



DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science & Technology
Government of India



Anekant Education Society's

JAYSINGPUR COLLEGE JAYSINGPUR

Religious Jain Minority | DST-FIST Level-I

Affiliated to Shivaji University, Kolhapur

Reaccredited by NAAC (3rd Cycle) with 'A' Grade (CGPA 3.24)

DBT-STAR COLLEGE SCHEME

ANNUAL PROGRESS REPORT (2025-26)

DEPARTMENT OF MATHEMATICS & STATISTICS

Mr. Pritam R. Patil
Departmental Coordinator

Dr. Sandip Sabale
Coordinator
DBT-STAR COLLEGE SCHEME

Dr. Surat Manjare
Principal
JAYSINGPUR COLLEGE JAYSINGPUR

INDEX

Sr. No.	Name of The Event	Date
1	Two Days Workshop On “ Scilab & Python”	12/09/2025 to 13/09/ 2025.
2	Online Guest Lecture On “ Legacy Of Ancient Mathematical In Modern Applications”	08/10/2026
3	Webinar On “Mathematics In Cybersecurity: Applications, Models, And Career Pathways”	03/01/ 2026
4	National Mathematics Day Celebration	10/01/2026
5	Mathematics: The Hidden Engine in Artificial Intelligence	12/01/ 2026
6	One Day Workshop On “Code Smarter With Github & Github Copilot”	17/01/ 2026
7	Hands On Training On “R-Software”	21/01/ 2026
8	One Day Hands On Training On Geogebra	23/01/ 2026



Anekant Education Society's
Jaysingpur College, Jaysingpur

Department of Mathematics & Department of Physics
Jointly Organized

Two days Workshop on Sci-Lab & Python
Programming

Under Agies of
DBT-STAR College Scheme



Resource Person

Dr. Shaila Shivaji Jadhav

PG Coordinator
Tuljaram Chaturchand College, Baramati



Date: 12,13 September 2025 , Time 11:00 a.m. onwards

Venue: **Mathematics Department**

Organizing Committee

Mr. P.R.Patil
Departmental
Coordinator DBT Star

Dr. P.P Chikode
Departmental
Coordinator DBT Star

Dr. S.D Umdale
In-charge Coordinator DBT Star

Prof. Dr. Smita Mahajan
In-charge Science Faculty

Smt. Shinde V.H
Convener & Head
Department of Mathematics

Prof. Dr. R .D. Mane
Head
Department of Physics

Dr. S.R Sable
Coordinator DBT Star

Hon. Dr. Surat Manjare
Principal



Anekant Education Society's

Jaysingpur College, Jaysingpur Department of Mathematics

Name of the Activity: Two Days workshop on "Sci-Lab & Python"

Year:	2025-26
Name of the Activity:	Two Days workshop on "Sci-Lab & Python"
Date:	12 & 13 september 2025
Venue:	Department of Mathematics
Co-ordinator:	Smt. Shinde V.H.
Organised for:	Jaysingpur College, Jaysingpur
No. of Participants	34
Nature:	Academic
Chief Guest/s or Resource Person/s	Dr. Shaila Shivaji Jadhav Assistant Professor, Department of Mathematics, Tuljaram Chaturchand College, Baramati

(# Photos, participant's list and other documents are attached)

Two Days Online Hands-On Training of "Python & Scilab " was conducted by the department of Mathematics & Department of Physics under the DBT-Star College Scheme. Smt. Shinde V.H., Head of Mathematics department have welcomed all the dignitaries on the dais and participants. Prof. Dr.Smita Mahajan, Science Faculty Incharge, Dr. S.D. Umdale, Incharge Coordinator, DBT Star College Scheme, Dr R.D.Mane Head of department of Phsics ,Mr. P. R. Patil and 30 students were present for the program. Smt. Shinde V.H. felicitated Resource Person Dr. Shaila Shivaji Jadhav Assistant Professor, Department of Mathematics, Tuljaram Chaturchand College, Baramati. Smt. Shinde V.H. introduced the Resource Person. The programme was a great success and memorable learning event for the students. The vote of thanks given by Dr. R.D. Mane Sir.

In first day Dr. Shaila Jadhav discussed the application of Scilab, installation of Scilab basics of Expressions and operators, Functions, etc. In second day She discussed application of Python & installation of Python . Also some basic concept of Python discussed such as set, string, matrix, import module, etc.

Photos :





Anekant Education Society's
Jaysingpur College, Jaysingpur
Two days Workshop on Python and Scilab
Attendance

Date: 12/09/2025

Time: 11:00 a.m. to 1:00 p.m.

Sr. No.	Name of student	Class	Sign
1	Gufaan S. Nadaf	B.Sc I	
2	Harshad A. Khilase	B.Sc I	
3	Sohan S. Panhale	B.Sc I	
4	Aditye S. Pabhade	B.Sc I	
5	Saamresh R. Kolbade	B.Sc I	
6	Sujeetsingh Satishsingh Shilade	B.Sc I	
7	Pranav Parashuram Kamble	B.Sc I	
8	Sahil Rahul Kamble	B.Sc I	
9	Shital Rahul Karadape	B.Sc I	
10	Vivek Vishwas Kamble	B.Sc I	
11	Avinash Suresh Shirde	B.Sc I	
12	Vihary S. Kamble	B.Sc II	
13	Aditya D. Kamble	B.Sc II	
14	Prem B. Patil	B.Sc II	

Anekant Education Society's
Jaysingpur College, Jaysingpur
 Two days Workshop on Python and Scilab
 Attendance

Date: 13/09/2025

Time: 11:00 a.m. to 1:00 p.m.

Sr. No.	Name of student	Class	Sign
1.	Shreuti S. Kamble	B.Sc-II	
2.	Samruddhi M. Nanaware	BSC-II	
3.	Sakshi C. Mane	BSC-II	
4.	Pooja S. Salokhe	B.Sc.-II	
5	Peandli L. Gureav	BSC-II	
6	shubhangi M. Mote	BSC-II	
7	Rutuja A. Raut	B.Sc-II	
8	Shubhangi S. Tipugade	B.Sc-II	
9	Sonija H. Mestri	B.Sc-II	
10	Anuja A. Pawar	BSC-II	
11	Nuseziya A. Patel	Bsc-II	
12	Kamal I. Varak	B.Sc II	
13	Prem B. Patil	B.Sc II	
14	Aditya D. Kamble	B.Sc-II	
15	Vihay S. Kamble	BSC-II	
16	Aryan R. Kamble	B.Sc. II	
17	Balhmesh B. Kavale	Bsc II	
18	Purva S. Aurwade	B.Sc III	
19	Manisha B. Chaudhari	B.Sc III	
20	Sohan Sukumar Udagava	B.Sc I	

Mr. Pritam R. Patil,
 Departmental Coordinator,
 Department of Mathematics.

PROJECT INVESTIGATOR

Dr. Sandip R. Sabale
 Coordinator
 DBT-STAR College Scheme
 Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION

Dr. Surat A. Manjare
 PRINCIPAL
 Jaysingpur College, Jaysingpur



Anekant Education Society
Jaysingpur College Jaysingpur
Department of Mathematics &
Science Association
organize
Online Guest Lecture on



Legacy of Ancient Mathematics in Modern Applications

Assisted by DBT STAR COLLEGE SCHEME

Resource Person



Prof. S. A. Katre
Former Head,
Mathematics Department,
Savitribai Phule Pune University.

08/10/2025 |
11:00 am TO 12:00
am | Mathematics
Department |

Organizing Committee

Dr.S.A.Manjare
Principal

Dr S.S.Mahajan
Head,
Science Stream

Dr S. R. Sable
Coordinator,
DBT Star Scheme

Dr. S. D. Umdale
Dept. Coordina tor

Mr. P. R. Patil
Convenor &
Dept. Coordina tor

Mrs.V.H.Shinde
Head,
Mathematics Dept.

Dr .P.P.Chikode
Dept. Coordina tor

Dr.R.D.Mane
Head,
Physics Dept.

Dr.R.S.Dhabbe
Dept. Coordina tor

Dr.S.R.Patil
Head,
Zoology Dept.

Zoom link-

<https://us04web.zoom.us/j/76827224922?pwd=grIEZCgC8XoG4IrybhQSADNHCAbdP6.1>



Prin. Dr. S. A. Manjare
M. Sc., M.Phil., Ph.D.

Anekant Education Society's
Jaysingpur College, Jaysingpur
Department of Mathematics

Online guest lecture on
“Legacy of Ancient Mathematical in Modern Applications”
under the DBT-Star College Scheme

Year:	2025-26
Name of the Activity:	Online guest lecture on “ Legacy of Ancient Mathematical in Modern Applications”
Date:	8th October , 2025.
Venue:	Department of Mathematics
Co-ordinator/Convenor:	Mr. P.R. Patil,
Organised for:	Faculty and Students
No. of Participants	14
Nature:	Academic
Chief Guest/s or Resource Person/s	Prof. S. A. Katre, Chair Professor, Lokmanya Tilak Chair, SPPU, Pune.

(# Photos, participant's list and other documents are attached)

Online guest lecture on “Legacy of Ancient Mathematical in Modern Applications” has been arranged by Department of Mathematics under DBT Star college scheme 8th October, 2025 at 11.00 a.m. Departmental coordinator Mr. P. R. Patil of DBT star college scheme welcomed the resource person Prof. S. A. Katre and 13 participants. Mr.P. R. Patil introduced the resource person. Prof. Katre's lecture traced the evolution of Indian mathematics, connecting ancient texts to contemporary science. The talk began with the geometric principles in Baudhāyana's Sulba-Sūtras and progressed to the advanced work of Pingala, Mahāvīra, and Āryabhaṭa.

