



DRONTECHCONNECT

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# DRON TECH CONNECT

***SIT EDITION***

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DRONTECHCONNECT

# EDITORIAL MESSAGE



**Dr. Megha Goel**

**Dear Readers,**

**Welcome to the latest edition of DronTechConnect!**

**Our Computer Science and Information Technology (CSIT) Department stands as an exemplary hub of innovation and learning. With cutting-edge curricula and state-of-the-art facilities, we offer an unparalleled academic experience. Our esteemed faculty comprises industry experts and dedicated researchers, fostering an environment that encourages critical thinking, creativity, and problem-solving skills. Through robust industry connections and internships, students gain practical exposure and hands-on experience in diverse technological domains. Our CSIT department prides itself on producing graduates equipped with the expertise and adaptability to thrive in the ever-evolving tech landscape, making a significant impact in the world of technology.**

**Throughout these pages, you'll discover insightful articles, thought-provoking research, and inspiring stories from our students. From groundbreaking projects to perspectives on emerging technologies, this magazine showcases the diverse talents and accomplishments that make the department truly exceptional.**

**We hope this edition sparks your curiosity, ignites your passion for technology, and provides a glimpse into the exciting advancements happening within department. Thank you to all the contributors for sharing your expertise and experiences. We invite you to explore, learn, and be inspired by the incredible work showcased in this edition of our CSIT department magazine.**

**Happy Reading!**

**Warm Regards**

**Dr. Megha Goel**

**Editor-in-Chief, DronTechConnect**



# EDITORIAL BOARD



**Dr. Megha Goel**

## Editor in Chief

It gives me immense pleasure to present our college magazine, a culmination of creativity, innovation, and academic excellence. Within these pages, you'll witness the remarkable dedication and hard work of our Computer Science and Information Technology (CSIT) department. In this issue, I encourage you to explore the diverse perspectives and accomplishments featured here.



**Rohit Gupta**  
(21700; CSIT)

**Editor- Design**



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**Co- Editor**



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(21708; CSIT)

**Editor- Text**



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and Mission**

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# VISION

**Preparing technologists with in-depth insights into information technology, and embedding ethics via focused technical training.**

**Empower technologists to excel in information technology through rigorous training and hands-on experience.**

**Foster a culture of integrity and responsibility by instilling ethical principles in every aspect of technical education.**

**Encourage technologists with new ideas and good leadership in the tech world, training to possess strong values.**

# MISSION



# PROGRAM EDUCATIONAL OBJECTIVES (PEO)

- **Demonstrate technical competence with analytical and critical thinking to understand and meet the requirements of Industry, academia and research.**
- **Exhibit leadership, team skills and entrepreneurship skills to provide solutions to real world problems.**
- **Work in multi-disciplinary industries with social and environmental responsibility, work ethics and adaptability to address engineering and social problems.**

# PSOS (PROGRAM SPECIFIC OUTCOME)

- **Have proficiency in programming skills to design, develop and apply appropriate techniques, for solving engineering problems.**
- **Have knowledge to build, automate and manage business solutions using advanced technologies.**
- **Have pleasure towards research in applied computer technologies.**

# PROGRAMME OUTCOME (PO)

## Engineering Graduates will be able to:

**PO1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**Po4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**Po5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**Po6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**Po7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**Po8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities & norms of the engineering practice.

**Po9. Individual & team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**Po10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give & receive clear instructions.

