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19SB603- SMART CONTRACTS

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Introduction to Smart Contracts

Definition: A smart contract is a **self-executing digital contract** stored on a blockchain.

Key Feature: Executes automatically when predefined conditions are met.

Invented by: Nick Szabo (1994) and popularized by Ethereum.





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- Agreement Defined Rules and conditions are written in code.
- **Deployment on Blockchain** Once deployed, it runs autonomously.
- Triggered by Events Executes when conditions are met.
- Immutable & Transparent Cannot be altered after deployment.

How does a Smart Contract Work?





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Benefits of Smart Contracts



Automation – Eliminates intermediaries, reducing costs.

- Security Uses cryptographic encryption, preventing tampering.
- **Transparency** All transactions are visible on the blockchain.
- Speed & Efficiency Processes transactions instantly.





Limitations & Future of Smart Contracts

🔥 Challenges:

- Code Vulnerabilities Bugs can lead to hacks (e.g., DAO hack).
- Legal Uncertainty Not yet recognized in all jurisdictions.
- **Scalability Issues** High demand can slow down networks.

🚀 Future:

- Integration with **AI & IoT** for advanced automation.
- Wider adoption in governments and enterprises.



