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Melon Reporting Thesis

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Abstract

Introduction

Organisation

The main entry point for this project is the open source Github repository github.com/melonproject/reporting-thesis.

The documentation can be found (and commented) on Gitbooks: schmidsi.gitbooks.io/melon-reporting.

Project management is done with a simple Kanban board as a Github Project: github.com/melonproject/reporting-thesis/projects/1

Single tasks are managed as Github Issues: github.com/melonproject/reporting-thesis/issues

/

Strategy

Vision

Creating functionality on top of the Melon protocol that automates reporting/auditing almost completely:

> a) Something that a real fund manager would be able to confidently say: “This solves my reporting issues and makes my life a lot easier”
>
> b) Something that can be show-cased to FINMA (and other regulators) and show them how: "This will make *their* life over-seeing a lot easier”

Hypothesis

It is possible to extract and visualize all relevant data from the Melon protocol on the Ethereum blockchain in a way that could be legally acceptable by regulators. Furthermore, this data can be audited and digitally signed and a track record of these audits can be placed on the blockchain again.

Boundaries

Legal

This is a technical thesis and therefore we do not deeply research into the legal aspects of fund management and reporting. But we will find ways how technology can support the legal processes.

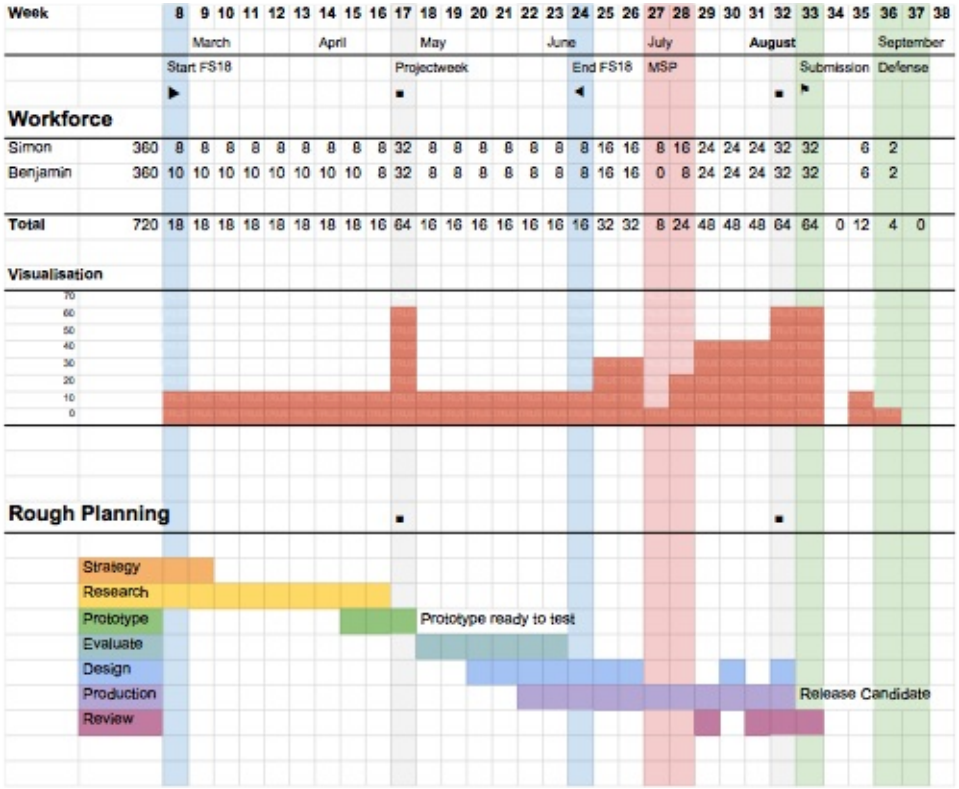
Technical

Risks

Name	Counter measures	Risk (*)
Distractions from classes	Clear timeboxing. Clear planning. Buffers.	2 * 1 = 2
Distractions from job	Clear timeboxing. Clear planning. Clear and upfront communication of availabilities. Support from management.	1 * 1 = 1
Project team out of sync	Weekly team work time slots. Open communication. Weekly reports.	2 * 2 = 4
Dependency on systems out of project scope	Apply subsystem decomposition and isolation techniques from the beginning.	3 * 2 = 6
Loosing focus / distraction by details	Weekly reports to coaches and project sponsors to gather feedback.	3 * 2 = 4

