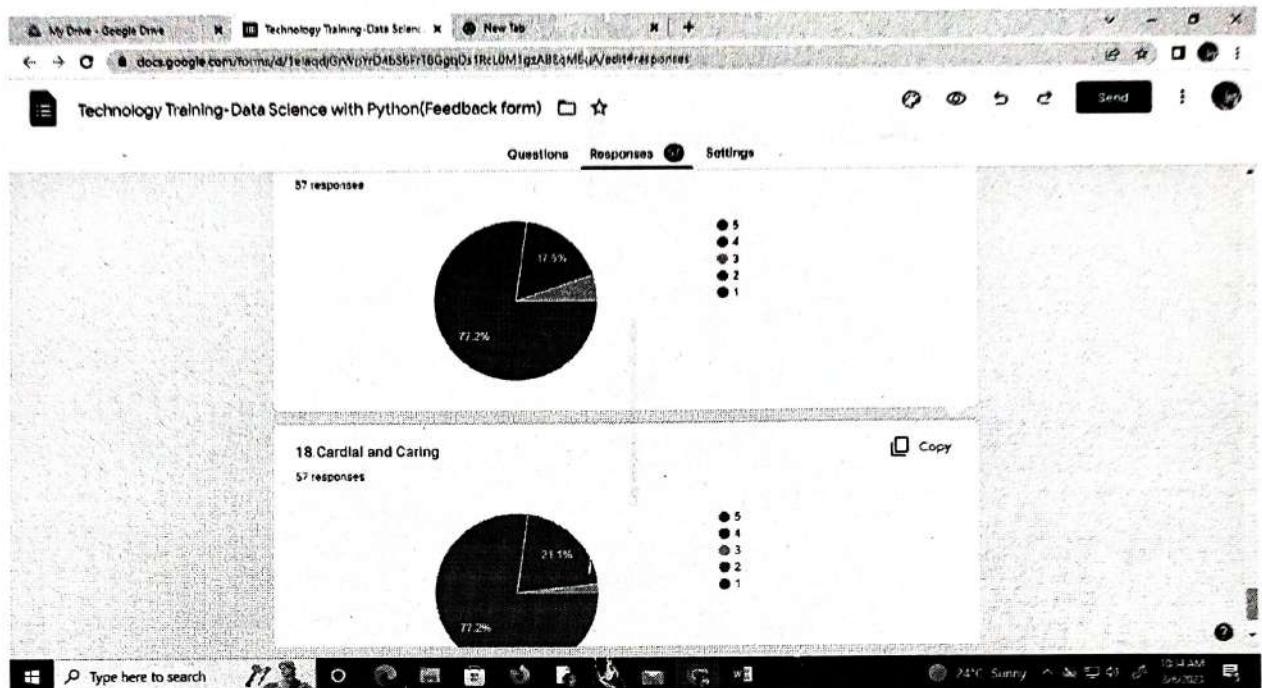
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Department of Computer Science and Engineering

Technology Training Report

TOPIC	Datascience with Python
YEAR	III-CSE
TRAINER	Mr.Atheesh Kumar,CADD Technologies
DATE	20.02.2023 to 02.03.2023
VENUE	SSMIET-CSE Lab-I
TIME	9.00A.M-3.30P.M

~~1. Dr. G. Prabu~~ 2. ~~Mrs. K. Sureka~~ 3.
Programme co-ordinators

Dr.G.Prabu ASP/CSE

Mrs.K.Sureka AP/CSE

Mrs.N.J.Divya AP/CSE

6.2/18
HOD/CSE

(Dr.C.Sujatha)

DR.D.SENTHIL KUMARAN

(Dr.D.Senthil Kumaran)



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III Year CSE Students work with the given task.



