BCDV1011 Design Patterns for Blockchain

Requirements Analysis

Requirements gathering

- Goals
- Stakeholders
- State data
- Restrictions
- Exceptions
- Types of req docs

Goals

- What is the stakeholder trying to achieve?
- How do they measure that?
- Problem statement

Stakeholders

- Who is involved?
- What are the roles that they play?
- What are their restrictions?
- What are measures for success?

State Data

- What is the system tracking?
- What needs to be captured?
- What is generated?

Restrictions

- Are there restrictions by roles/users?
- Are there date/time restrictions?
- Limitations by rules?
- Calculated restrictions?
- Financial and time constraints?

Exceptions

- Can any of the rules be broken under certain circumstances?
- Should any new rules be added in certain circumstances
- What about edge conditions?

Example

Media Timestamp

Description

A system that creates a blockchain record representing media data that can be used to show authenticity and authorship.

Problem

We are in an age where media is hard to trust:

- Online text can be easily changed. This can be used to distort the record of online conversations.
- Photos and videos can be manipulated to change the image to suit the needs of a political agenda.
- Audio can be edited to change the order of words or remove offending excerpts.

Example

Media Timestamp - Goals

● Record a timestamp on Ethereum to show ownership
● Be able to prove ownership from a media file

Example

Media Timestamp - Stakeholders

- Owner of timestamp contract
- Anonymous accounts that file a timestamp

Example

Media Timestamp - State Data

- A cryptographic hash of the media file
- Date&time, description, type of media, owner contact
- Link to media on internet

Example

Media Timestamp - Restrictions

- Only one entry per hash
- Ownership cannot be changed

Example

Media Timestamp - Exceptions

- Ownership is contested in court of law and fails
- Previous ownership proven

Product Requirements Document (PRD)

- Defines the requirements of a particular product
- Includes the product's purpose, features, functionality, and behavior
- Serves as a guide for business and technical teams to help build, launch, or market the product
- Includes
  - Project specifics - team, dates, status
  - Objectives
  - Assumptions
  - User stories
  - Design - wireframes, element designs, mockups

Business Requirements Document (BRD)

- Describes the high-level business case
- Answers the question what the business wants to do
- Gathers information from the stakeholders on success criteria
- Return on investment analysis
- Benchmarks, milestones, project phases

Software Requirements Document (SRD)

- Defines system level functional and performance requirements for a system
- Should include a system-level description of all software elements required
- Covers
    - Integrations
    - Inputs and outputs
    - Data
    - Security, authentication, authorization, RBAC