Introduction to Ethereum

- **Ethereum Blockchain** is an immutable database that stores a record of every transaction that has ever taken place;
- It's used to **transfer money** and to **run applications** that are named "Smart Contracts".
- **Any value** like money, ownership rights, real-estate ownership, shares, registries of debts or promises etc that **can be stored** in centralized ledger can also be stored in a decentralized manner on the Ethereum Blockchain;
- Ethereum is turing-complete;
- Ethereum Smart Contracts are:
  - Decentralized
  - Immutable
  - Unstoppable
  - Censorship-free, no fraud or third-party interference
  - No downtime

Ethereum Nodes

- Ethereum is a network of computers named **“Ethereum Nodes”**. Anyone can run an Ethereum Node on its laptop or desktop machine;
- Every Ethereum Node runs an Ethereum Client like for example the Ethereum Mist Client;
- Each node can contain a **full copy of the Ethereum Blockchain** or can run in a **“Light Mode”;**
- An Ethereum node runs a VM named EVM and runs applications (EVM bytecode) based on a global consensus mechanism. **This EVM has its microkernel, stack, memory and storage.**
- Every Ethereum Node runs every transaction and stores every piece of data;
- There are **many different Ethereum Networks**: Main Net, Test Nets (Rinkeby, Kovan), Private Ethereum Blockchains;