



# Bhoj Reddy Engineering College for Women

(Sponsored by Sangam Laxmibai Vidyapeet, approved by AICTE and affiliated to JNTUH)  
Vinaynagar, IS Sadan Crossroads, Saidabad, Hyderabad – 500 059, Telangana. [www.brecw.ac.in](http://www.brecw.ac.in)



## Department of Information Technology

File No: BRECW/IT/AY23-24-ODD/WORKSHOP-1/Report

Date: 4/01/2024

Report on One-Week Workshop on “Data Science using Python” .

The IT department has conducted one-week workshop on “Data Science using Python” for II IT A and B students during 18 December – 22 December 2023. Total 133 students have participated in this workshop. The workshop was scheduled from 09:30 to 16:30 Hrs. The workshop is conducted by Brainovision Solutions India, Pvt. Ltd. Brainovision Solutions India Private Limited. This organization started in 2014 which serves web solutions, software development and tech education in the corporate field. This is the place for the brands, students and faculty to find the solution for their web service requirements, Workshops, Internships, Faculty Development Programs and for organizations to hire perfect skilled candidates. All the sessions are hands-on sessions.

Figure 1: Workshop Banner

### The objective of the Workshop:

The Data Science Workshop focuses on building up your practical skills so that you can understand how to develop simple machine learning models in Python or even build an advanced model for detecting potential bank frauds with effective modern data science. You'll learn from real examples that lead to real results.

### Focus of the Workshop:

- i) I Introduction to Data Science

- ii) Tools (Python, R programming etc)
- iii) Data Exploration, Preprocessing, Statistical Analysis, and Interference
- iv) Machine Learning Fundamentals and Data Visualization
- v) Feature Engineering, Model Evaluation and Hyperparameter Tuning
- vi) Introduction to Deep Learning, Real world Applications and Ethical Considerations
- vii) Collaboration, Communication, Hands on exercises and Projects
- viii) Networking opportunities and Resource sharing.

### Inaugural Session:

The inaugural function was started with Mr D Vijaykumar at 10:00 AM in the Ramdev Convention Centre. The Principal, Dr J.Madhavan, Vice Principal, G Dayakar Reddy, and Head of IT Department, Dr C Murugamani ,Associate Professor, D Navaneetha ;also delivered their respective keynotes to the students in the inaugural session.



Figure 2: Principal sir addressing the gathering about the workshop and the 24 hr hackathon.



Figure 3: The Speaker Mr. D Vijay Kumar gave a brief introduction about the happening workshop and the hackathon details.



Figure 4: The esteemed chief guests , staff members along with students of II IT A and B.

Workshop sessions(Day-wise):

**DAY-1 (18<sup>th</sup> December 2023)**

Mr.D Vijay Kumar, the resource person from Brainovision Solutions India, Pvt. Ltd., dealt with the first-day session of the workshop.

The following topics were covered on the day-1:

**Introduction to Python:**

Explained Python and basics of python. Also explained the main usage of python.

The Problems which we face with other languages:

Given a detailed explanation of the simple language python,its usage, loops, control statements and all.

**Basic Python:**

Described how to solve the programs related to python and some logic that we don't use daily.

And also learn to write a single bit of code in multiple ways.



Figure 5: Speaker explaining the concept of python to the gathering.

**DAY-2 (19 December 2023)**

The second day session of the workshop was dealt by Mr.D vijay kumar,the resource person from Brainovision Solutions India, Pvt. Ltd

The following topics were covered on the day-2:

**Python Libraries:**

Python libraries offer a shortcut to enhanced programming capabilities, efficiency, and specialization in various domains. Leveraging these libraries enables developers to streamline their workflow, tapping into pre-built functions and modules that address specific tasks.

**Numpy:**

Explained about an enormous range of fast and efficient ways of creating arrays and manipulating numerical data inside them. While a Python list can contain different data types within a single list, all of the elements in a NumPy array should be homogeneous.