**Po11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

# Navigating the Horizon: Internet Telephony Policy in India

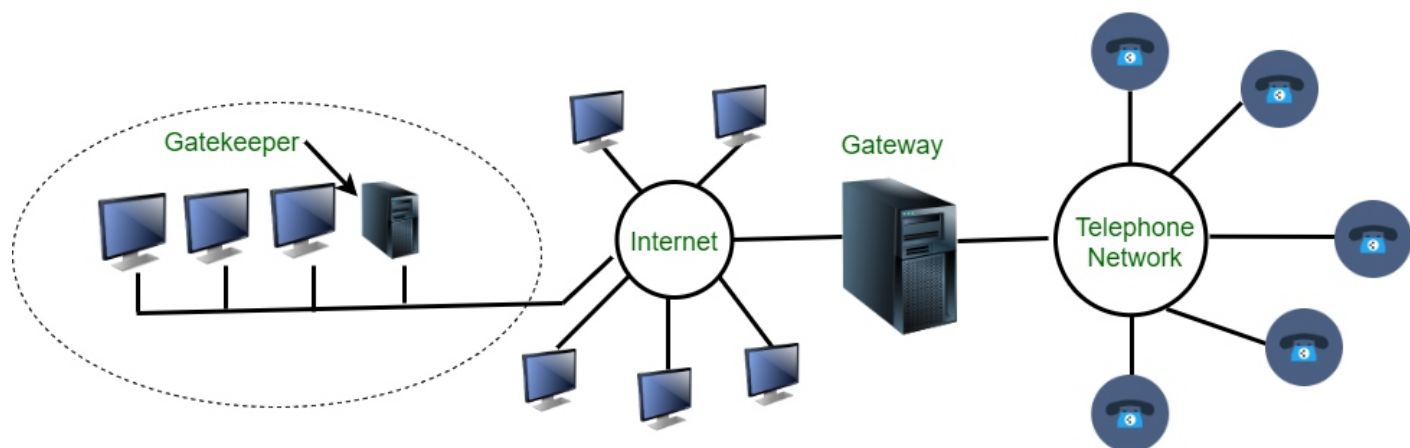


**Akshey Kakkar**  
(21664; CSIT)

In the digital age, the landscape of communication is undergoing a significant transformation, and at the forefront of this evolution is Internet Telephony, a technology that enables voice calls over the internet. In India, the regulatory framework governing Internet Telephony has been a subject of strategic development to align with technological advancements and provide a conducive environment for innovation and growth.

The Internet Telephony policy in India has witnessed progressive reforms to foster competition, affordability, and accessibility. The Telecom Regulatory Authority of India (TRAI) has played a pivotal role in shaping these policies, ensuring that they keep pace with the dynamic nature of communication technologies.

One of the key developments in India's Internet Telephony policy is the integration of Over-the-Top (OTT) services, allowing users to make voice calls using applications such as WhatsApp, Skype, and Viber. This move has expanded the choices available to consumers and intensified competition in the communication services sector.



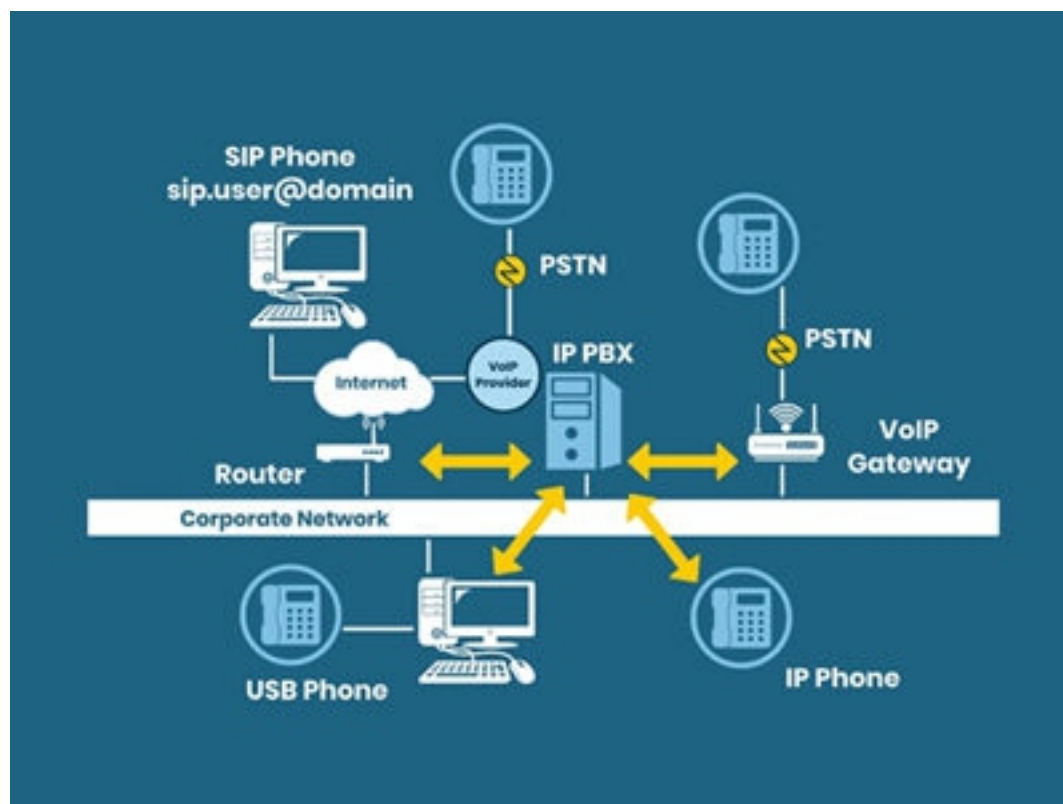
The policy has also sought to address concerns related to security and lawful interception, outlining guidelines for service providers to comply with security requirements. This ensures that the deployment of Internet Telephony aligns with national security interests and regulatory norms.