(*) Probability of occurence (1-3) * severity (1-3) = risk

Planning



Strategy

In a first step the foundation of the project is laid. Vision, hypothesis and boundaries are defined and agreed upon with the stake holders and a rough planning is created. Furthermore repositories are created, docs initialized, etc.

Deadline: 2.3.2018

Expected results:

- Project vision
- Hypothesis
- Project boundaries
- Rough planning
- Basic setup of environment

Research

The next step is to deep dive into the problem domain. We read and summarize the important articles about the topic and learn the underlying technologies. Also part of research are interviews.

Deadline: 20.4.2018

Expected results:

- Overview & summary of material: Articles, law, templates, ...
- Knowledge of underlying technologies (Blockchain, Solidity, React, Redux, Digital signing, etc.)
- Transcripts of interviews

Prototype

The collected knowledge from the research phase is now transformed into a first prototype which can be challenged by the stake holders and test users.

Deadline: 27.4.2018

Expected results:

- Prototypes
- Wireframes

Evaluate

Testing & discussing the prototype with the stake holders and test users give us valuable insights for the further development.

Deadline: 22.6.2018

Expected results:

- Evaluation reports
- User testing reports

Design

Already during the evaluation phase we start the design phase to have an iterative process: The prototype and wireframes are adjusted from the feedback but also the work on the final mockups and software architecture is started.

Deadline: 29.6.2018 (+ ongoing iterations)

Expected results:

- Mockups
- Software Architecture
- Specifications

Production

Iterative development and finish a release candidate. Also in combination with design and review phase. Basically in the following loop: Design -> Production -> Review -> Design -> ...

Deadline: 10.8.2018

Expected results:

Review

Collect feedback of the release candidate, finish documentation and submission of the thesis.

Deadline: 17.8.2018

Expected results:

Journal

We send a short status update every week to our stakeholders. They are also pasted here for reference.

Calendar Week 8

We started working on the thesis and made a first broad overview over the topics:

- Benjamin started to research into blockchain development particularly Solidity.
- Simon setup the repository and got in touch with possible project supporters from PwC and read a bit into the domain of legal reporting of collective investment schemes.

Calendar Week 9

In the second week we already deep dived into the specific domains:

- Benjamin set up the Solidity development environment according to the Melon setup with dapp.tools, parity dev chain but also looked into truffle suite.
- Simon researched MiFID II and PRIIP and started the glossary for these confusing abbreviations: https://github.com/melonproject/reporting-thesis/blob/master/docs/GLOSSARY.md

Research

http://www.fundinfo.com/en/home/

https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/IM/lu_priips-key-investor-document.pdf

Example #1 FTIF - Templeton Global Total Return Fund - A

- http://www.fundinfo.com/en/isin/LU0170475312/
- KIID

EFAMA

- European PRIIPs Template (EPT)
- “Comfort” EPT (CEPT)

Prototype

Evaluate

Design

Interchangeable Fund Data Format

```
{
  "name": "Example Fund",
  "inception": "yyyy-mm-dd hh:mm:ss",
  "description": "This fund is high risk",
  "manager": "0xbad...a55",
  "nav": 1000,
  "quoteSymbol": "MLN",
  "gav": 1100,
  "timestamp": "yyyy-mm-dd hh:mm:ss",
  "holdings": [
    {
      "symbol": "ETH",
      "amount": 1000
    }
  ],
  "trades": [
    {
      "buySymbol": "ETH",
      "sellSymbol": "MLN",
      "buyAmount": 100,
      "sellAmount": 50,
      "timestamp": "yyyy-mm-dd hh:mm:ss",
      "market": "0xdead...beef"
    }
  ],
  "audits": [
    {
      "timestamp": "yyyy-mm-dd hh:mm:ss",
      "auditor": "0xdead...beef1",
      "dataHash": "QmXZcdco6wZEA2paGeUnoshSB4HJiSTDxagqXerDGop6or",
      "signature": "0x23rasdfasdlfjhasldkfhas"
    }
  ]
}
```