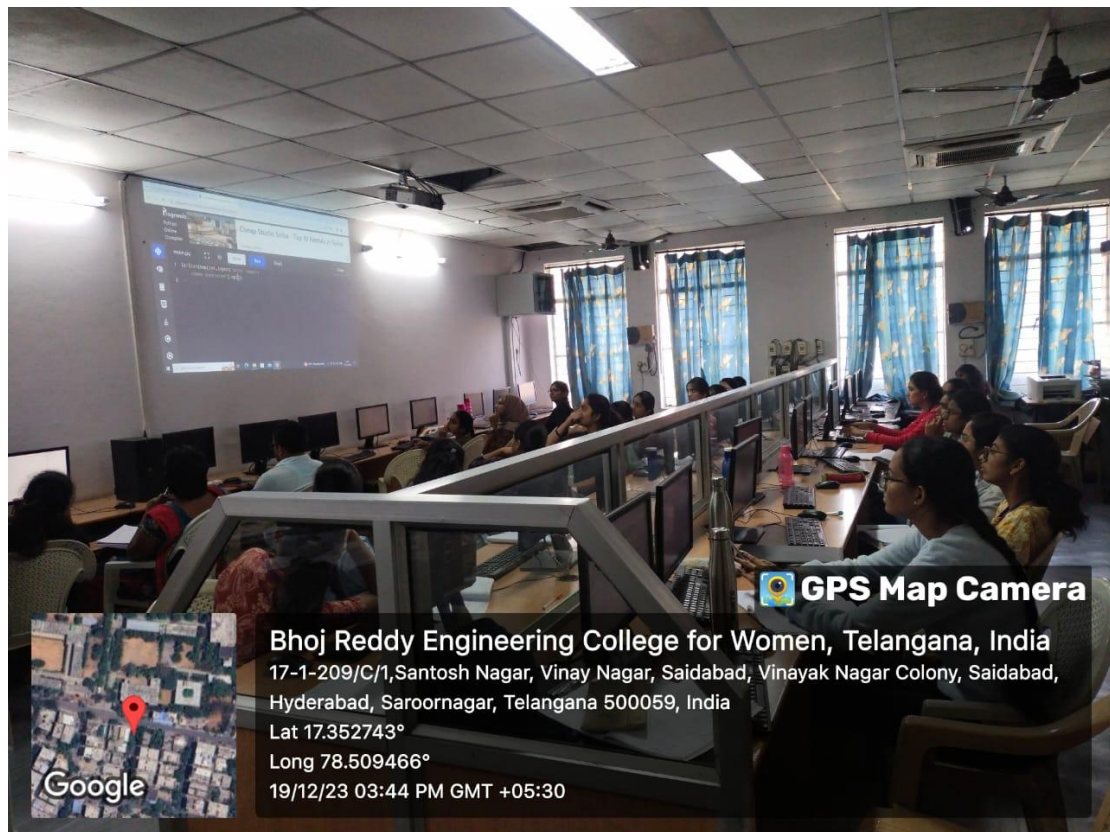
**Pandas:**

Explained about you get acquainted with your data by cleaning, transforming, and analyzing it.

**Matplotlib:** Explained about generating different types of plots( histogram, bar graph, pie chart, etc..)



**Figure 6: Speaker explaining about the python libraries , its usage and execution to the students.**



**Figure 7: Students understanding the python libraries.**



**Figure 8: Students understanding the python libraries.**



**Figure 9: Students executing the work given by sir.**

**DAY-3 (20 December 2023)**

The third day session of the workshop was dealt by Mr D vijay kumar, the resource person from Brainovision Solutions India, Pvt. Ltd

The following topics were covered on the day-3:

**Data Science:**

Described basics of data science and how to perform them.

**How to pick a specific problem:**

Illustrated about the picking of problem statement according to our domain and industry. We need to justify the problem and give its appropriate solution with the cause.