# Navigating the Horizon: Internet Telephony Policy in India

Moreover, the policy encourages innovation by fostering an environment that promotes the adoption of emerging technologies like Voice over Internet Protocol (VoIP). This has resulted in increased investment in the development of robust telecommunications infrastructure to support the growing demand for Internet Telephony services.

As India continues to embrace the digital future, the Internet Telephony policy serves as a crucial framework, shaping the nation's communication landscape and contributing to the vision of a connected and technologically advanced society. The ongoing dialogue between regulators, industry stakeholders, and consumers remains essential for fine-tuning policies that balance innovation, accessibility, and security in the realm of Internet Telephony.



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**Akshey Kakkar**  
(21664; CSIT)

# Ensuring Digital Excellence: The Critical Role of Software Testing



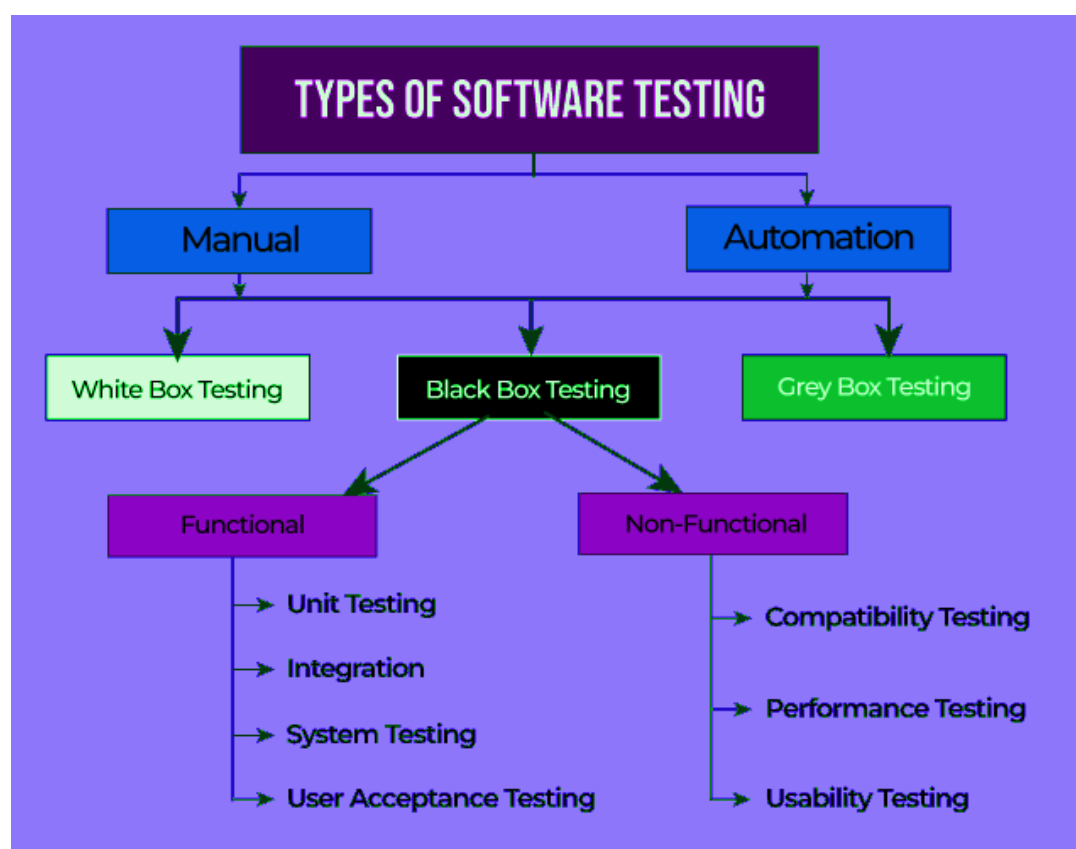
**Rohit Yadav**

(21701; CSIT)

In the dynamic realm of software development, the significance of software testing cannot be overstated. It serves as the gatekeeper, ensuring that applications and systems meet the highest standards of quality, functionality, and reliability before reaching end-users. Software testing is a meticulous process that involves evaluating and validating software to identify defects, ensuring a seamless user experience and safeguarding against potential issues.

