Final Project – Topic#5:

Ethereum Block Relationships

- **(a) Block Counts vs Rewards**
  - Consider the following values for the Ethereum network: Block-Counts* and Block-Rewards per day. Can there be a correlation relationship established between the two?

- Motivate your answer using:
  - - the blockchain notions in the lecture and
  - - the XBlock Ethereum dataset provided and data analytics tools in the lecture

* Block-Counts are the number of Ethereum blocks mined per day

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- **(b) Transaction Count vs Block-Size**
  - Consider the following values for the Ethereum network: Transaction-Counts* and Block-Sizes** per day. Can there be a correlation relationship established between the two?

- Motivate your answer using:
  - - the blockchain notions in the lecture and
  - - the XBlock Ethereum dataset provided and data analytics tools in the lecture

* Transaction-Counts are the number of transactions per day

** Block-Sizes are the sizes of the blocks (e.g. in Bytes) mined

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- **(c) Average Block-Time vs Block-Difficulty**
  - Consider the following values for the Ethereum network: average Ethereum Block-Times* and average Block-Difficulty** per day. Can there be a correlation relationship established between the two?

- Motivate your answer using:
  - - the blockchain notions in the lecture and
  - - the XBlock Ethereum dataset provided and data analytics tools in the lecture
- Dataset : https://owncloud.fraunhofer.de/index.php/s/rPMmIuw8I8tc3sV

* Block-Time is the time elapsed since the previous block was mined to the latest mined block

** Block-Difficulty is the number of hashes (e.g. in TeraHashes) used to mine a Ethereum block during PoW