



XAVIER INSTITUTE OF ENGINEERING

Mahim Causeway, Mahim, Mumbai – 40016 * Email id : allyngirls@xavier.ac.in

Riya Kamble: +91 8355852392 / 202103028.riyakpp@student.xavier.ac.in

Bhanavi Pandey: +91 93264 12652 / 202204042.bhanavipkm@student.xavier.ac.in



THE ALLYN FUND

LEARN SOLIDITY: BLOCKCHAIN ESSENTIALS

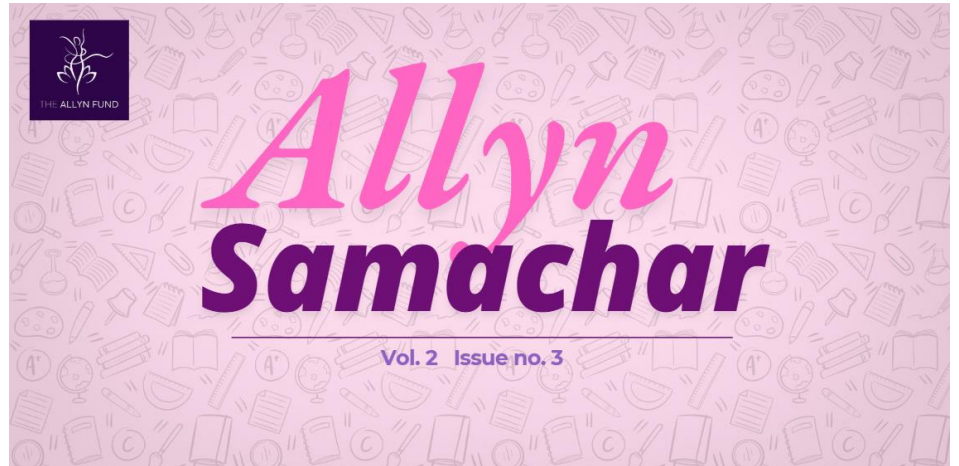
Time, Date & Place:

1st Feb 2025 to 29th March
2025

9:00 AM to 12:00 PM

Offline Platform: Blockchain
Lab.

No of participants: 24



February is a time to celebrate progress, embrace creativity, and continue growing with purpose. As Maya Angelou wisely said, "Nothing will work unless you do." This month reminds us that success is built through effort, passion, and resilience. It's a moment to acknowledge how far we've come while setting our sights on what's ahead.

Creativity flourishes when we dare to express ourselves boldly. As Frida Kahlo once said, *"I am my own muse, the subject I know best."* February encourages us to explore our talents, push our boundaries, and let inspiration guide us. Growth isn't just about reaching new heights—it's about embracing every step of the journey. This month, let's celebrate our achievements, nurture our creativity, and embrace the continuous journey of becoming. February is more than just another month—it's a testament to the power within us to create, evolve, and thrive.

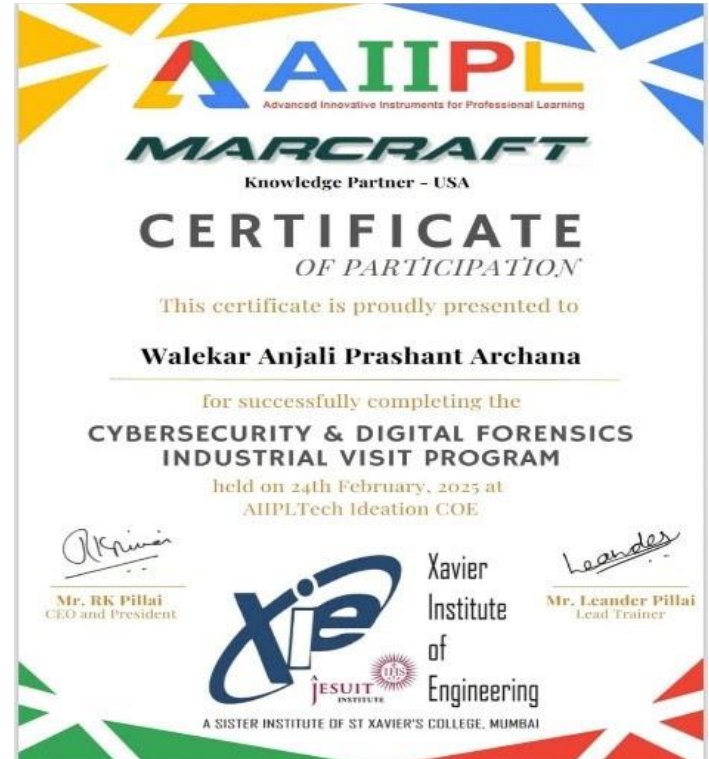
Shravni Bhandodkar (SE-Comps)

Shravni's month was defined by academic rewards and skill enhancement. She excelled in her IAT exams and completed SQL certifications from Simplilearn and HackerRank. Her mini-project presentation at the college exhibition showcased her hard work and creativity. Additionally, she contributed to NBA-related departmental work, emphasizing her willingness to go beyond academic obligations.



