

Summer 2020

ECE8930 Introduction to Blockchain Technology Homework 2

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There are two options for HW2. You only need to do one of them.

1. For this assignment, you will write a short article (4~6 pages) proposing a Dapp that can be implemented using smart contracts. In your article, you should what is the traditional way of implementing this application and why smart contract is the better way of doing it. Your paper must include a diagram that illustrates the interaction between different smart contracts used in your application. You may refer to the GavCoin example given in the slides. Please use the IEEE conference paper template for your article.

- We introduced trie (the modified Merkle Patricia tree) – the major data structure used by Ethereum blockchain for storing data. For this assignment, you will write a short article (3~5 pages) explaining the detailed data structure of Ethereum blockchain based on the figure below. There are many concepts used in Ethereum blockchain that we did not cover in class (e.g., Ommer). So you may need to do some online research. Please make your introduction is clear and as detailed as possible. The link of the original high resolution diagram is given below the figure.

(Note: There are a number of articles introducing the Ethereum blockchain. You may refer to those articles or posts but DO NOT copy & paste. Because many of those online writings are high-level, confusing and sometime inaccurate.)

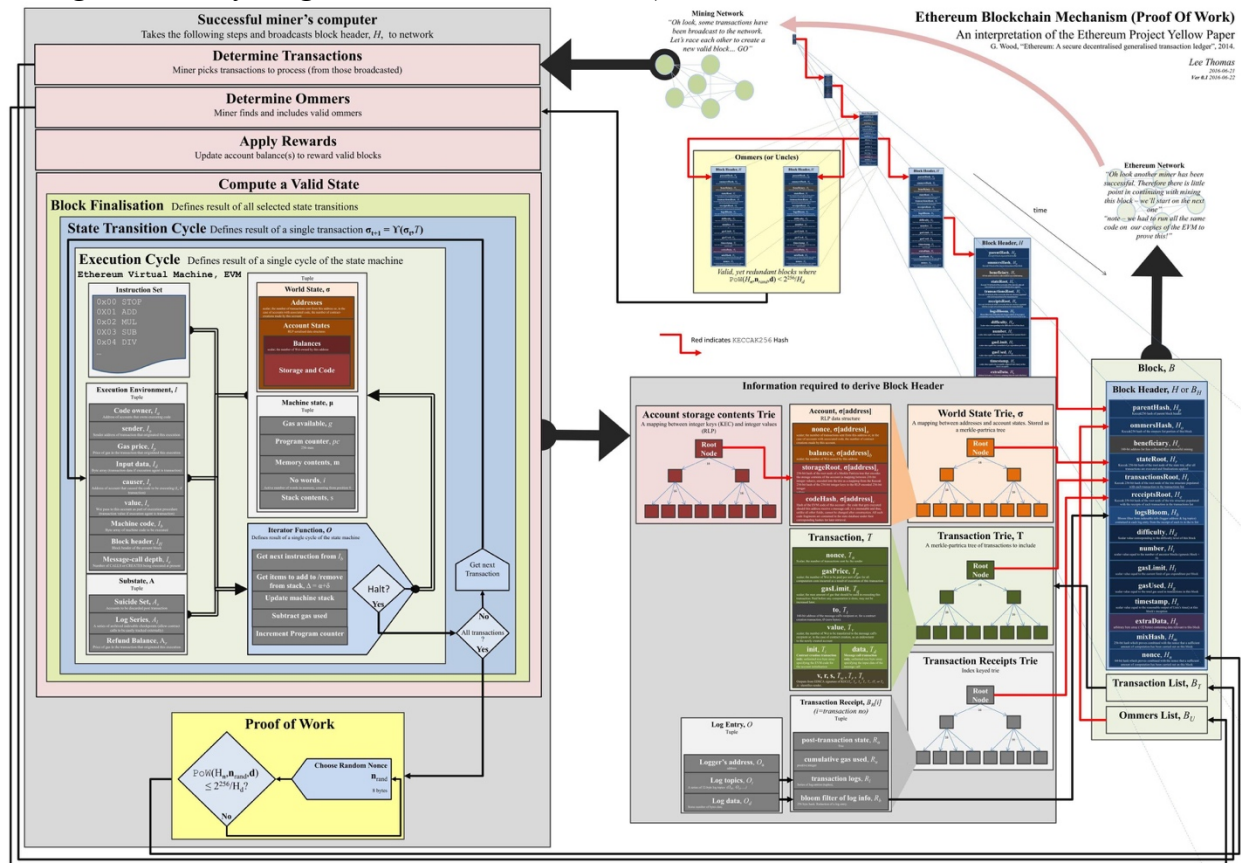


Figure I. Source: Lee Thomas, <https://ethereum.stackexchange.com/questions/268/ethereum-block-architecture>