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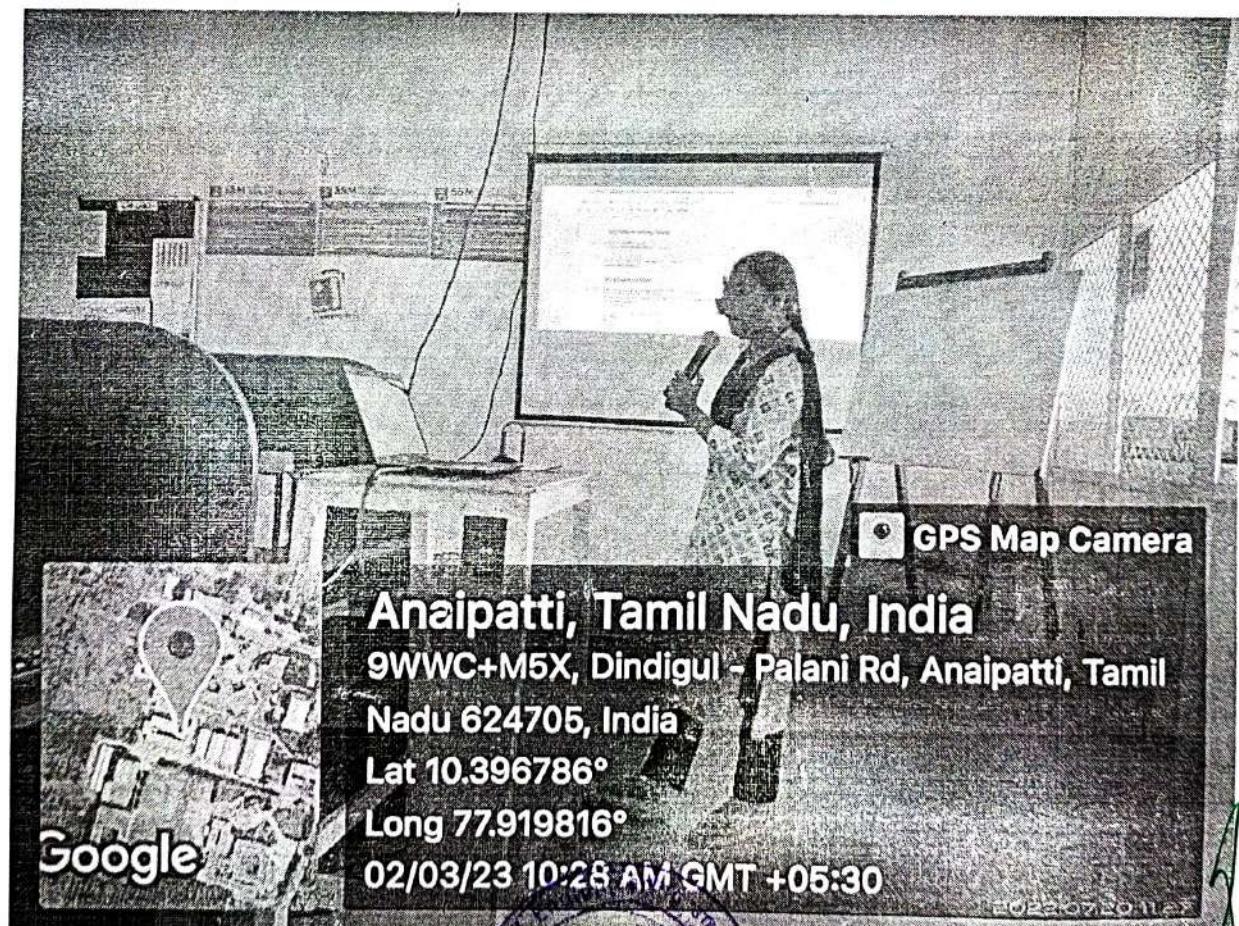


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Project Presentation by III CSE students