Linked issues:

- https://github.com/melonproject/reporting-thesis/issues/7

Production

Software Architecture

https://lernajs.io

KIID

Key Investor Information Document. A summarized 1-2 pages document that contains most relevant documentation for retail investors.

Solidity

Specialized language to develop smart contracts

MiFID II

EU Markets in Financial Instruments Directive. MiFID I originally from 2004 it's successor MiFID II took effect on January 2018.

- https://en.wikipedia.org/wiki/Markets_in_Financial_Instruments_Directive_2004

FCA

Financial Conduct Authority UK https://www.fca.org.uk/

PRIIP

Packaged Retail and Insurance-based Investment Products

> A PRIIP is defined as: an investment where, regardless of its legal form, the amount repayable to the retail investor is subject to fluctuations because of exposure to reference values or to the performance of one or more assets that are not directly purchased by the retail investor; or an insurance-based investment product which offers a maturity or surrender value that is wholly or partially exposed, directly or indirectly, to market fluctuations.
>
> The aim of the PRIIPs Regulation is to encourage efficient EU markets by helping investors to better understand and compare the key features, risk, rewards and costs of different PRIIPs, through access to a short and consumer-friendly Key Information Document (KID). How information in the KID should be calculated and presented is set out in the PRIIPs Regulatory Technical Standards (RTSs).

- Source: https://www.fca.org.uk/firms/priips-disclosure-key-information-documents

EFAMA

European Fund and Asset Management Associaton

http://www.efama.org/SitePages/Home.aspx

ESMA

European Securities and Market Authority

https://www.esma.europa.eu

Prospectus

> A prospectus, in finance, is a disclosure document that describes a financial security for potential buyers.

https://en.wikipedia.org/wiki/Prospectus_(finance)

SRRI

> The synthetic risk and reward indicator (SRRI) is used to classify investment funds into one of three different risk categories (low risk, medium risk, high risk). It is calculated on the basis of Austrian and European regulatory requirements. This indicator forms an integral part of the Key Investor Information Document (KIID) and gives the historical volatility of the fund unit price on a scale from 1 to 7.

SRRI	Risk category	Volatility intervals
1	Low risk	0% to <0.5%
2		≥0.5% to <2.0%
3	Medium risk	≥2.0% to <5.0%
4		≥5.0% to <10.0%
5		≥10.0% to <15.0%
6		≥15.0% to <25.0%
7	High risk	≥25.0%

http://fundglossary.erste-am.com/srri/

FINMA

Swiss Financial Market Supervisory Authority / Eidgenössische Finanzmarktaufsicht

https://www.finma.ch

https://www.finma.ch/en/authorisation/institutions-and-products-subject-to-the-collective-investment-schemes-act/

CISA

(FINMA)

Collective Investment Schemes Act / Kollektivanlagengesetz, KAG

https://www.admin.ch/opc/en/classified-compilation/20052154/index.html

CISO

Collective Investment Schemes Ordinance / Kollektivanlagenverordnung, KKV

https://www.admin.ch/opc/en/classified-compilation/20062920/index.html

CISO-FINMA

Ordinance of the Swiss Financial Market Supervisory Authority on Collective Investment Schemes / Kollektivanlagenverordnung-FINMA, KKV-FINMA

https://www.admin.ch/opc/en/classified-compilation/20140344/index.html

UCITS

Undertakings For The Collective Investment Of Transferable Securities

https://www.investopedia.com/terms/u/ucits.asp
https://en.wikipedia.org/wiki/Undertakings_for_Collective_Investment_in_Transferable_Securities_Directive_2009