**Feature engineering:**

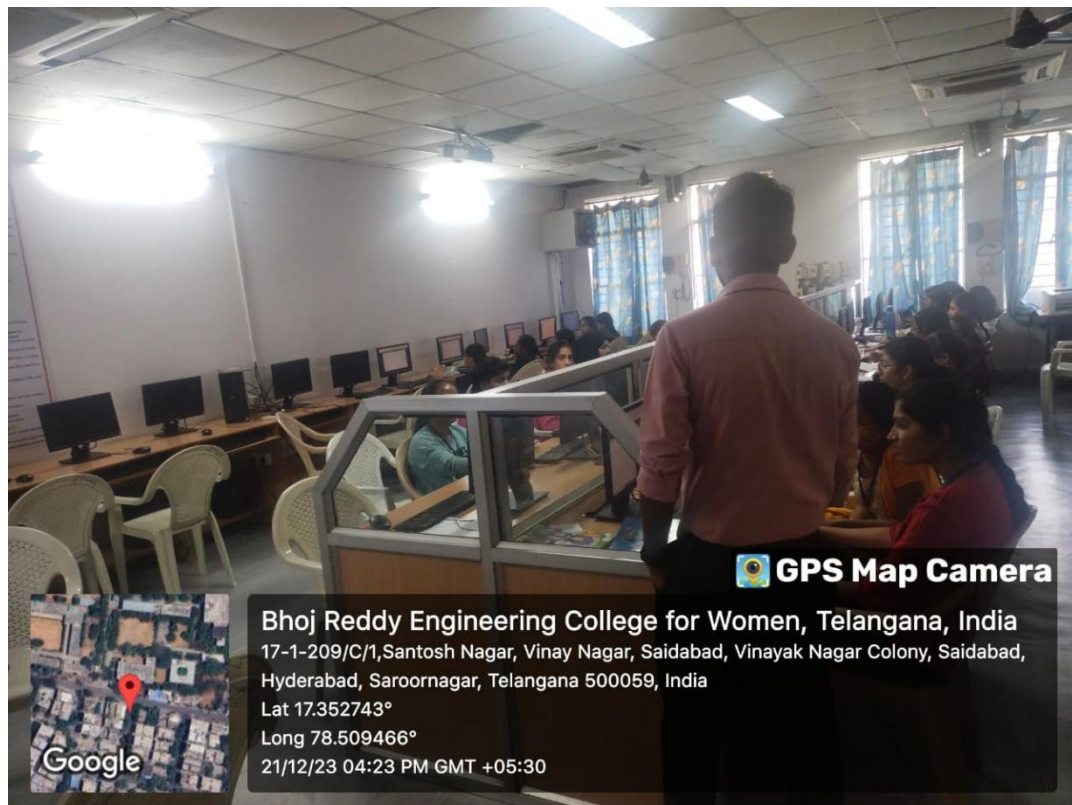
Writing down the features related to the domain we chose and selecting the main points out of it .



Figure 10: Speaker explaining about the feature engineering.



Figure 11: Speaker explaining the topics and students are noting the main points of it.



**Figure 12: Students are going with their respective problem statements to get approved by their respective mentors by convincing in a better way.**

#### **DAY-4 (21 December 2023)**

The fourth day session of the workshop was dealt by Mr D vijay kumar the resource person from Brainovision Solutions India, Pvt. Ltd

The following topics were covered on the day-4:

#### **ML:**

Demonstrated about machine learning techniques and the purpose of doing ML projects.

#### **Algorithms:**

Explained about solving different problem statements using different algorithms in ML either classification or regression techniques.

#### **Classification and Regression:**

Regression algorithms are used to predict the continuous values such as price, salary, age, etc. and Classification algorithms are used to predict/Classify the discrete values such as Male or Female, True or False, Spam or Not Spam, etc.



Figure 13: Students working on solving different algorithms by taking problem statements.



Figure 14: Students working on solving different algorithms by taking problem statements.