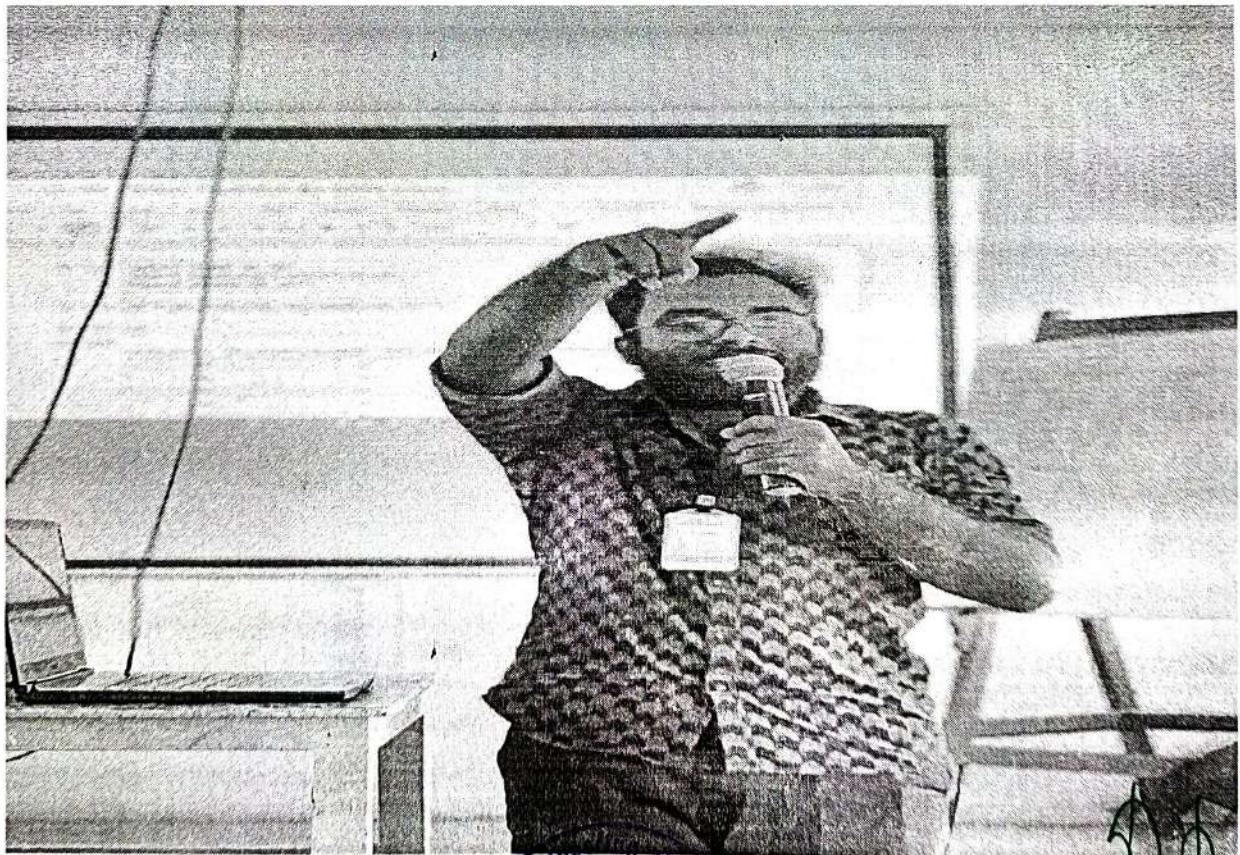
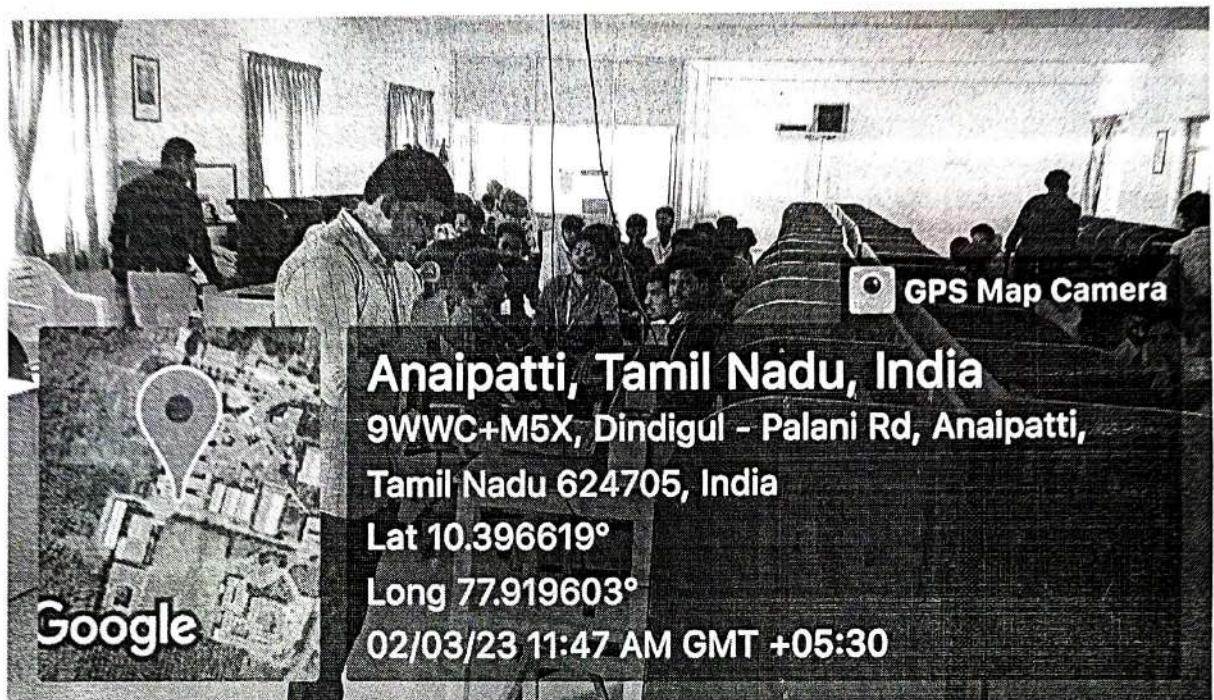