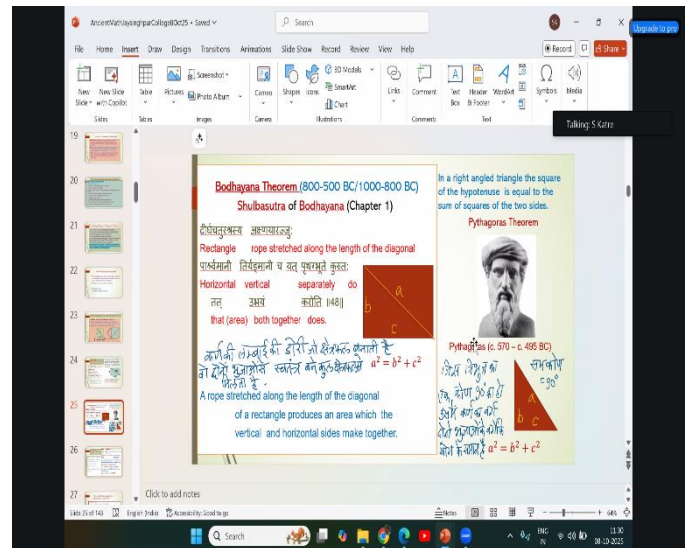
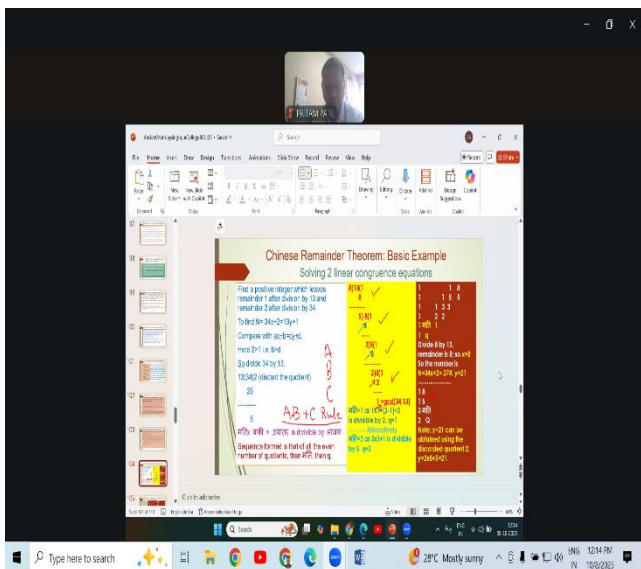
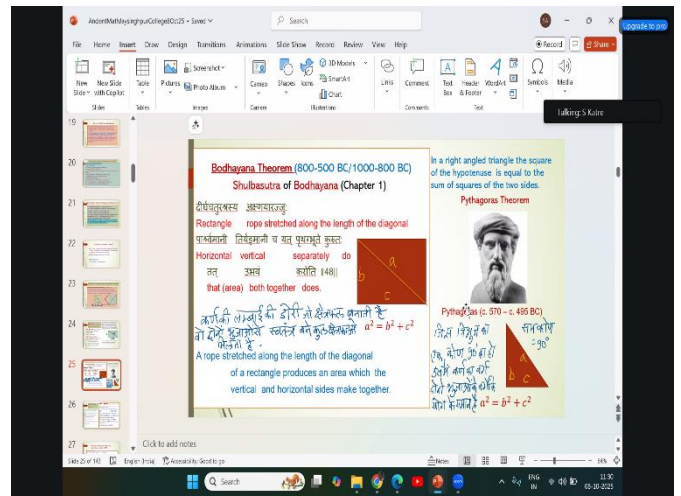
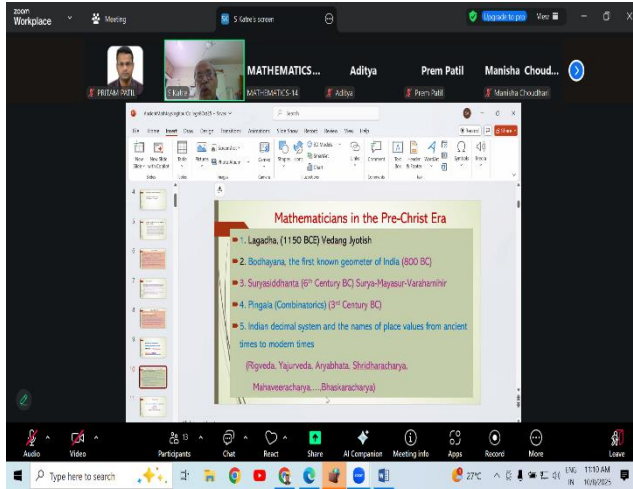
Key insights included:

- Pingala's analysis of poetic metre was presented as an early form of combinatorics and binary logic, foreshadowing concepts like recursion and binomial coefficients.
- Mahāvīra's systematic work in algebra and combinatorics was shown to predate similar developments in the West.
- A central theme was Āryabhaṭa's Kuṭṭaka method for solving equations, which was directly linked to the modern Extended Euclidean Algorithm. The lecture compellingly argued that this ancient technique is the conceptual foundation for

modular inversion, a critical component in Euler's ϕ -function and RSA cryptography.

In conclusion, the lecture successfully demonstrated how ancient insights in recursion, geometry, and number theory provide a direct conceptual foundation for modern fields including computer science, engineering, and cryptography.

The vote of thanks given by Mr. P. R. Patil.



Ratil
 Mr. Pritam R. Patil,
 Departmental Coordinator,
 Department of Mathematics.

PROJECT INVESTIGATOR
Sabale
 Dr. Sandip R. Sabale
 Coordinator
 DBT-STAR College Scheme
 Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION
Manjare
 Dr. Surat A. Manjare
 PRINCIPAL
 Jaysingpur College, Jaysingpur

Report On
Webinar on Mathematics in Cybersecurity:
Applications, Models, And Career Pathways

**JAYSINGPUR
COLLEGE,
JAYSINGPUR.**



Organized by
DEPARTMENT
OF MATHEMATICS
AND
DBT STAR
COLLEGE SCHEMES

Date: 03/01/2026



Anekant Education Society's
Jaysingpur College, Jaysingpur



Department of Mathematics & Science Association

organizes

webinar on

Mathematics in Cybersecurity: Applications, Models, and Career Pathways

Supported by
DBT-Star College Scheme



Resource Person

Amarjit B. Gajare

Cybersecurity Administrator,
Starlight Data Solutions,
Pune.

3rd January 2026 | Time: 11:00 am | Venue: Mathematics Laboratory

Organizing Committee

Mr. P. R. Patil
Convenor &
Dept. Coordinator,
DBT Star Scheme

Mrs. V. H. Shinde
Head,
Mathematics Dept.

Dr. S. R. Sabale
Coordinator,
DBT Star Scheme

Dr. S. S. Mahajan
Head,
Science Stream

Dr. S. A. Manjare
Principal

Dr. R. S. Dhabbe
Dept. Coordinator,
DBT Star Scheme

Dr. S. D. Umdale
Dept. Coordinator,
DBT Star Scheme

Dr. S. R. Patil
Dept. Coordinator,
DBT Star Scheme

Dr. P. P. Chikode
Dept. Coordinator,
DBT Star Scheme

Dr. R. D. Mane
Head,
Physics Dept.



Anekant Education Society's
Jaysingpur College, Jaysingpur

**Report on Webinar: MATHEMATICS IN CYBERSECURITY:
APPLICATIONS, MODELS, AND CAREER PATHWAYS**

Year:	2026
Name of the Activity:	Webinar on “Mathematics In Cybersecurity: Applications, Models, And Career Pathways”
Date:	3rd January 2026
Venue:	-
Co-ordinator/Convenor:	Mr. P. R. Patil
Organised for:	Students, Teaching Staff
No. of Participants	25(23 Students , 2 Teachers)
Nature:	Academic
Chief Guest/s or Resource Person/s	Mr. Amarjit B. Gajare, Cybersecurity Administrator, Starlight Data Solutions, Pune.

On 3rd January 2026, the Department of Mathematics & Science Association of Jaysingpur College, Jaysingpur, successfully organized a webinar titled “Mathematics in Cybersecurity: Applications, Models, and Career Pathways.” This webinar supported by the DBT-Star College Scheme.