Anjali Walekar (SE CSE)

Anjali's February was filled with joy and learning. From celebrating her birthday on the 20th to securing a perfect 10-pointer in Semester 3, her achievements were many. She pursued cybersecurity courses, attended an industrial visit, and worked on training AI models. Her endeavors highlighted her commitment to both technical excellence and family bonds.



Anushree Verma (SE CSE)

Anushree's February was a testament to balance, achievement, and personal growth. She celebrated securing a stellar SGPA of 9.74/10 in Semester 3. Anushree gained insights into cybersecurity and digital forensics during an industrial visit on 24th February. Despite a packed schedule, her dedication and focus ensured consistent success in academics and enriched her industry knowledge. She also honed her problem-solving skills through hands-on projects, further strengthening her technical expertise. With each milestone, Anushree continues to set high standards for herself.

Allison Maegan Suvarna (SE CSE)

Allison tackled MySQL and is gearing up for her NPTEL exam in Database Management Systems. She also brought her agricultural prediction model to life, focusing on crop yield prediction and farming optimization. Beyond academics, she anchored the Awareness & Promotion of Sustainable Menstruation

event on 25th February, hosted by the WDC and NSS Cell. As part of WDC, Allison organized financial literacy seminars, competitions, and interviews during Women's Day celebrations, promoting empowerment and awareness.

Prarambhi Kharose (TE CSE)

Prarambhi began work on a blockchain project while managing committee responsibilities. Her academic performance was outstanding, securing a CGPA of 10 in Semester 5 and emerging as the class ranker. She attended her convocation, adding another feather to her cap, and was awarded certificates for her accomplishments.



Kanchan Kumari (SE IT)

Kanchan embraced her role as a cybersecurity and penetration testing intern during February. She made a significant impact by educating around 30 people about financial scams and online safety during her local train journeys. Her practical approach to solving real-world issues stands as a beacon of innovation and dedication.



Riya Kamble (BE IT)

Riya's February was marked by innovation and exploration. She published a technical paper on AI-driven dance and music composition and appeared for the IAT1 examination and GATE exam in Data Science and Artificial Intelligence. Additionally, her completion of a Data Analyst with Python course

showcased her commitment to professional growth and technical expertise.



International Journal of
Innovative Research in Technology
An International Open Access Journal Peer-reviewed, Refereed Journal
www.ijirt.org | editor@ijirt.org An International Scholarly Indexed Journal

Certificate of Publication

The Board of International Journal of Innovative Research in Technology
(ISSN 2349-6002) is hereby awarding this certificate to

RIYA KAMBLE

In recognition of the publication of the paper entitled

AI-DRIVEN DANCE GENERATION AND MUSIC COMPOSITION SYSTEM

Published in IJIRT (www.ijirt.org) ISSN UGC Approved (Journal No: 47859) & 7.37 Impact Factor

Published in Volume 11 Issue 9, February 2025

Registration ID: 173217 Research paper web link: <https://www.ijirt.org/article?mainid=173217>

Jan Raj
EDITOR

Jan Raj
EDITOR IN CHIEF



Learn Solidity: Blockchain Essentials course

Allyn Girls, in collaboration with Samah Skilling, is currently hosting the "Learn Solidity: Blockchain Essentials" course, a comprehensive hands-on training program designed to equip participants with fundamental and advanced blockchain knowledge. The course, which began on February 1st, 2025, is an ongoing initiative aimed at bridging the gap between theory and real-world blockchain applications.

The workshop was inaugurated by Fr. Dr. John Rose S.J., Director, who delivered a motivational address to encourage participants to embrace emerging technologies like blockchain. He emphasized the importance of women in technology and how gaining expertise in Solidity and blockchain development can open new doors of opportunity. His inspiring words set the perfect tone for the workshop, igniting enthusiasm among the attendees.

Day 1: Introduction to Blockchain and Solidity with Mr. Suhas Lawand

The first session of the Learn Solidity: Blockchain Essentials course, held on February 1st, was an insightful and engaging start to the program. Mr. Suhas Lawand led the session, beginning with a detailed introduction to blockchain technology, covering its history, significance, and real-world applications. Participants gained a solid understanding of the

decentralized structure of blockchain, consensus mechanisms, and cryptographic security.