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PROJECT WORKS

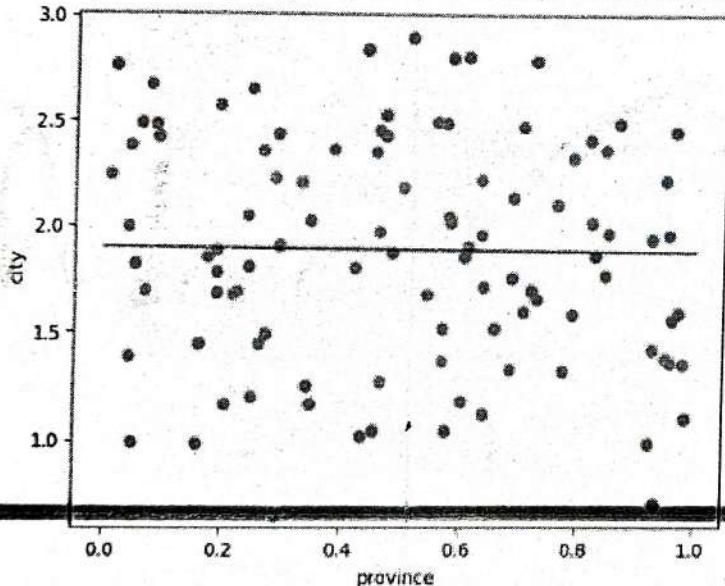
S.JOHANS PRAVEEN III CSE

```
dataset=pd.read_csv('Case.csv')
province = np.random.rand(100)
city = 2 * x + 1 + np.random.randn(100) * 0.2

def linear_regression(province, city):
    n = len(province)
    slope = (n * np.sum(province * city) - np.sum(province) * np.sum(city)) / (n * np.sum(province**2) - np.sum(province)**2)
    intercept = np.mean(city) - slope * np.mean(province)
    return slope, intercept

slope, intercept = linear_regression(province, city)
x_line = np.linspace(0, 1, 100)
y_line = slope * x_line + intercept

plt.scatter(province, city)
plt.plot(x_line, y_line, color='red')
plt.xlabel('province')
plt.ylabel('city')
plt.show()
```