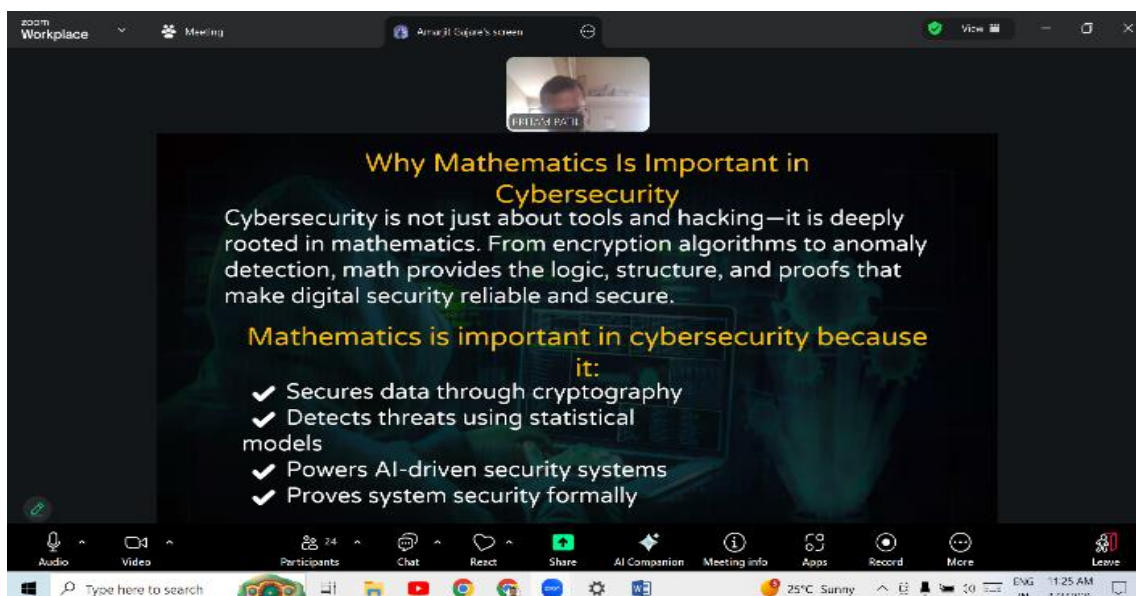
The webinar was facilitated by Mr. Amarjit B. Gajare, Cybersecurity Administrator at Starlight Data Solutions, Pune, who served as the resource person. A total of 23 students and 2 teaching staff members actively participated in the event.

During the webinar, Mr. Gajare provided an insightful overview of key cryptography concepts, highlighting the mathematical foundations and real-world applications in cybersecurity. The major topics covered included:

- **Symmetric Cryptography:** The basics of encryption systems using the same key for encryption and decryption.
- **Asymmetric Cryptography:** A discussion on public-key cryptographic techniques, specifically RSA and ECC (Elliptic Curve Cryptography) algorithms, and their advantages in secure communication.
- **Hash Function Cryptography:** Explanation of hash functions, their role in data integrity, and how they are used in modern security protocols.

In addition to technical concepts, the resource person also discussed various certificate courses and training pathways relevant to cybersecurity, helping students understand educational opportunities for building a career in this field.

The organizing committee, including departmental heads and DBT Star Scheme coordinators, ensured smooth execution of the webinar. The session provided valuable exposure to mathematical underpinnings of cybersecurity and helped participants explore future academic and career options in this rapidly growing domain.



The screenshot shows a Zoom meeting window. At the top, the title bar reads "zoom Workplace Meeting" and "Amrjji Gajare's screen". A small video thumbnail of the host, Amrjji Gajare, is visible. The main content is a slide with the following text:

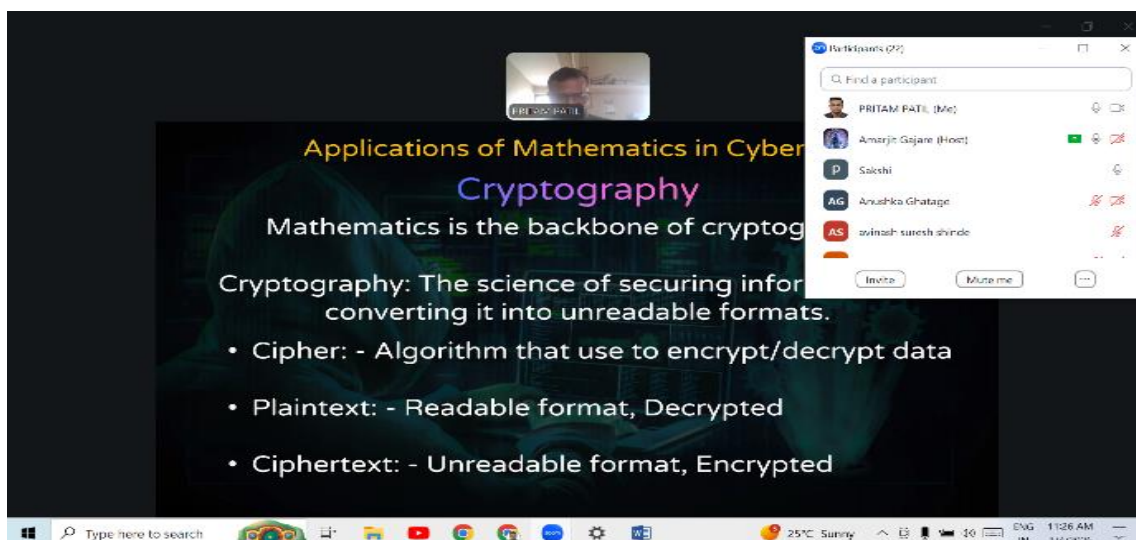
Why Mathematics Is Important in Cybersecurity

Cybersecurity is not just about tools and hacking—it is deeply rooted in mathematics. From encryption algorithms to anomaly detection, math provides the logic, structure, and proofs that make digital security reliable and secure.

Mathematics is important in cybersecurity because it:

- ✓ Secures data through cryptography
- ✓ Detects threats using statistical models
- ✓ Powers AI-driven security systems
- ✓ Proves system security formally

The Zoom control bar at the bottom shows 24 participants, chat, react, share, AI Companion, meeting info, apps, record, more, and leave buttons. The Windows taskbar at the very bottom shows the search bar, taskbar icons, and system tray with a temperature of 25°C and time of 11:25 AM on 1/25/2025.



The screenshot shows a Zoom meeting window with a slide titled "Applications of Mathematics in Cyber Cryptography". The slide content is as follows:

Applications of Mathematics in Cyber Cryptography

Mathematics is the backbone of cryptography

Cryptography: The science of securing information by converting it into unreadable formats.

- Cipher: - Algorithm that use to encrypt/decrypt data
- Plaintext: - Readable format, Decrypted
- Ciphertext: - Unreadable format, Encrypted

A "Participants (22)" window is open on the right side of the slide, showing a list of participants: PRITAM PATIL (Me), Amrjji Gajare (Host), Sakshi, Anushka Ghatage, and Anish Suresh Shinde. The Zoom control bar and Windows taskbar are also visible at the bottom.

Understanding Encryption and Decryption

- **Encryption:** The process of converting readable data (plaintext) into an unreadable format (ciphertext) using an algorithm and key.
- **Decryption:** Converting the unreadable data (ciphertext) back to its original readable form (plaintext) using a key.
- **Example:** Sending a secret message that only the intended person can decode.

Participants (23)

Find a participant

- PRITAM PATIL (Me)
- Amarjit Gajare (Host)
- Sakshi
- Aditya
- AG Anushka Ghatge

Invite Mute me

Type here to search 25°C Sunny 11:27 AM 1/3/2026

Career Pathways for Mathematics Students in Cybersecurity

- SOC Analyst
- Cryptography Engineer
- Cybersecurity Researcher
- Threat Intelligence Analyst
- Security Data Scientist
- Digital Forensic Analyst

Click to add notes

Type here to search 27°C Sunny 12:16 PM 1/3/2026

Types of Cryptographic Algorithm

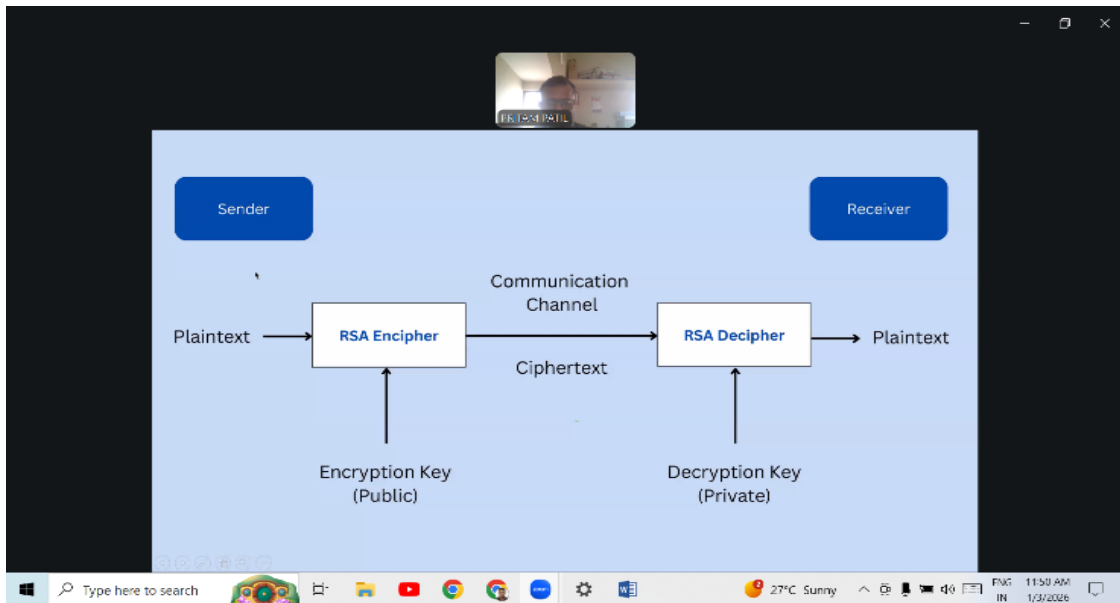
1. Symmetric Cryptography

The same key is used for both encryption and decryption

- Sender and receiver use the same key
- Fast and used in internal systems
- Example: AES (Advanced Encryption Standard)

use-case: Malware using AES encryption to hide its payload

Participants (24): PRITAM PATIL (Me), Amrajit Gajare (Host), Sakshi, Aditya, Anushka Chavara



Patil

Mr. Pritam R. Patil,
Departmental Coordinator,
Department of Mathematics.