After establishing a strong theoretical foundation, the session transitioned into Solidity programming, the core language for developing smart contracts on Ethereum. Mr. Lawand provided a step-by-step guide on writing basic Solidity programs, explaining key concepts such as variables, functions, data types, and contract structures. Participants then engaged in a hands-on coding session, where they wrote and executed their first smart contracts in a real-world development environment.

The session concluded with an interactive quiz, allowing participants to assess their understanding and clarify any doubts. A refreshing snack break was provided, offering a chance for participants to interact, discuss insights, and build connections with fellow learners.



Day 2: Smart Contracts, Cryptocurrencies & Blockchain Security with Mr. Nitin Mishra

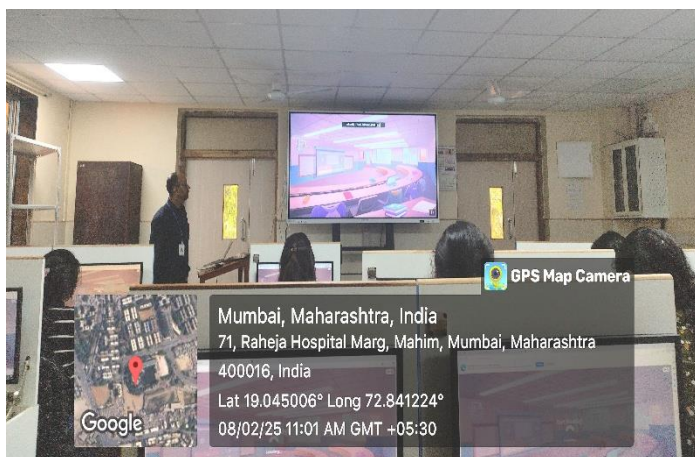
The second session, held on February 8th, was led by Mr. Nitin Mishra, who provided a deep dive into smart contracts, cryptocurrencies, and blockchain security. The session began with an in-depth explanation of hash values and their role in blockchain—highlighting how hashing ensures data integrity and security in digital transactions.

Mr. Mishra then expanded on smart contracts, demonstrating how they automate transactions without intermediaries, ensuring transparency and efficiency. The session further explored Bitcoin and other cryptocurrencies, explaining how these digital assets function on blockchain networks. Special attention was given to NFTs (Non-Fungible Tokens), their significance, and their rising impact in industries like art, gaming, and finance.

A critical discussion centered around the 51% attack, a potential threat where malicious entities gain control of a blockchain network, leading to possible security breaches. Participants engaged in a thought-provoking Q&A session, discussing real-world cases of blockchain security vulnerabilities and preventive measures.

To reinforce learning, the session concluded with a quiz round, testing participants' comprehension of the covered topics. A well-deserved snack break followed, where attendees had the opportunity to network, share perspectives, and deepen their understanding through peer discussions.





Day 3: Transaction verification, Merkle tree Ledgers, Consensus, and Cryptographic Elements and hashing with Mrs. Lalita Moharkar

The third session of the Solidity Blockchain , held on February 22nd, focused on deepening participants' understanding of key backend concepts that

enable the secure and decentralized functioning of blockchain systems. The session began with an in-depth discussion on transaction verification, a fundamental process that ensures the integrity and authenticity of every transaction added to the blockchain. Participants learned how transactions are broadcast to the network and validated by nodes using digital signatures and cryptographic proofs. This part of the session emphasized the role of validators (or miners) in checking the legitimacy of a transaction before it is included in a block.

Following this, the session moved on to the concept of the Merkle Tree, a data structure used extensively in blockchain to enhance security and efficiency. Learners explored how the Merkle Tree helps in summarizing and verifying the integrity of large data sets. By hashing pairs of nodes recursively until a

single root hash is obtained, the Merkle Tree enables efficient and secure verification of transactions without the need to check the entire block. This concept was tied into how blockchains can maintain integrity while optimizing performance.

The discussion then progressed to Ledgers, where students examined the role of distributed ledgers in maintaining a consistent and tamper-proof record of all transactions across a decentralized network. It was explained how every participant in the blockchain network holds a copy of the ledger, making it immutable and transparent. Various types of ledgers, such as public, private, and permissioned, were also introduced.

Next, the session delved into Consensus Mechanisms, which are protocols used by blockchain networks to achieve agreement on a single version of the truth, despite the decentralized nature of the system. Techniques such as Proof of Work (PoW), Proof of Stake (PoS), and their variations were discussed. Participants gained insight into how consensus ensures that all nodes in the network validate and agree on the same state of the ledger, preventing double spending and fraud.

Finally, the session concluded with an exploration of Cryptographic Elements and Hashing. This included an overview of fundamental cryptographic principles such as asymmetric encryption, digital signatures, and public-private key pairs. The importance of hashing algorithms like SHA-256 in ensuring data integrity and security was highlighted. Participants understood how hashes are used to link blocks together, making the blockchain resistant to tampering.

