

Use Cases and Design of Decentralized Financial Web Applications

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Declaration

I hereby declare and confirm that this thesis is entirely the result of my own original work. Where other sources of information have been used, they have been indicated as such and properly acknowledged. I further declare that this or similar work has not been submitted for credit elsewhere. This printed copy is identical to the submitted electronic version.

Hagenberg, February 1, 2021

Johannes Hüsers

Abstract

TODO: 0.5 - 1 page

Kurzfassung

TODO: 0,5 bis 1 Seite

Contents

Declaration	iv
Abstract	v
Kurzfassung	vi
1 Introduction 2.5	1
1.1 Motivation	1
1.2 Goals	1
1.3 Structure of the Thesis	1
2 Fundamentals 10	2
2.1 Cryptography	2
2.2 The Ethereum Blockchain	2
2.3 Smart Contracts	2
2.4 Decentralized Finance	2
2.5 State of the Art	2
3 Use Cases of Decentralized Finance 10	3
3.1 Store of Value 1.5 - 3.5	3
3.2 Payments 1.5 - 3.5	3
3.3 Lending 1.5 - 3.5	3
3.4 Exchanging 1.5 - 3.5	3
3.5 Investing 1.5 - 3.5	3
4 Design and Architecture 25	4
4.1 Architecture of Decentralized Web Applications	4
4.2 Lending and Borrowing Application	4
4.3 Token Exchange	4
4.4 Asset Management Platform	4
5 Closing Remarks 2.5	5
5.1 Criticism	5
5.2 Risks	5
5.3 Prospective Impact	5
References	6

Chapter 1

Introduction 2.5

1.1 Motivation

1.2 Goals

1.3 Structure of the Thesis

Chapter 2

Fundamentals 10

* definition of technical terms (e.g. DeFi, Blockchain, Smart Contracts, Security Tokens, ...)
* explanation of fundamental concepts (e.g. Decentralization, Ethereum Network, Gas Price, Proof of Stake, Proof of Work...)

2.1 Cryptography

2.2 The Ethereum Blockchain

2.3 Smart Contracts

2.4 Decentralized Finance

2.5 State of the Art

current applications, relevance on the market, technologies, ...

Chapter 3

Use Cases of Decentralized Finance 10

This chapter aims to introduce the five most relevant use cases of Decentralized Finance. Each use case is built on top of the previous one and rises in complexity. For example storing value in digital systems is pretty easy nowadays but moving real physical assets such as gold or real estate is still pretty demanding. Note that each type of financial service is not DeFi specific, which means that they are applicable to every financial environment.

3.1 Store of Value 1.5 - 3.5

3.2 Payments 1.5 - 3.5

3.3 Lending 1.5 - 3.5

3.4 Exchanging 1.5 - 3.5

3.5 Investing 1.5 - 3.5

Chapter 4

Design and Architecture 25

- 4.1 Architecture of Decentralized Web Applications
- 4.2 Lending and Borrowing Application
- 4.3 Token Exchange
- 4.4 Asset Management Platform

Chapter 5

Closing Remarks 2.5

5.1 Criticism

5.2 Risks

5.3 Prospective Impact

References

* Literature * Online Sources

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