PROJECT INVESTIGATOR

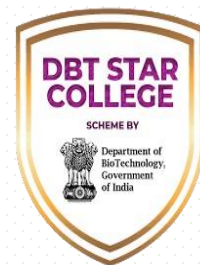
Sabale
Dr. Sandip R. Sabale
Coordinator
DBT-STAR College Scheme
Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION

Manjare
Dr. Surat A. Manjare
PRINCIPAL
Jaysingpur College, Jaysingpur



Anekant Education Society's
Jaysingpur College, Jaysingpur

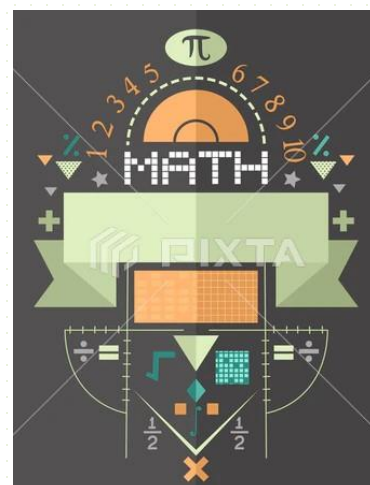
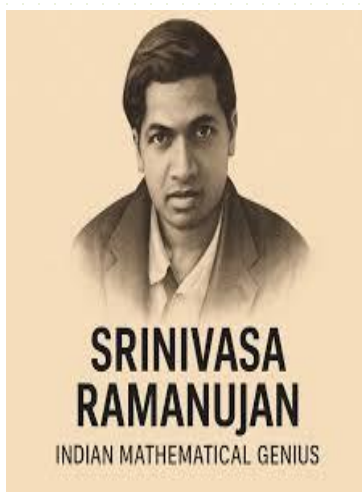
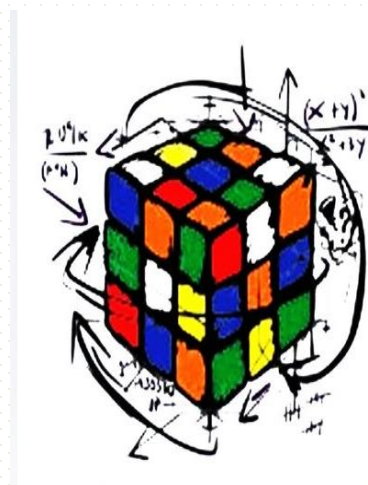


**Department of Mathematics &
Science Association**
organizes

Celebration Of National Mathematics Day : Poster & Model Presentation

under
DBT-Star College Scheme

Date: 10 /01/2026 | Time: 11:00 am | Venue: Mathematics Laboratory



Organizing Committee

Dr. S. R. Sabale
Coordinator
DBT Star College

Prof. Dr. S.S. Mahajan
Head,
Science Stream

Dr. S. A. Manjare
Principal

Mr. .P. R. Patil
Coordinator
Dept. of Mathematics

Mrs. V. H. Shinde
Head
Dept. of Mathematics

Dr. P. P. Chikode
Coordinator
Dept. of Mathematics

Dr. R. S. Dhabbe
Coordinator
Dept. of Chemistry

Dr. S. R. Patil
Coordinator
Dept. of Zoology

Dr. S. D. Umdale
Coordinator
Dept. of Botony



Anekant Education Society's

Jaysingpur College, Jaysingpur Department of Mathematics

Name of the Activity: National Mathematics Day Celebration

Year:	2025-26
Name of the Activity:	Mathematics Exhibition
Date:	10 Jan 2026
Venue:	Department of Mathematics
Coordinator:	Smt. Shinde V.H. and Mr. P. R. Patil
Organized for:	Jaysingpur College, Jaysingpur
No. of Participants	60
Nature:	Academic
Chief Guest/s or Resource Person/s	1. Shri. Balasaheb Ingale. Local Committee Member 2. Dr. S. A. Manjare, Principal, Jaysingpur College, Jaysingpur

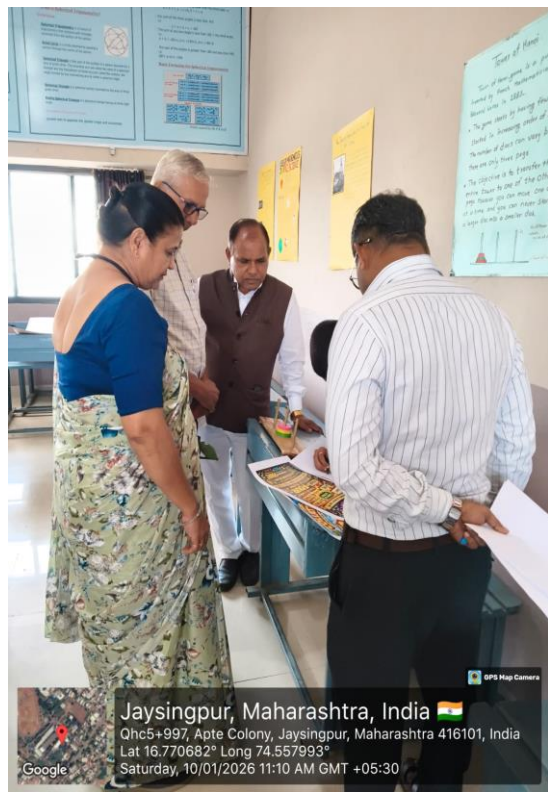
(# Photos, participant's list and other documents are attached)

A poster & mathematical model presentation is a way to communicate your research or your understanding of a topic in a short and concise form. It helps improve your skills, communication, and your ability to express your technical opinions. Poster presentations develop the ability to clearly and concisely communicate important skills in your workplace. The purpose of a poster presentation will be shaped by how it is used in your discipline and by the assessment task itself.

The program's Chief Guest, Shri. Balasaheb Ingale, Local Committee Member & Principal Dr. S.A. Manjare inaugurated the program. Dr. R. D. Mane, Dr. Smita Mahajan, Mrs. D. S. Bamane, Dr. R.S.Dhabbe, Mr. P. R. Patil, Smt. V.H. Shinde and other faculties of science were present for the program. A total of 60 students participated in this activity, from FY, SY, and TY classes. The program was a great success and a memorable learning event for the students. The vote of thanks was given by Smt. V.H. Shinde.



Jaysingpur, Maharashtra, India 🇮🇳
 College, Near Main College Gate, Apte Colony, Jaysingpur, Maharashtra
 416101, India
 Lat 16.770631° Long 74.557921°
 Saturday, 10/01/2026 11:05 AM GMT +05:30



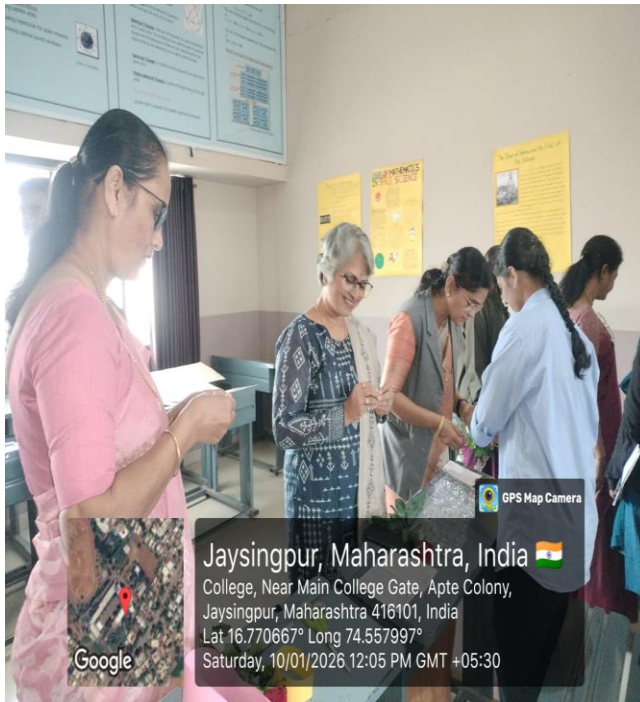
Jaysingpur, Maharashtra, India 🇮🇳
 Qhc5+997, Apte Colony, Jaysingpur, Maharashtra 416101, India
 Lat 16.770682° Long 74.557993°
 Saturday, 10/01/2026 11:10 AM GMT +05:30



Jaysingpur, Maharashtra, India 🇮🇳
 College, Near Main College Gate, Apte Colony,
 Jaysingpur, Maharashtra 416101, India
 Lat 16.770663° Long 74.55799°
 Saturday, 10/01/2026 12:10 PM GMT +05:30



Jaysingpur, Maharashtra, India 🇮🇳
 College, Near Main College Gate, Apte Colony, Jaysingpur,
 Maharashtra 416101, India
 Lat 16.770666° Long 74.557947°
 Saturday, 10/01/2026 11:36 AM GMT +05:30



Ratil
 Mr. Pritam R. Patil,
 Departmental Coordinator,
 Department of Mathematics.