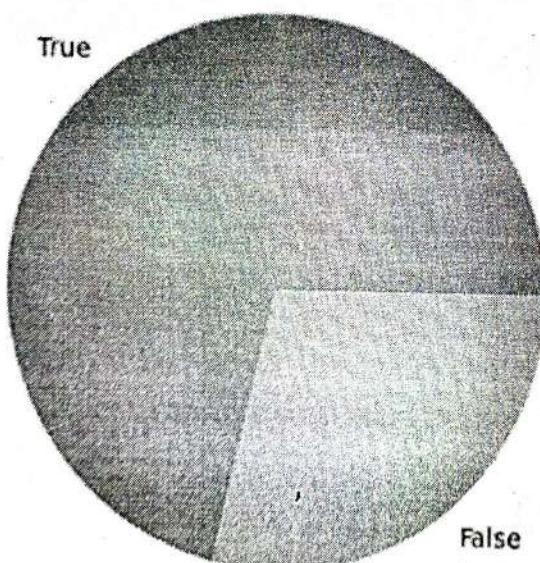



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KARUPAIYA III CSE

```
1]: import matplotlib.pyplot as plt  
2]: attrition_count=pd.DataFrame(dataset['group'].value_counts())  
attrition_count  
2]:  
group  
-----  
True    124  
False    50  
  
3]: plt.pie(attrition_count['group'],labels=['True','False'],explode=(0,0))  
3]: ([<matplotlib.patches.Wedge at 0x22a43ee3ac0>,  
     <matplotlib.patches.Wedge at 0x22a43ee3fa0>],  
     [Text(-0.6813932103477295, 0.8635411356108145, 'True'),  
      Text(0.6813932103477294, -0.8635411356108146, 'False')])
```

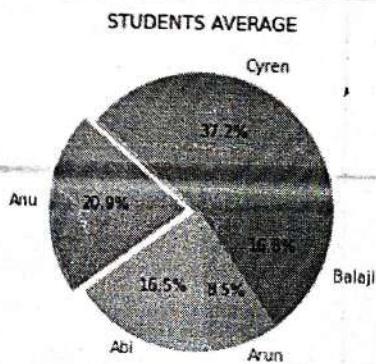


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SHALINI III CSE

```
[2]: import pandas as pd
import matplotlib.pyplot as plt
df=pd.read_csv("student.csv.csv")
stu_data=df["NAME"]
avg_data=df["AVERAGE"]
colors=["#1f77b4", "#ff7f04", "#2ca02c", "#d62728", "#8c564b"]
explode=(0.1,0,0,0,0)
plt.pie(avg_data,labels=stu_data,explode=explode,colors=colors,autopct='%1.1f%%', shadow=True, startangle=140)
plt.title("STUDENTS AVERAGE")
plt.show()
```



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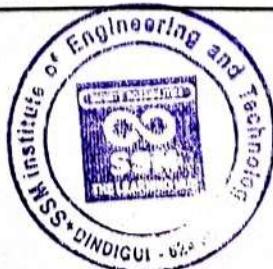
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Department of Computer Science and Engineering

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04 . 03 . 2023

Sl. No	Reg. No.	Name of the student	Total(100)
1	922120104001	ABINAYA G	80
2	922120104002	ABINAYA T	85
3	922120104003	AKALYA A N	87
4	922120104004	ANU P	83
5	922120104005	ASHOK KUMAR M	74
6	922120104006	ASMETAA G Y	72
7	922120104007	BALASURYA R	82
8	922120104008	BHOOMIKA R	86
9	922120104009	DINESH RAJA E	63
10	922120104010	EVANS ABRAHAM J	95
11	922120104011	HAREESWARAN S	88
12	922120104012	HARINI S	82
13	922120104013	JEEVA J	86
14	922120104014	JEYASHREE S	87
15	922120104015	JOHANS PRAVEEN S	93
16	922120104016	JOSEPHINE JESILA M	85
17	922120104018	KARUNYA M D	74
18	922120104019	KARUPPAIYA M	87
19	922120104022	LOGATHARANI S	72
20	922120104023	LOGESHWARI P	87
21	922120104024	LOKESH G	71
22	922120104025	MADHESH KUMAR D	80
23	922120104026	MOHAMED ARSATH M	87
24	922120104027	MOHAMED FAZIL J	88
25	922120104028	MOHAMED HADHI S	81
26	922120104029	MUGILAN M	87
27	922120104030	PARTHI PRASATH N	88
28	922120104031	PIRUTHVI RAMANA V	88
29	922120104032	POOJA M	87
30	922120104033	PRADEEP V	86