This session laid a strong theoretical foundation for understanding the security and verification mechanisms that underpin blockchain technology, all of which are crucial for writing reliable smart contracts and developing decentralized applications in Solidity.

Day 4: Advanced Cryptography and Hashing Techniques with Mrs. Leena Patil

The fourth session, held on February 29th, focused on the advanced cryptographic principles that secure blockchain networks. Mrs. Leena Patil, an expert in cryptography, led an informative session that explored Merkle Trees, Message Digests, AES and DES Algorithms, and Modular Arithmetic.

Mrs. Patil started by explaining the Merkle Tree structure, which enables efficient and secure verification of large data sets in blockchain. She then broke down message digests, emphasizing their role in ensuring data authenticity and integrity. Participants learned about AES (Advanced Encryption Standard) and DES (Data Encryption Standard) algorithms, understanding their importance in securing digital transactions.

The session also included a detailed analysis of hashing techniques, where attendees explored how one-way cryptographic hashing functions play a crucial role in maintaining the immutability and security of blockchain transactions. Real-world examples and case studies were used to illustrate the application of these cryptographic methods in modern blockchain networks.

The session wrapped up with a final snack break, providing participants with an opportunity to reflect on their learnings, discuss applications of cryptography in blockchain, and network with peers and industry professionals.



With four sessions successfully completed, the Learn Solidity: Blockchain Essentials course continues to equip participants with theoretical knowledge and practical skills to excel in the field of blockchain development. The upcoming sessions will further build on these concepts, guiding learners through more advanced Solidity programming, real-world blockchain applications, and security best practices.

Stay tuned as we continue to explore the future of blockchain technology and empower aspiring developers to become leaders in this revolutionary field!

The February Newsletter captures the extraordinary accomplishments of these brilliant individuals. Their dedication, curiosity, and resilience inspire all of us to strive for excellence. Here's to even greater achievements in the months ahead!

Day 5: Quiz and Certificate Distribution

On the final day of our Solidity Blockchain course, held on April 2, 2025, the session took place from 3:30 PM to 4:30 PM. The day was filled with enthusiasm and celebration, marking the successful completion of the course. A quiz competition was organized to test the participants' understanding of blockchain concepts, and Prarambhi emerged as the winner, securing the 1st prize. Alongside the competition, t-shirts and other prizes were distributed, adding to the excitement of the event. The session concluded with a certificate distribution ceremony, where all the Allyn girls were awarded certificates in recognition of their participation and dedication throughout the course. We wrapped up the memorable day by taking group photos, capturing the spirit of achievement and camaraderie.



To conclude, the course provided a strong foundation in blockchain technology with a focus on Solidity the primary language used for writing smart contracts on the Ethereum platform. Participants learned how to create decentralized applications (dApps), understand blockchain architecture, and implement secure, transparent, and tamper-proof smart contracts. This practical exposure has equipped attendees with the

essential skills required to explore and contribute to the evolving blockchain ecosystem



As we come to the end of this exciting journey through the Blockchain Solidity course, We want to take a moment to reflect on what we've accomplished together. Over the past few weeks, we've explored one of the most transformative technologies of our time — blockchain — and learned how to build secure, decentralized applications using Solidity.

This course has not just been about code and contracts; it's been about understanding a new way of thinking. From smart contracts to deploying dApps, from learning the basics of Ethereum to diving deep into real-world applications, each session has equipped us with skills that are truly future-proof.

The final session, filled with the quiz competition, prize distribution, and certificates, was a perfect celebration of the hard work and dedication shown by everyone. A big congratulations to Prarambhi for winning the first prize — and to all participants who gave it their best. The enthusiasm, curiosity, and teamwork I've seen here have been inspiring.

We also like to express gratitude to our instructors and mentors who guided us throughout the course with patience and expertise. Your support helped us grasp complex concepts and gain confidence in applying them.

And finally, seeing all the Allyn girls receive their certificates today was a proud and heartwarming

moment. The group photo we took isn't just a memory — it's a snapshot of growth, learning, and shared success.

As we move forward, let's carry this knowledge with us, continue exploring, and maybe even start building something of our own. Blockchain isn't just the future — it's the present, and now we are a part of it.

Thank you, and congratulations to all!"

Prof. Smita Pawar

Allyn Girls Convenor



Prof. Smita Pawar
Allyn Girls Convenor

their satisfaction with the course content and its design. Following this, an online Quiz and Feedback session was conducted, allowing participants to evaluate their learning outcomes and provide constructive feedback on the course content and delivery. Certificates of completion were then awarded, recognizing participants' dedication to advancing their knowledge and skills in AI-enhanced teaching, efficiency.