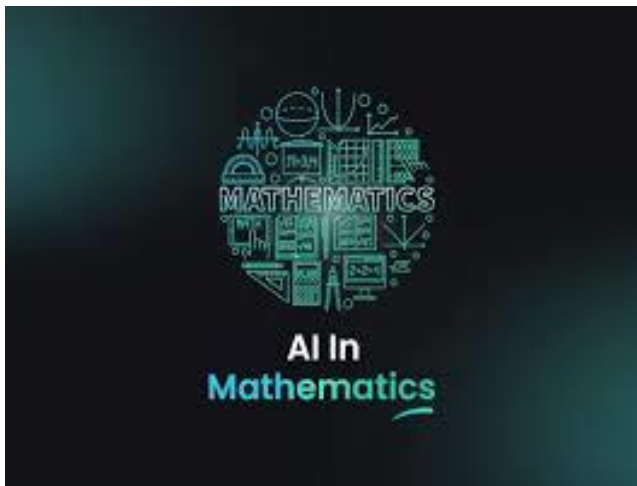
PROJECT INVESTIGATOR

 Dr. Sandip R. Sabale
 Coordinator
 DBT-STAR College Scheme
 Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION

 Dr. Surat A. Manjare
 PRINCIPAL
 Jaysingpur College, Jaysingpur

Report on Webinar: Mathematics: The Hidden Engine in AI



**JAYSINGPUR
COLLEGE,
JAYSINGPUR.**

Organized by

**Department
of
Mathematics
&
DBT Star
College
Schemes**

Date: 12/01/2022



Anekant Education Society's
Jaysingpur College, Jaysingpur
Department of Mathematics & Science Association



organizes

webinar on

Mathematics : The Hidden Engine In Artificial Intelligence

Supported by

DBT-Star College Scheme



Resource Person

Mr. Shashank Deshpande

M.Sc (Mathematics), Pune University.
Senior AI Software Developer,
Garrett - Advancing Motion,
Bangalore.

12th January 2026 | Time: 10:00 am | Venue: Mathematics Laboratory

Organizing Committee

Prof. Dr. S. S. Mahajan Head, Science Stream		Dr. S. A. Manjare Principal.	
Mrs. V. H. Shinde Head, Mathematics Dept	Mr. P. R. Patil Convenor & Dept Coordinator	Dr. S. R. Sabale Coordinator, DBT Star Scheme	Mr. S.A. Chavare Finance Officer & Office Supredentant
Dr. R. S. Dhabbe	Dr. S. D. Umdale	Dr. S. R. Patil	Dr. P. P. Chikode



Anekant Education Society's
Jaysingpur College, Jaysingpur

Report on Webinar:
"Mathematics: The Hidden Engine in AI"

Year:	2026
Name of the Activity:	Webinar on "Mathematics: The Hidden Engine in AI"
Date:	12th January, 2026
Venue:	Mathematics Laboratory
Co-ordinator/Convenor:	Mr. P. R. Patil
Organised for:	Students, Teaching Staff
No. of Participants	18(16 Students , 2 Teachers)
Nature:	Academic
Chief Guest/s or Resource Person/s	Mr. Shashank Deshpande, M.Sc. Mathematics, Senior AI Software Developer, Garrett Advancing Motion, Bangalore.

Mathematics: The Hidden Engine in Artificial Intelligence

ORGANIZING BODY

Anekant Education Society's Jaysingpur College, Jaysingpur
Department of Mathematics & Science Association
(Supported by DBT-STAR College Scheme)

DATE, TIME AND VENUE

Date: 12th January 2026

Time: 10:00 a.m.

Venue: Mathematics Laboratory

RESOURCE PERSON

Mr. Shashank Deshpande

M.Sc. (Mathematics), Pune University

Senior AI Software Developer, Garrett – Advancing Motion, Bangalore

INTRODUCTION

The Department of Mathematics & Science Association of Anekant Education Society's Jaysingpur College organized a webinar titled "MATHEMATICS: THE HIDDEN ENGINE IN ARTIFICIAL INTELLIGENCE" with the objective of highlighting the foundational role of mathematics in modern artificial intelligence systems. The program aimed to bridge the gap between abstract mathematical concepts and their real-world applications in AI.

OBJECTIVES OF THE WEBINAR

- To demonstrate the importance of mathematics in artificial intelligence and data-driven technologies.
 - To motivate students to appreciate mathematical theory as a practical and powerful tool in advanced technologies.
 - To provide career-oriented insights into AI and software development from an industry perspective.
-

PROCEEDINGS OF THE WEBINAR

The webinar commenced at 10:00 a.m. with a brief introduction to the theme and the resource person. Mr. Shashank Deshpande delivered an engaging and informative lecture explaining

how various branches of mathematics such as linear algebra, calculus, probability, statistics, optimization, and discrete mathematics form the backbone of artificial intelligence and machine learning algorithms.

He discussed real-life industrial applications of AI, emphasizing how mathematical models are translated into algorithms for tasks such as pattern recognition, prediction, automation, and intelligent decision-making. The session also included examples from the automotive and motion-control industry, providing students with valuable exposure to practical implementations of AI.

The webinar concluded with an interactive question-and-answer session. Students actively participated by asking questions related to career opportunities, required mathematical skills for AI, and the future scope of artificial intelligence. The resource person addressed all queries in a clear and encouraging manner.

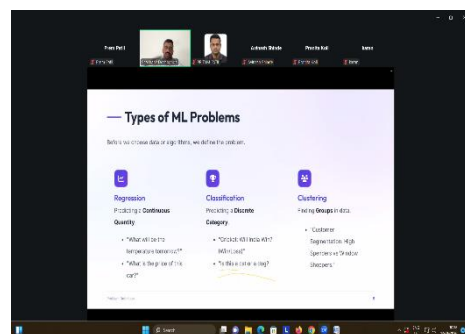
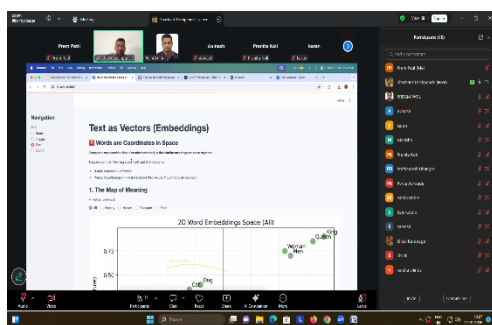
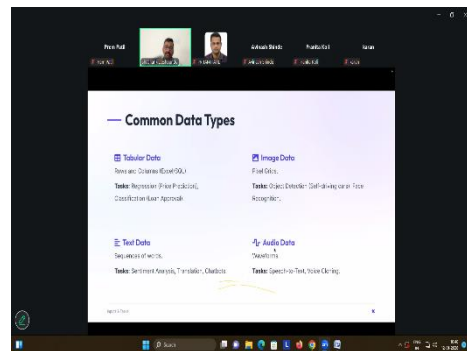
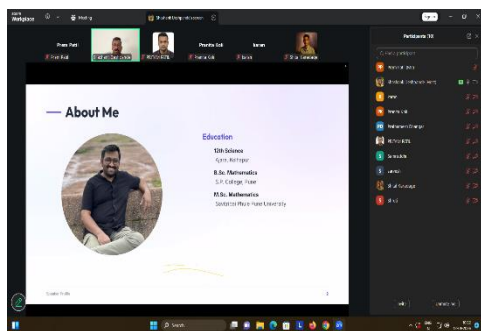
The webinar “MATHEMATICS: THE HIDDEN ENGINE IN ARTIFICIAL INTELLIGENCE” was highly informative and enriching. It successfully achieved its objectives by enhancing awareness about the relevance of mathematics in AI and motivating students toward interdisciplinary learning.

The organizing committee expressed sincere gratitude to Mr. Shashank Deshpande for sharing his expertise and valuable insights. Thanks were also extended to the college administration, DBT-STAR College Scheme, faculty members, and students for their support and active participation in making the webinar a success.

Organizing Committee

Department of Mathematics & Science Association

Anekant Education Society’s Jaysingpur College, Jaysingpur



Common Data Types

Tabular Data Rows and Columns (Excel/CSV). Tasks: Regression (Price prediction), Classification (Loan Approval).	Image Data Pixel Grids. Tasks: Object Detection (Self-driving cars), Face Recognition.
Text Data Sequences of words. Tasks: Sentiment Analysis, Translation, Chatbots.	Audio Data Waveforms. Tasks: Speech-to-Text, Voice Cloning.

2. Logistic Regression

Practical: Credit Card Fraud
 Used when the answer is **Binary 0 or 1**. A straight line doesn't work because probability implies a limit (0% to 100%).
Example: Predict if a transaction is Fraud.

$$f(x) = \frac{1}{1 + e^{-x}}$$

The **Sigmoid Function** creates an 'S' curve. If the output probability > 0.5, we flag the transaction.

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4. Decision Trees

```

    graph TD
      A[Loan Application CIBIL Score?] -- High (>750) --> B[Loan Approved]
      A -- Low (<750) --> C[Age?]
      C -- Young (<25) --> D[Loan Denied]
      C -- Mature (>25) --> E[Income?]
      E -- High (>50k) --> F[Loan Approved]
      E -- Low (<50k) --> G[Loan Denied]
  
```

Practical: Loan Approval
 Scenario: A bank decides whether to approve a loan. It needs transparent rules.
The Math: Entropy (Chaos)
 The math asks: "Which question (Income? Age? Credit Score?) best splits the group into pure 'Approve' or 'Reject' buckets?"
 The algorithm calculates **Information Gain** to mathematically choose the most important rule at each step.

5. Deep Learning (Neural Networks)

Architecture of Artificial Neural Network
 Task: Recognizing the number "7" written on a check.
The Math: Layered Transformation

- Layer 1: Detects small lines and curves.
- Layer 2: Combines lines into basic forms.
- Layer 3: Combines shapes to identify "7".

It uses **Matrix Multiplications** followed by **Activation Functions (ReLU)**. ReLU is the "bottleneck" that decides if a neuron fires (is this a line?) or not.