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31	922120104034	PRAKASH S	88
32	922120104035	PREETHIGA M	87
33	922120104036	PRETHEEBA U	81
34	922120104037	REENA M	75
35	922120104038	SABARIKRISHNAN R	86
36	922120104039	SAKTHI VIGNESHWARAN B	78
37	922120104040	SANJAY PANDI M	88
38	922120104041	SANJEEV SARAVANAN S	64
39	922120104042	SANTHIYADHARSHINI S	76
40	922120104043	SANTHOSH R	88
41	922120104044	SARAN PANDIAN S	80
42	922120104045	SATHEESH KUMAR K	87
43	922120104046	SHALINI J	88
44	922120104047	SHARMILA S	75
45	922120104049	SINDHUJA INFANT A	86
46	922120104050	SIVA SHANTHANA BHARATHI M	79
47	922120104051	SIVASUNDAR V	63
48	922120104052	SOUNDHARYA DEVI M	85
49	922120104053	SRIDHARAN S	87
50	922120104054	SRIRAM J	78
51	922120104055	SRIRAM S	62
52	922120104057	SUBBIRAMANI R	88
53	922120104058	SUBHAS	87
54	922120104059	TAMIL ARASAN K	71
55	922120104060	VARSHINI U	88
56	922120104061	VINOOTH KUMAR A	75
57	922120104301	SRIRAM V M	74

INTERNAL COORDINATOR

G. Lekha
4/3/23

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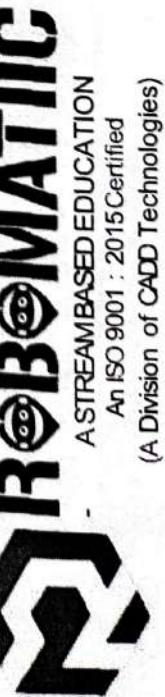
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Course Title

