F42 Proposal

## **Topic Selection**

As plenty of knowledge in blockchain field are delivered in our courses, the most frequently mentioned keywords definitely include Ethereum. It can be considered as the representation of cryptocurrency next generation [1].

Ethereum remains about 326 billion by Oct,2024 [2], which is second preferable in the whole cryptocurrency trading market. Moreover, the shocking release of smart contract and solidity extremely improve the enrollment [3].

Therefore, we decided to study on the topic of how Ethereum works and trying to seek potential theory gap then raise possible solutions.

## **Division of Labor and Completion Time**

(Nov07)ZJ write research report

(Nov07)LLX write presentation PowerPoint

(Oct31)LSH coding on smart contract

(Oct31)HZ raise possible improvements toward certain drawbacks

(Oct31)SLL state Ethereum working principle and raise potential vulnerabilities

(Nov14)ZYH deploy smart contract and explain core effects

## **Study Aim**

### Problem Statement

We will go thorough the working procedure of Ethereum and find out potential problems then clarify the reasons and trying to provide possible solutions. Every student in F42 group will take part in the background materiel reading and help discovering problems.

### Creative Solution Design

After specifying certain research gap of Ethereum, we will start to create solutions and HZ will mainly focus on this part. Brainstorming, conceptualizing, and outlining a unique approach are considered to be taken in this part.

### Implementation of a Blockchain Application

As a demonstration smart contract is provided, we will design our own one solving problems mentioned before which directly led by LSH. Other group members will help evaluating solidity code correctness, efficiency, robustness, etc.

### Group Project Presentation

Presentation is necessary and spot demonstration is also preferable. ZYH will focus on this deployment with LLX and ZJ collect records to form up final report simultaneously.

## **Data Collection**

We may collect information from GitHub [4] and Google Scholar [5].

## **Deep Diving**

What are the social impacts, essential restrictions of Ethereum and what is the development direction of Ethereum future.

## **Reference**

1. [Ethereum Whitepaper | ethereum.org](https://ethereum.org/en/whitepaper/" \l "a-next-generation-smart-contract-and-decentralized-application-platform) <https://ethereum.org/en/whitepaper/#a-next-generation-smart-contract-and-decentralized-application-platform>
2. [Ethereum Price, Chart, Market Cap, ETH Coin Essentials | CoinLore](https://www.coinlore.com/coin/ethereum) <https://www.coinlore.com/coin/ethereum>
3. [Introduction to Smart Contracts — Solidity 0.8.28 documentation](https://docs.soliditylang.org/en/v0.8.28/introduction-to-smart-contracts.html) <https://docs.soliditylang.org/en/v0.8.28/introduction-to-smart-contracts.html>
4. [inoutcode/ethereum\_book](https://github.com/inoutcode/ethereum_book)  <https://github.com/inoutcode/ethereum_book>
5. [ethereum - Google Scholar](https://scholar.google.com/scholar?hl=en&as_sdt=0,5&q=ethereum&btnG=) https://scholar.google.com/scholar?hl=en&as\_sdt=0%2C5&q=ethereum&btnG=