4. Decision Trees

```

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Navigation

Dimension 1: (Abstract = Physical)

2. Calculate Distance

The distance between 0 and 0.1118 is 0.1118

3. Vector Math (Analogy)

You Use AI Every Day

Instagram Reels

Recommender Systems: Matrix factorization predicts the probability of you "liking" a video.

The Mathematics of "Interests"

Imagine a map where "users" (dots) are close together:

- You are a point on this map (vector).
- Every Video is a point on this map.

The algorithm measures the Angle between You and the Video.

Small Angle = High Similarity = "Suggested for You"

You Use AI Every Day

Google Maps

Graph Theory: Weighted shortest path algorithms calculate traffic and ETA.

Dijkstra's Algorithm

Traffic Prediction - Statistical models and machine learning are used to analyze historical traffic patterns and predict future congestion.

You Use AI Every Day

Face ID

Computer Vision: Geometric deep learning measuring the Euclidean distance between facial landmarks.

Detecting a Face

How does the camera identify a Face?

It scans the Matrix of pixels looking for sudden changes in numbers (Gradients).

Edge = $Pixel_u - Pixel_v$

If the difference is high (e.g., 200 - 50), it means there is an edge (like the side of a nose).

3. Support Vector Machine (SVM)

Practical: Sentiment Analysis

Scenario: Classifying Movie Reviews as Positive or Negative

We map text to vectors (numbers). "Amazing" might be [0.9, 0.8], "Boring" might be [0.1, 0.2].

The Math: SVM finds the "Hyperplane" (Divider) that best separates the happy reviews from the angry reviews.

It maximizes the Margin (gap) between the divider and the nearest reviews to avoid confusion.

1. Linear Regression

Practical: Ad Spend vs Sales

Scenario: A business wants to know: "If we spend ₹1 Lakh more on Instagram Ads, how much will Sales increase?"

Sales = $m * \text{spend} + c$

- m (Slope): Impact factor. If $m=5$, every ₹1 spent brings ₹5 in sales.
- c (Intercept): Baseline sales with zero ad spend (Word of mouth).

The math simply minimizes the distance between the line and the actual sales data points.

Patil

Mr. Pritam R. Patil,
Departmental Coordinator,
Department of Mathematics.

PROJECT INVESTIGATOR

Sabale

Dr. Sandip R. Sabale
Coordinator
DBT-STAR College Scheme
Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION

Manjare

Dr. Surat A. Manjare
PRINCIPAL
Jaysingpur College, Jaysingpur



Anekant Education Society's
Jaysingpur College, Jaysingpur

Department of Mathematics

One day Online Workshop on

“Code smarter with GitHub and GitHub Copilot”

Under Agies of
DBT-STAR College Scheme



Date: 17 Jan 2026 , Time 11:30 a.m. onwards



Resource Person

Mr. Jitendra S. Gund

Lead I-Product Architect,
UST,Pune.

Our Patrons

Shri. Padmakar Patil
Treasurer

Dr. Mahavir Akkole
Secretary

Dr. Subhash Adadande
Chairman

All Local Committee members, Anekant Education Society's

Organizing Committee

Mr. P.R.Patil
Departmental
Coordinator DBT Star

Smt. Shinde V.H
Convener & Head
Department of Mathematics

Dr. S.R. Sabale
Coordinator
DBT Star College

Hon. Dr. Surat Manjare
Principal

Dr.P.P.Chikode

Dr.S. D. Umdale

Dr. R.S.Dhabbe

Dr. S. R. Patil

Venue: Conference Hall, Jaysingpur College, Jaysingpur



Anekant Education Society's

Jaysingpur College, Jaysingpur Department of Mathematics

Name of the Activity: One Day workshop on “Code smarter with GitHub & GitHub Copilot”

Year:	2025-26
Name of the Activity:	One Day workshop on “Code smarter with GitHub & GitHub Copilot”
Date:	17 Jan 2026
Venue:	Department of Mathematics
Co-ordinator:	Smt. Shinde V.H.
Organised for:	Jaysingpur College, Jaysingpur
No. of Participants	35
Nature:	Academic
Chief Guest/s or Resource Person/s	Mr. Jeetendra S. Gund Lead 1, Product Architect, UST, Pune

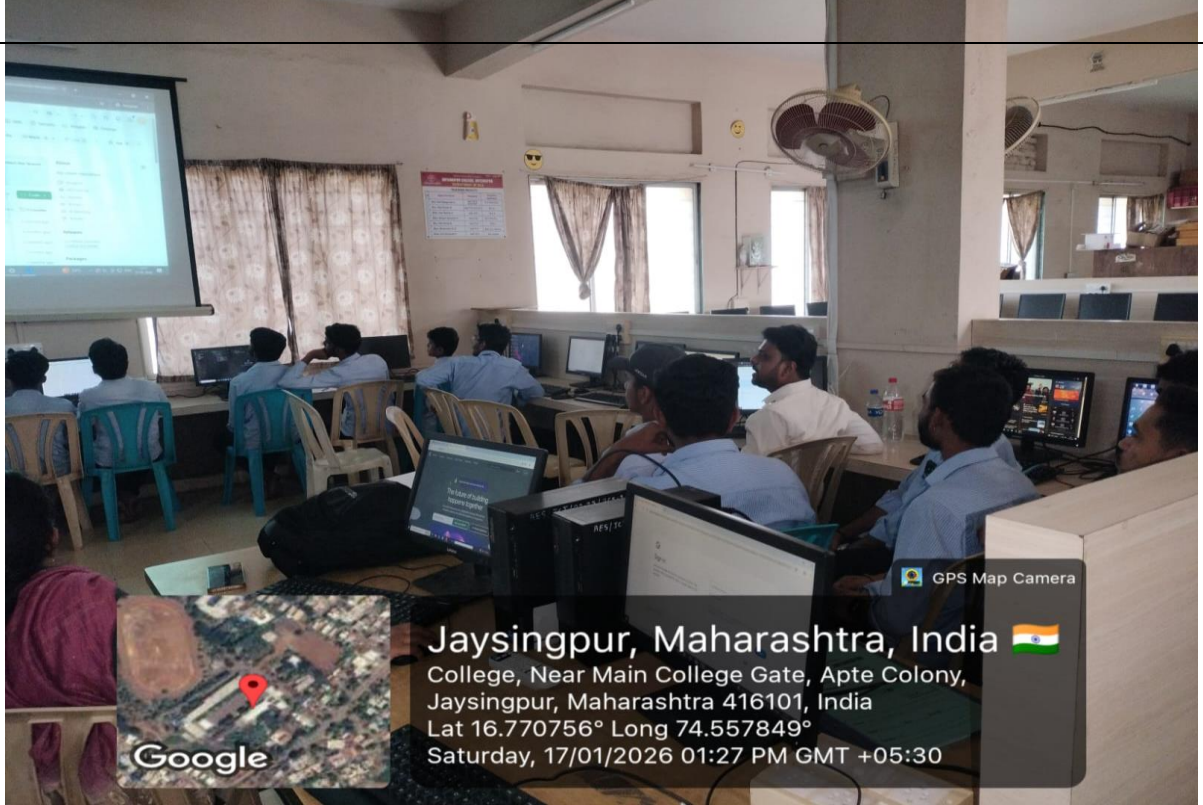
(# Photos, participant's list and other documents are attached)

A One Day Online Hands-On Training Program on “Code smarter with GitHub & GitHub Copilot” was successfully conducted by the Department of Mathematics under the DBT-Star College Scheme. The program began with a welcome address by Smt. Shinde V. H., Head, Department of Mathematics, who warmly welcomed all the dignitaries on the dais and the participants. Mr. P. R. Patil, and 35 students, who remained actively engaged throughout the program. A technical session was organized to familiarize participants with modern development tools essential for collaborative and efficient software development. The program was conducted in two sessions and was resourcefully handled by Mr. Jeetendra Gund, who shared both theoretical insights and practical demonstrations.

The first session focused on GitHub, a widely used version control and collaboration platform. Mr. Gund explained the fundamentals of version control using Git and highlighted the importance of GitHub in team-based software development. Key topics covered included creating repositories, cloning projects, committing changes, branching, merging, and handling pull requests. The session also emphasized best practices for maintaining code repositories, collaboration among developers, and tracking project changes effectively. Participants gained a clear understanding of how GitHub enhances productivity, transparency, and collaboration in real-world projects.