ATHEESH KUMARS
Instructor

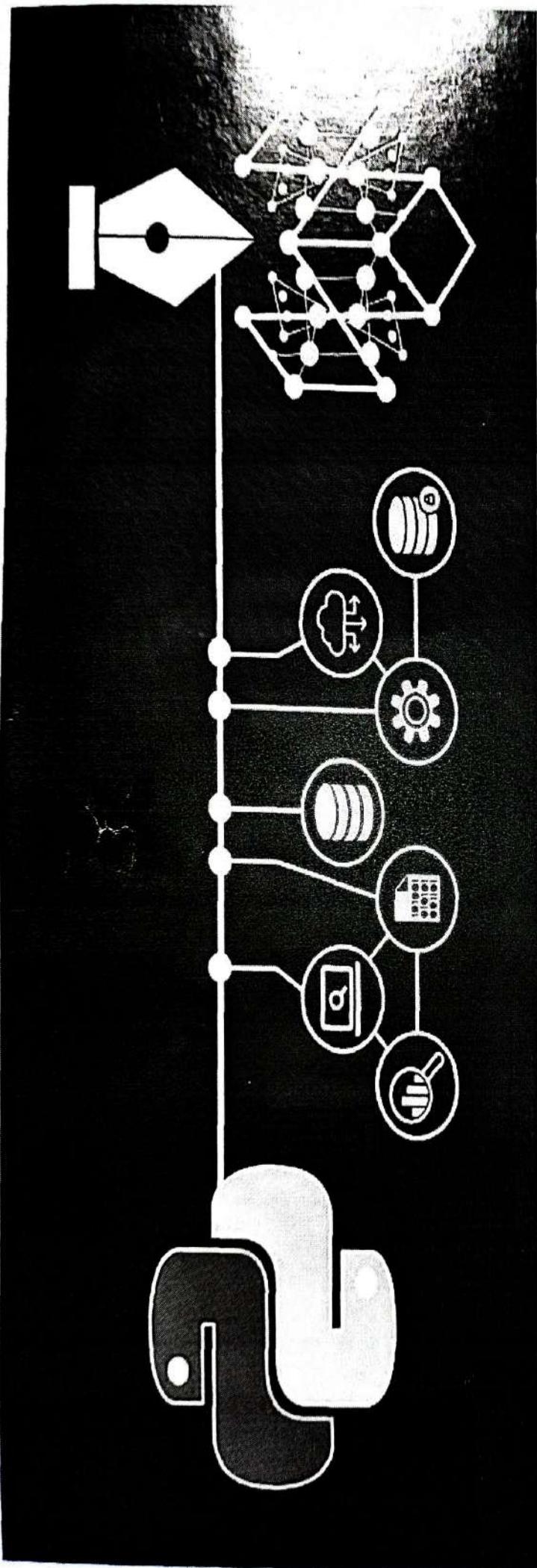
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Course Duration
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Course Starting Date
02/03/2023
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Course Duration
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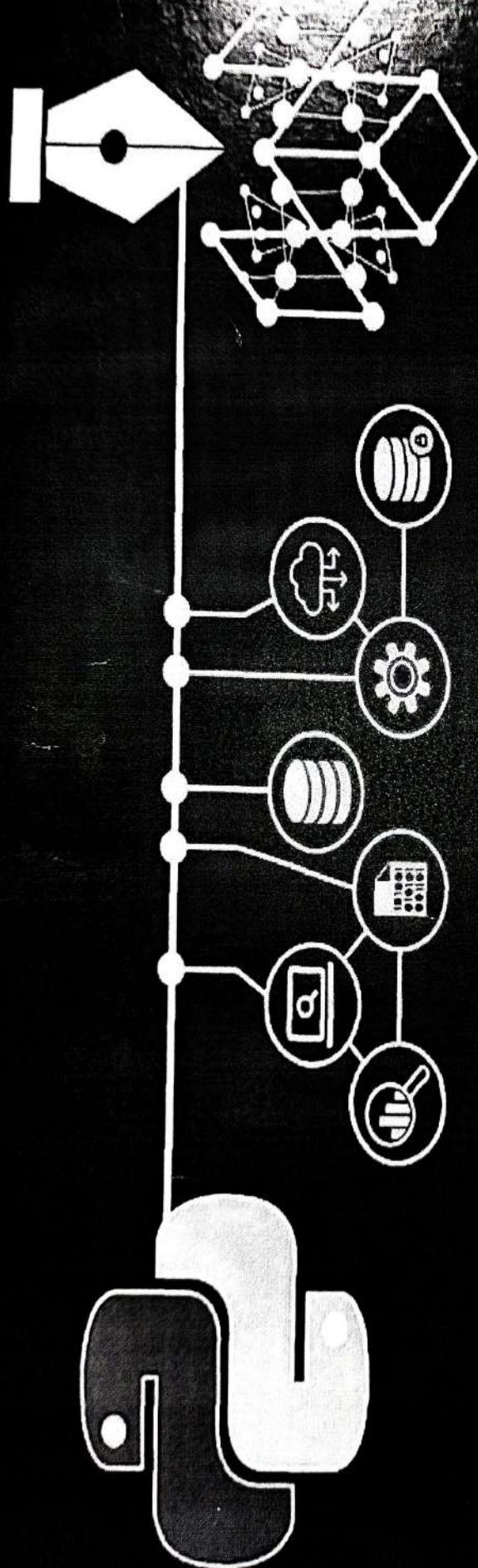
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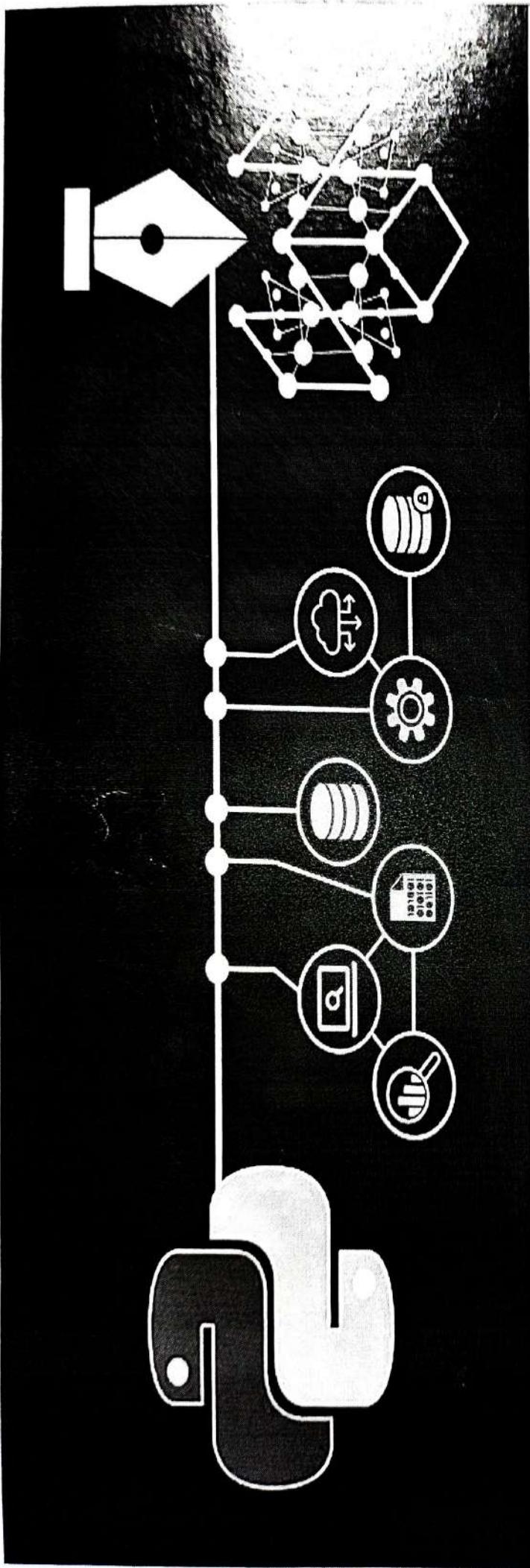


