Implementation of a simple Đapp using the Ethereum blockchain platform as a case study

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ABSTRACT

Ethereum is distributed, blockchain-based computing platform that features full support for smart contracts. Compared to their Bitcoin equivalents, which are extremely limited and built on top of an extremely scripting language, Ethereum provides a full, distributed, consensus-based Turing-complete virtual machine, that can be used to create complex and elaborate distributed applications, or Đapps, using specifically designed programming languages, such as Solidity.

Smart Contracts are stateful entities, which possess methods that are composed of opcodes that are executed at the same time on every node connected to the blockchain, and whose execution is paid in **gas**, a subunit of the **ether** (Ξ) cryptocurrency, one of the most appreciated cryptocurrencies in existence. This new blockchain-based concept has taken the world of cryptocurrencies and blockchain by storm with its enormous potential, leading the basis for what is starting being called the "Web 3.0".

This work will require the student to:

- Thoroughly study and analyse how the Ethereum platform works;
- Study the Solidity smart contract language;
- Use this newly learned knowledge to design and develop a simple Đapp.