The second session introduced GitHub Copilot, an AI-powered coding assistant. Mr. Jeetendra Gund demonstrated how Copilot integrates with development environments to assist programmers by suggesting code snippets, functions, and logic in real time. He showcased practical examples where Copilot helps in writing cleaner code, reducing development time, and improving efficiency. The session also included a discussion on the ethical use of AI tools, limitations of AI-generated code, and the importance of developer judgment while using Copilot.





Jaysingpur, Maharashtra, India 
College, Near Main College Gate, Apte Colony,
Jaysingpur, Maharashtra 416101, India
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Saturday, 17/01/2026 01:27 PM GMT +05:30

GPS Map Camera

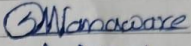
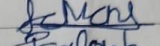

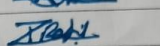
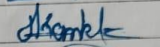
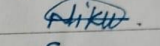

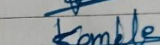

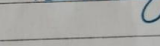
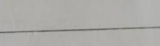


Jaysingpur, Maharashtra, India 
College, Near Main College Gate, Apte Colony,
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Saturday, 17/01/2026 11:46 AM GMT +05:30

GPS Map Camera

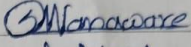
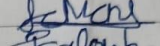

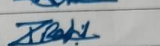
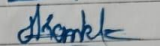
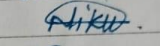
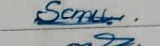
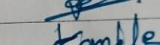

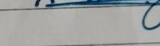
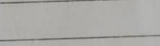
Anekant Education Society's
Jaysingpur College, Jaysingpur
 Workshop on Code smarter with GitHub and GitHub Copilot
 Attendance

Date: 17/01/2026

Sr. No.	Name of student	Class	Sign
1.	Samruddhi. M. Nanaware	BSC-II	
2.	Sakshi C. Mane	Bsc-II	
3.	Pooja S. Salokhe	Bsc-II	
4.	Aditya D. Kamble	Bsc-II	
5.	Prem B. Patil	B.sc-II	
6.	Vihay. S. Kamble	BSC-II	
7.	Nikhita G. Kavalhekar	BCS-III	
8.	Sonika B. Khot	BCS-III	
9.]	Vizendya samjorath	BEAII	
10.	shreuti. s. Kamble	Bsc-II	
11.	Anushka Ghadage	Bsc-II	

Anekant Education Society's
Jaysingpur College, Jaysingpur
 Workshop on Code smarter with GitHub and GitHub Copilot
 Attendance

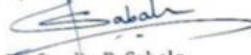
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5.	Prem B. Patil	B.sc-II	
6.	Vihay. S. Kamble	BSC-II	
7.	Nikhita G. Kavalhekar	BCS-III	
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9.]	Vizendya samjorath	BEAII	
10.	shreuti. s. Kamble	Bsc-II	
11.	Anushka Ghadage	Bsc-II	



Mr. Pritam R. Patil,
 Departmental Coordinator,
 Department of Mathematics.

PROJECT INVESTIGATOR



Dr. Sandip R. Sabale
 Coordinator
 DBT-STAR College Scheme
 Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION



Dr. Surat A. Manjare
 PRINCIPAL
 Jaysingpur College, Jaysingpur



Anekant Education Society's
Jaysingpur College, Jaysingpur

Department of Mathematics

One day Online Workshop on R software

Under Agies of
DBT-STAR College Scheme



Date: 21 Jan 2026 , Time 11:30 a.m. onwards



Resource Person

Dr. Shaila Shivaji Jadhav

PG Coordinator

Tuljaram Chaturchand College, Baramati

Our Patrons

Shri. Padmakar Patil
Treasurer

Dr. Mahavir Akkole
Secretary

Dr. Subhash Adadande
Chairman

All Local Committee members, Anekant Education Society's

Organizing Committee

Mr. P.R.Patil
Departmental
Coordinator DBT Star

Smt. Shinde V.H
Convener & Head
Department of Mathematics

Dr. S.R. Sabale
Coordinator
DBT Star College

Hon. Dr. Surat Manjare
Principal

Dr.P.P.Chikode

Dr.S. D. Umdale

Dr. R.S.Dhabbe

Dr. S. R. Patil

Venue: Mathematics Department, Jaysingpur College, Jaysingpur



Anekant Education Society's
Jaysingpur College, Jaysingpur
Department of Mathematics

Name of the Activity: Hands on training Program on "R-Software"

Year:	2025-26
Name of the Activity:	Hands on training on "R-Software"
Date:	21 Jan 2026
Venue:	Department of Mathematics
Co-ordinator:	Smt. Shinde V.H.
Organised for:	Jaysingpur College, Jaysingpur
No. of Participants	22
Nature:	Academic
Chief Guest/s or Resource Person/s	Dr. Shaila Shivaji Jadhav Assistant Professor, Department of Mathematics, Tuljaram Chaturchand College, Baramati

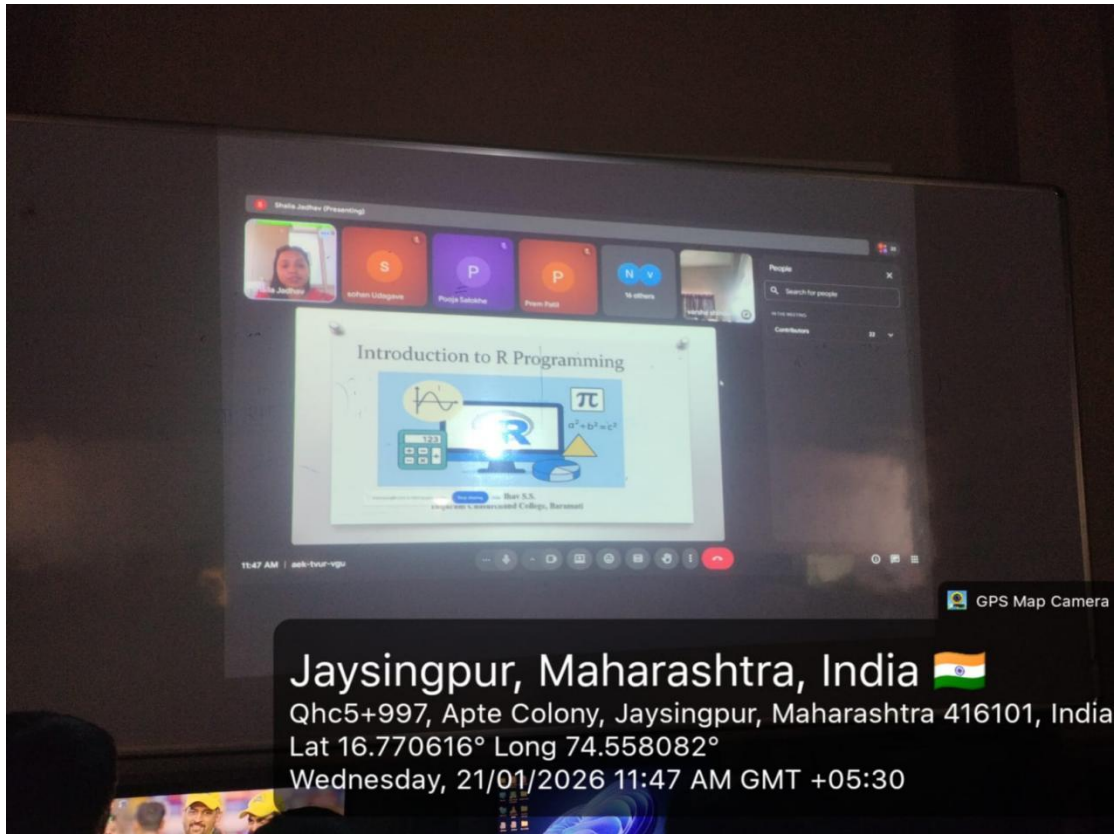
(# Photos, participant's list and other documents are attached)

A Hands-on Training Program on R Software was organized by the Department of Mathematics for undergraduate students to familiarize them with R programming and its applications in statistical analysis, data visualization, and research. The program was conducted by Dr. Shaila Shivaji Jadhav, Assistant Professor, Department of Mathematics, Tuljaram Chaturchand College, Baramati, as the Resource Person.

The session commenced with a welcome and introduction of the resource person by Smt. V. H. Shinde, Head, Department of Mathematics. Dr. Jadhav delivered an interactive hands-on session covering basic R commands, data handling, statistical functions, and graphical representation of data, enabling students to work with real datasets.

The training significantly enhanced students' programming proficiency and analytical skills. The program concluded with a vote of thanks by Smt. V. H. Shinde, and was overall a successful and enriching learning experience for the participants.





Anekant Education Society's
Jaysingpur College, Jaysingpur
Hands on R software
Attendance

Date: 21/01/2026

Sr. No.	Name of student	Class	Sign
1	Vijal Sachin Shahapure	B.Sc - I	V.S. Shahapure
2	Vivek Vishwas Kamble	B.Sc - I	V.V.K.
3	Shital Rahul Karadaye	B.Sc - I	S.R.K.
4	Ganpatl Shankar Patil	B.Sc - I	G.P.