One of the primary goals of software testing is to detect and rectify bugs or errors that might compromise the performance of an application. Through a series of systematic tests, including functional, performance, security, and usability testing, software testers meticulously scrutinize every facet of the software to guarantee its robustness and resilience.

Quality assurance is a central tenet of software testing, encompassing a proactive approach to prevent defects rather than merely identifying and fixing them after implementation. Rigorous testing practices help in building reliable software systems, reducing the likelihood of costly errors, and bolstering the reputation of software developers and organizations.

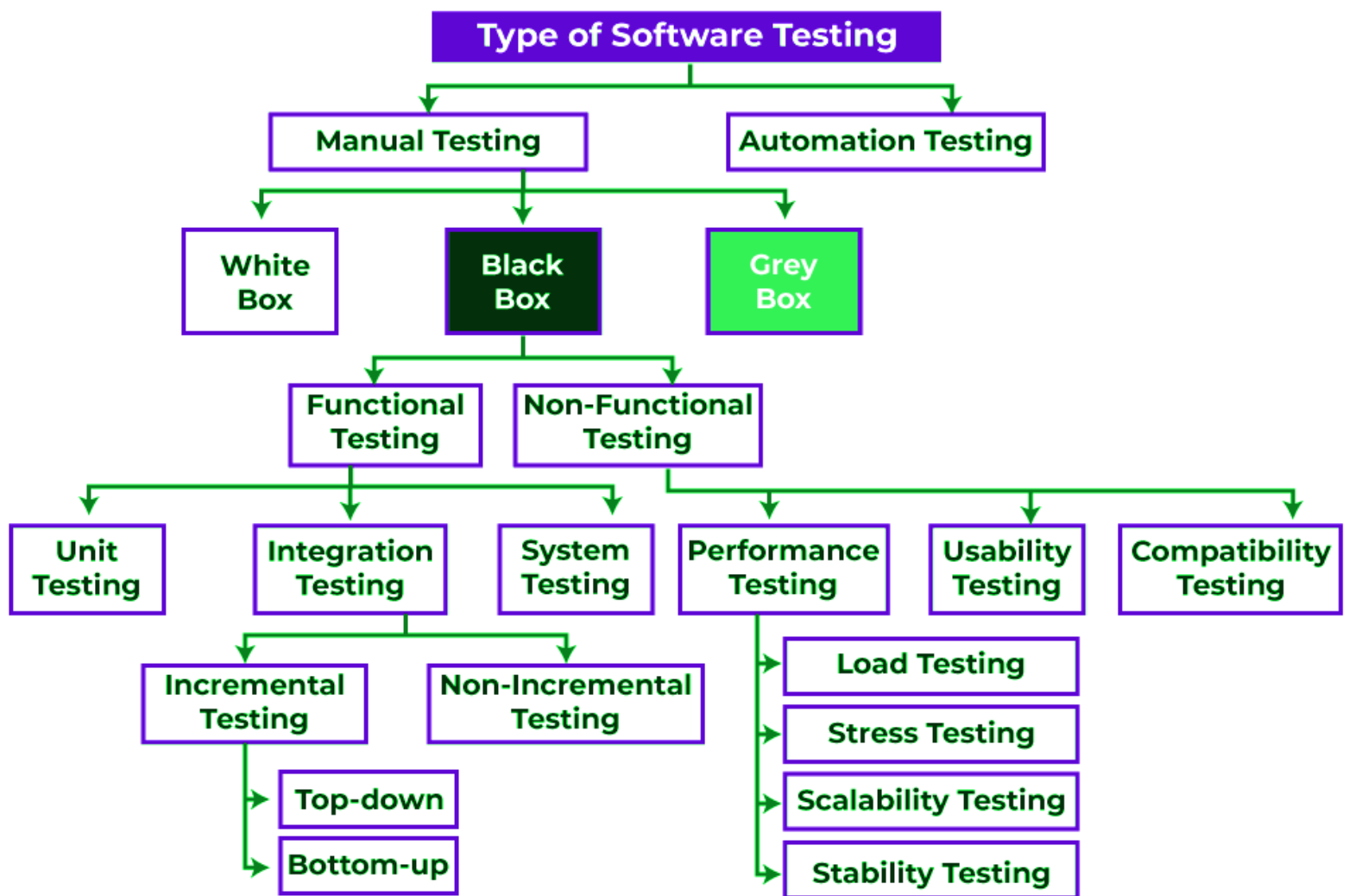




# Ensuring Digital Excellence: The Critical Role of Software Testing

The advent of agile methodologies and continuous integration has further emphasized the importance of software testing in the software development life cycle. Automated testing tools play a pivotal role in executing repetitive and time-consuming test cases, allowing for quicker feedback and faster development cycles.

