ETHER
AND
APPLICATIONS OF ETHEREUM BLOCKCHAINS BEYOND CRYPTOCURRENCIES

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- Ether and Ethereum
  - Ether over Bitcoin
  - Difference between Coins and Tokens
  - Ethereum Wallet and transactions
- Applications of Blockchains beyond Cryptocurrencies
  - Blockchains in Land Registry
- Blockchains used in building a Capital City
  - Brief History of Amaravati
  - Land Acquisition using Ethereum
What is Ethereum?

- An open source software based on blockchains.

- Enables developers to build and deploy decentralized applications.
Ether over Bitcoin

- Broader market.
- Small block time.
- Simple to build on an Ethereum block.
Tokens vs Coins

- Tokens are modified Coins.
- One Coin can be modified into many Tokens.
Smart Contracts

Compile and Deploy Solidity Contract

1. Smart Contract
2. Compiler (Solc)
3. EVM
Ethereum Wallet

Overview of Ethereum Desktop Application
Ethereum Wallet Transactions
Blockchains beyond Cryptocurrencies

- **Have the potential to securely handle large amounts of data efficiently.**
Blockchains in Land Registry

Allows instant transfer of property digitally, with trust being maintained between the parties.
Core principle:
Proof of Existence (PoE)

Best part is that neither parties require a blockchain wallet
This is how the govt. document looks like after being placed in a blockchain.
Case Study:
Capital Construction of Amaravati
Compensation Policy:

1 Acre of land = 1300 sq. yards

\[
\begin{align*}
&1000 \text{ sq.yards for residence} \\
&+ 300 \text{ sq.yards of Commercial Space}
\end{align*}
\]
● About 58 attributes (like Name, Aadhar Card number, boundaries of land with latitude and longitude coordinates etc.) are given as input to the hash function.

● As of July 2018, 40000 plots have been distributed to the farmers and some other plots to Govt. and Research Institutions.
Mana Amaravati (Our Amaravati) Mobile App

- Detailed information is provided to all the landowners through a mobile app, “MANA AMARAVATI”, where they can log in securely with their Aadhar number.
• The team from LSE has shown particular interest in the Land Pooling Scheme through which the Govt. Of AP State has acquired 34,000 acres of land without spending a single penny.
Possible Pitfalls

- Farmers aren’t completely believing the method to be tamper-proof especially at the stages before the data is moved to the blockchain as the assignments and verifications are done by the revenue officers on the ground.
  - Lack of digital literacy among farming community.

- Authorities could deliberately enter wrong information resulting in “Man in the Middle” attacks.
  - Chances of officials tweaking the data before being entered into the blockchain.
Thank you
Any Questions?