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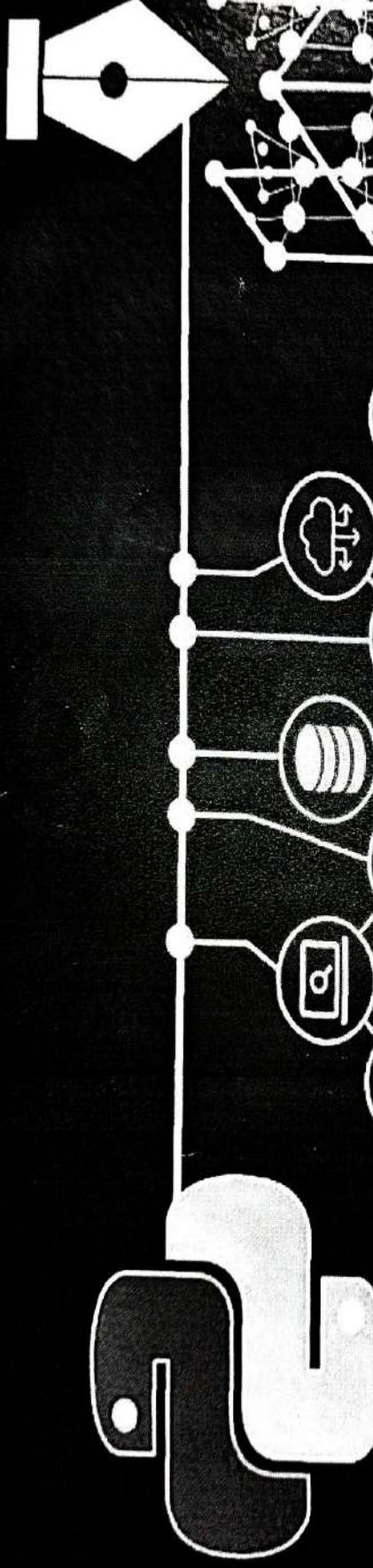
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