#### DAY-5 (22 December 2023)

The fifth day session of the workshop was dealt by Mr D vijay kumar the resource person from Brainovision Solutions India, Pvt. Ltd

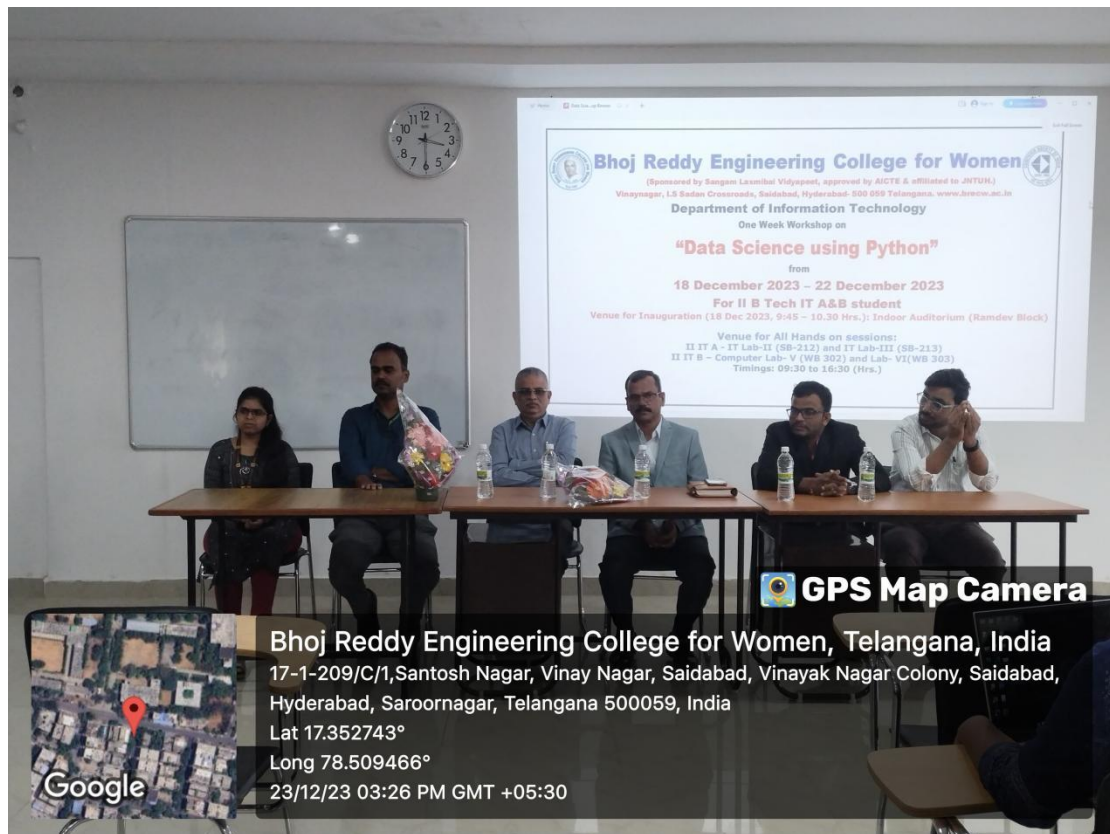
The following topics were covered on the day-5:

#### Evaluation metrics:

Explained the choice of metrics depends on the specific task or problem being addressed.

#### Confusion Matrix:

A confusion matrix is a table used in machine learning to evaluate the performance of a classification model. It provides a summary of the predictions made by the model



compared to the actual ground truth.

**Figure 15: End of workshop and beginning of 24 hour hackathon.**



**Figure 16: students are getting ready for hackthon.**



Figure 17: Teams getting ready for 24 hour Hackathon!!



Figure 18: winning moments of students.



Figure19: winners of 24 hours hackthon.



Figure 20: IT department staff and brainovision team with the winners of 24 hours hackthon.

The valedictory function started with a welcome speech by Ms. Nidhisha ardhani of II B Tech IT A, followed by a Keynote address by Dr. J Madhavan, Principal, Mr. G Dayakar Reddy, Vice Principal, Dr. C Murugamani, HoD IT, Ms. D Navaneetha. During the valedictory function, students expressed their views and gave feedback about the workshop. Ms. Ruthvika of II T B proposed the vote of thanks.

All the participants were given participation certificates in the valedictory function. The Feedback from the students was collected. Overall it was a fruitful experience for all participants, coordinators, and volunteers.

Minhaj Begum  
Seminars & Workshops In-charge

Dr C Murugamani  
HoD-IT

Dr J Madhavan  
Principal