As technology evolves, the scope and complexity of software applications continue to expand, making effective testing more critical than ever. The commitment to delivering high-quality software necessitates a comprehensive and well-structured testing strategy. Ultimately, software testing is the linchpin in achieving digital excellence, ensuring that software applications meet or exceed the expectations of users and stakeholders alike.



# Cryptocurrency: Navigating the Frontier of Digital Finance



**Vridhi Jain**

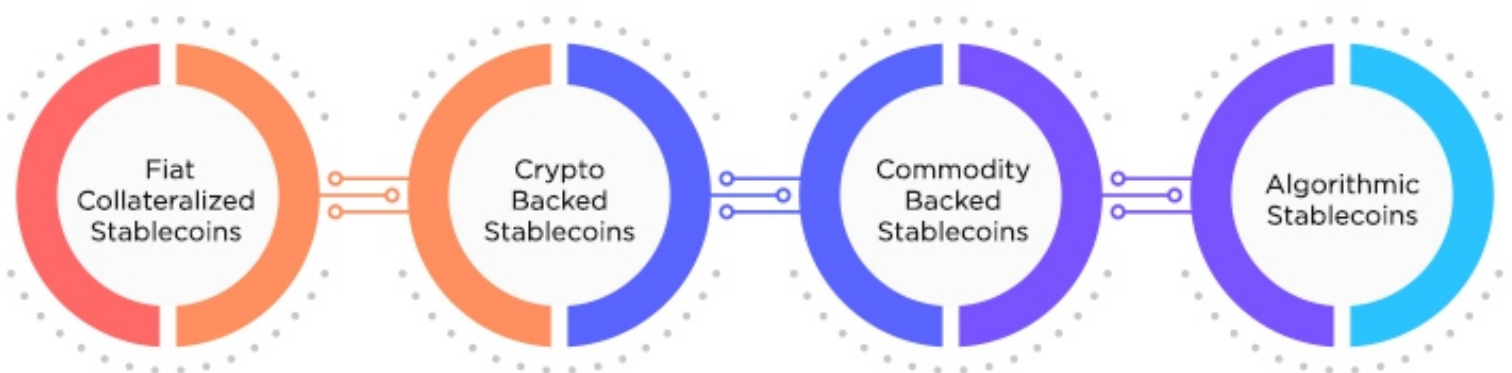
(22687; CSIT)

Cryptocurrency, a disruptive force in the realm of finance, has redefined the way we perceive and engage with traditional currencies. Born out of the desire for decentralized, secure, and transparent financial systems, cryptocurrencies have gained prominence as a revolutionary form of digital currency.

At the heart of cryptocurrencies is blockchain technology, a decentralized ledger that records and verifies transactions across a network of computers. This ensures transparency and immutability, mitigating the risks associated with centralized financial systems. Bitcoin, the pioneer cryptocurrency, introduced the concept of a decentralized digital currency, paving the way for a multitude of alternative cryptocurrencies, commonly known as altcoins.

The key innovation of cryptocurrencies lies in their ability to operate without the need for intermediaries, such as banks or government entities. This peer-to-peer nature allows for faster and more cost-effective cross-border transactions. Cryptocurrencies also empower individuals by providing them with direct control over their funds, enhancing financial inclusivity and autonomy.

## Types of Stablecoins





# Smart Cards: The Intelligent Guardians of Modern Security

However, the volatility and regulatory uncertainties surrounding cryptocurrencies have sparked debates and discussions in financial circles. Supporters view them as a hedge against traditional financial systems, while skeptics express concerns about their stability and potential misuse for illicit activities.

The rise of decentralized finance (DeFi) platforms, built on blockchain and cryptocurrency technologies, further demonstrates the transformative potential of these digital assets. Smart contracts, automated protocols facilitating self-executing agreements, enable a wide range of financial services, including lending, borrowing, and trading, without the need for traditional intermediaries.

As the cryptocurrency landscape continues to evolve, it remains a dynamic and influential force, shaping the future of digital finance. With ongoing developments, debates, and innovations, the journey of cryptocurrencies is an unfolding narrative in the broader narrative of the digital revolution.