5	Sorvesh Ramesh Kabarde	B.Sc - I	S.R.K.
6	Sahil Rahul Kamble	B.Sc - I	S.R. Kamble
7	Pranav Parashuram Kamble	B.Sc - I	P.P. Kamble
8	Sohan Sukumar Velagare	B.Sc - I	S.S.
9	Prem Bipin Patil	B.Sc - I	P.B.P.
10	Aditya D. Kamble	B.Sc - II	A.D.K.
11	Ayurvardhan. Kulkarni	B.Sc - II	A.V.K.
12	Vinay S. Kamble	B.Sc - II	V.S.K.
13	Pranita A. Koli	B.Sc - I	P.A.Koli
14	Sakshi. C. Mane	B.Sc - II	S.C.M.
15	Pooja S. Salokhe	B.Sc - II	P.S.S.
16	Samruddhi. M. Nanaware	B.Sc - II	S.M.N.
17	Shruti. S. Kamble	B.Sc - II	S.S.K.
18	Purva S. Aurwade	B.Sc - III	P.S. Aurwade
19	Manisha B. Choudhari	B.Sc - III	M.B.C.
20	Namrata R. Chudappa	B.Sc I	N.R.C.
21	Vishakha B. Kamble	B.Sc I	V.B.K.

Patil

Mr. Pritam R. Patil,
Departmental Coordinator,
Department of Mathematics.

PROJECT INVESTIGATOR

Sabale

Dr. Sandip R. Sabale
Coordinator
DBT-STAR College Scheme
Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION

Manjare

Dr. Surat A. Manjare
PRINCIPAL
Jaysingpur College, Jaysingpur

Report On
One Day Hands on Training on Geogebra

**JAYSINGPUR
COLLEGE,
JAYSINGPUR.**



Organized by
**DEPARTMENT
OF
MATHEMATICS
AND
DBT STAR
COLLEGE
SCHEMES**

Date: 23/01/2026



Anekant Education Society's
Jaysingpur College, Jaysingpur



**Department of Mathematics &
Science Association**
organizes

One Day Hands on Training on Geogebra

under
DBT-Star College Scheme

Date: 23/01/2026 | Time: 11:00 am | Venue: Mathematics Laboratory



Resource Person

Dr. Girish D. Shelake

**Associate Professor,
Head, Mathematics Department,
Vice Principal, Willingdon College,
Sangli.**

Organizing Committee

Dr. S. R. Sabale
Coordinator
DBT Star College

Prof. Dr. S.S. Mahajan
Head
Science Stream

Dr. S. A. Manjare
Principal

Mr. .P. R. Patil
Convenor ,
Dept. of Mathematics

Mrs. V. H. Shinde
Head
Dept. of Mathematics

Dr. P. P. Chikode
Coordinator
Dept. of Physics

Dr. R. S. Dhabbe
Coordinator

Dr. S. R. Patil
Coordinator

Dr. S. D. Umdale
Coordinator



Anekant Education Society's
Jaysingpur College, Jaysingpur

Report on One Day Hands on Training on Geogebra

Year:	2026
Name of the Activity:	One Day Hands on Training on Geogebra
Date:	23rd January 2026
Venue:	-
Co-ordinator/Convenor:	Mr. P. R. Patil.
Organised for:	Students, Teaching Staff
No. of Participants	17 (15 Students , 2 Teachers)
Nature:	Academic
Chief Guest/s or Resource Person/s	Dr. Girish D. Shelake, Associate Professor and Head, Department of Mathematics, Sangli.

REPORT ON ONE DAY HANDS-ON TRAINING ON GEOGEBRA

TITLE OF THE PROGRAMME

One Day Hands-on Training on GeoGebra

ORGANIZING BODY

Department of Mathematics & Science Association, Jaysingpur College, Jaysingpur, under the DBT-STAR College Scheme.

DATE, TIME AND VENUE

- **Date:** 23 January 2026
- **Time:** 11:00 a.m. onwards
- **Venue:** Mathematics Laboratory, Jaysingpur College, Jaysingpur

RESOURCE PERSON

Dr. Girish D. Shelake

Associate Professor and Head, Department of Mathematics,
Vice Principal, Willingdon College, Sangli.

OBJECTIVE OF THE PROGRAMME

The objective of the training programme was to introduce and familiarize faculty members and students with **GeoGebra**, a dynamic mathematics software, and to demonstrate its effective use in teaching, learning, and visualization of mathematical concepts. The programme aimed to enhance conceptual understanding through interactive and technology-based approaches.

INAUGURAL SESSION

The programme commenced with a brief inaugural session. The organizers welcomed the resource person and participants. The importance of integrating digital tools like GeoGebra in mathematics education was highlighted, especially in the context of improving visualization, student engagement, and conceptual clarity.

TECHNICAL SESSIONS

Dr. Girish D. Shelake conducted an intensive hands-on session on GeoGebra. The training covered:

- Introduction to the GeoGebra interface and basic tools
- Construction of geometric figures and transformations
- Visualization of algebraic and graphical concepts
- Use of GeoGebra for teaching calculus and coordinate geometry
- Classroom applications and pedagogical advantages of GeoGebra

Participants actively engaged in practical activities using computers, which enabled them to learn by doing. The resource person explained concepts in a clear and systematic manner, addressing queries and providing demonstrations relevant to classroom teaching.

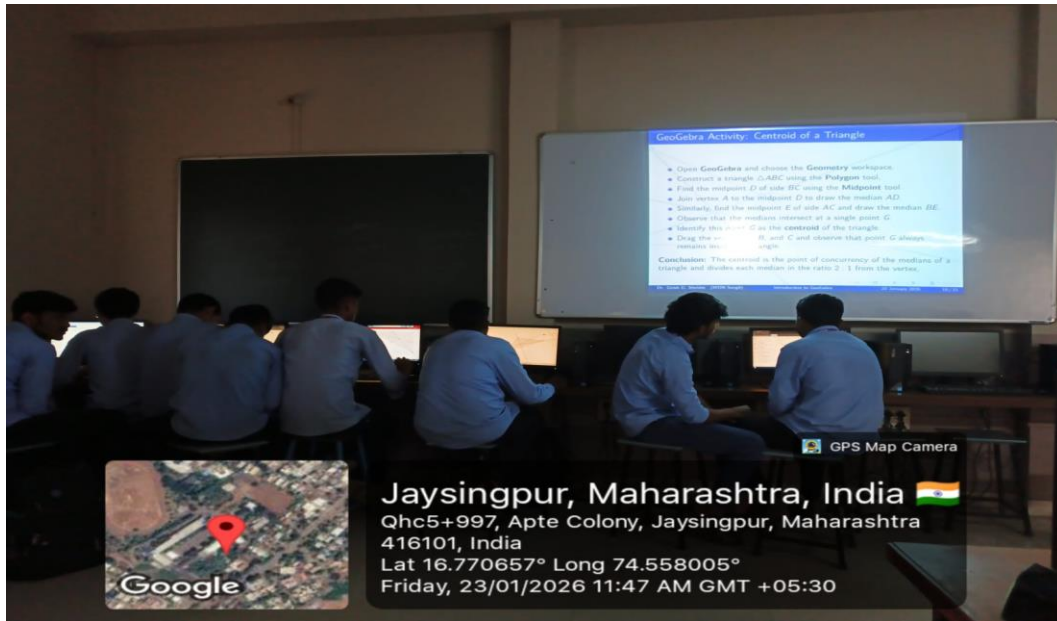
PARTICIPATION

The programme witnessed active participation from faculty members and students of the Mathematics and Science streams. The hands-on nature of the training encouraged interaction, discussion, and collaborative learning.

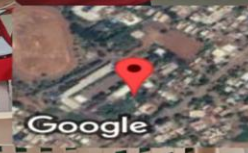
CONCLUSION

The One Day Hands-on Training on GeoGebra was successfully conducted and achieved its objectives. The programme enriched the participants' knowledge of modern mathematical tools and promoted the use of technology in higher education. The organizers expressed gratitude to the resource person and all participants for making the programme a grand success.

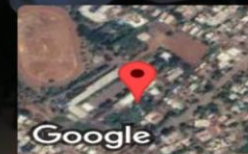




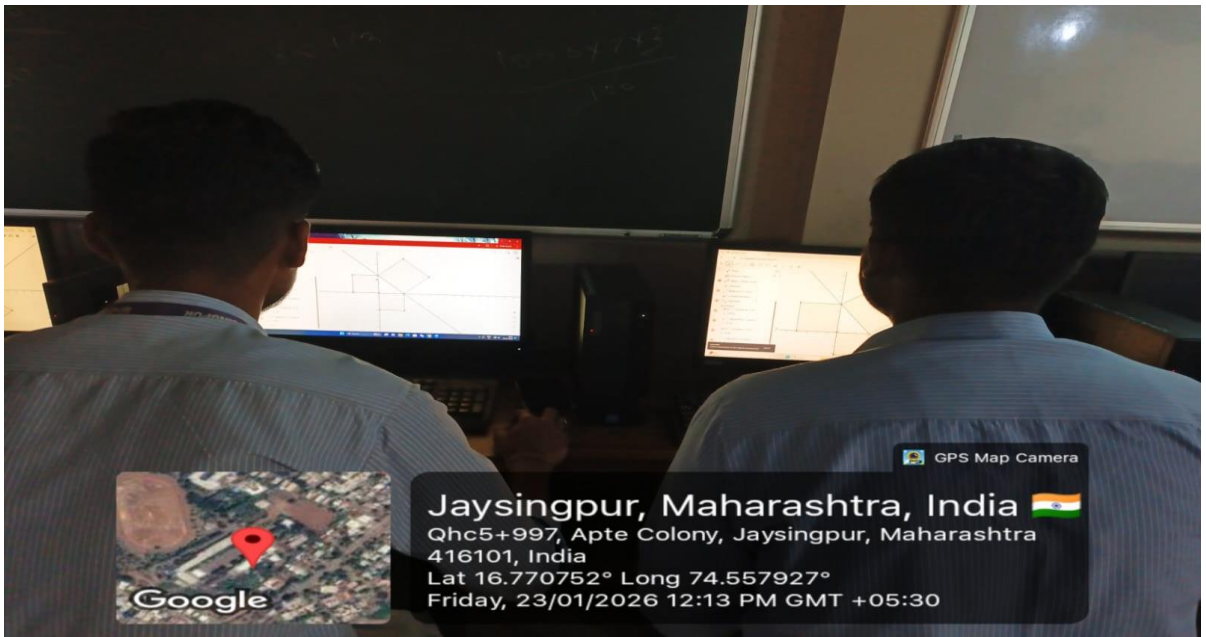
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 416101, India
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Patil
Mr. Pritam R. Patil,
Departmental Coordinator,
Department of Mathematics.

PROJECT INVESTIGATOR
Sabale
Dr. Sandip R. Sabale
Coordinator
DBT-STAR College Scheme
Jaysingpur College, Jaysingpur

HEAD OF THE INSTITUTION
Manjare
Dr. Surat A. Manjare
PRINCIPAL
Jaysingpur College, Jaysingpur