

Patient Data Management Using Hyperledger Fabric

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Agenda

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Innovation in Healthcare Industry

Problem Statement

Solution

Requirements

Basic Architecture

Project Plan

Technology Stack

References

Innovation in Healthcare Industry

- One of the slowest industry ?
- Vertical Innovation and Horizontal Innovation
- Blockchain: The Next Horizontal Innovation

Problem Statement

Healthcare and Interoperability

Access to patients' medical histories is essential to correctly prescribe medication.

Some of the problems with the current system are:

- Identifying Patients
- Information Blocking

Blockchain can dramatically enhance the healthcare services framework in this regard.

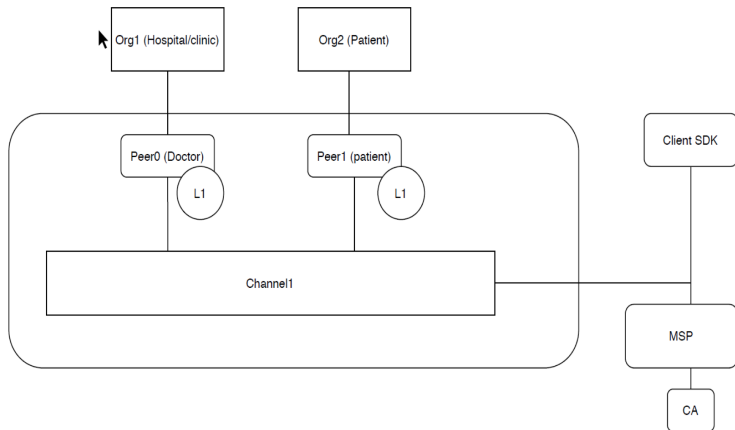
Solution

- **Permissioned Healthcare Blockchain using Hyperledger Fabric.**
- **New approach will:**
 1. enable smooth transfer of medical data
 2. provide reliable medical history on patient
 3. provide more security
 4. easy access to data

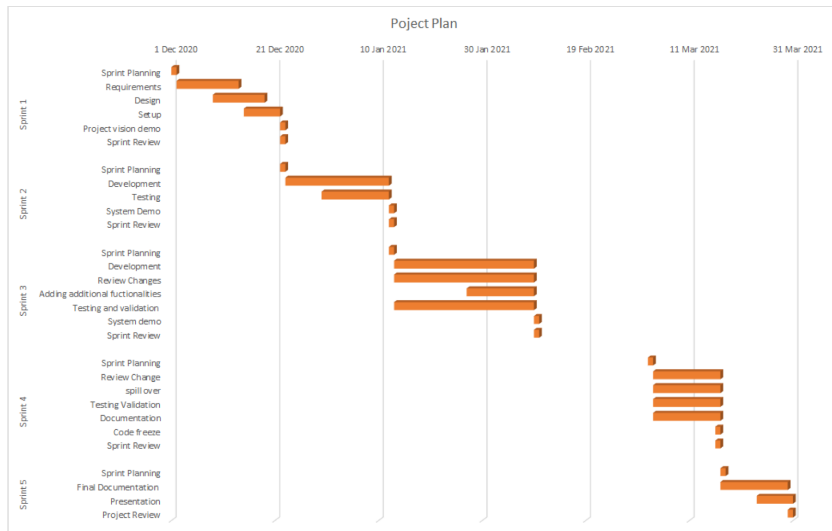
Requirements

- Organizations
 1. Patients
 2. Hospitals/clinic
- Peers
 1. Patients -> patient, emergency contact
 2. Hospitals/clinic -> doctor, laboratory
- Smart Contracts: `allowAccess()` etc.
- Confidential Communication: Different channels
- Web Interface: Interface for users

Basic Architecture



Project Plan



	Project Task	Duration	Days	
Sprint 1	Sprint Planning	1 Dec 2020	1	02/12 - 22/12
	Requirements	2 Dec 2020	12	
	Design	9 Dec 2020	10	
	Setup	15 Dec 2020	7	
	Project vision demo	22 Dec 2020	1	
	Sprint Review	22 Dec 2020	1	
Sprint 2	Sprint Planning	22 Dec 2020	1	22/12 - 12/01
	Development	23 Dec 2020	20	
	Testing	30 Dec 2020	13	
	System Demo	12 Jan 2021	1	
	Sprint Review	12 Jan 2021	1	
Sprint 3	Sprint Planning	12 Jan 2021	1	12/01 - 09/02
	Development	13 Jan 2021	27	
	Review Changes	13 Jan 2021	27	
	Adding additional functional	27 Jan 2021	13	
	Testing and validation	13 Jan 2021	27	
	System demo	9 Feb 2021	1	
	Sprint Review	9 Feb 2021	1	
Sprint 4	Sprint Planning	3 Mar 2021	1	03/03 - 16/03
	Review Change	4 Mar 2021	13	
	spill over	4 Mar 2021	13	
	Testing Validation	4 Mar 2021	13	
	Documentation	4 Mar 2021	13	
	Code freeze	16 Mar 2021	1	
	Sprint Review	16 Mar 2021	1	
Sprint 5	Sprint Planning	17 Mar 2021	1	17/03 - 30/03
	Final Documentation	17 Mar 2021	13	
	Presentation	24 Mar 2021	7	
	Project Review	30 Mar 2021	1	

Technology Stack

- Smart Contracts: Node.js
- Database: Level DB/CouchDB
- Frontend: Angular

References

1. Sudeep Tanwar, Karan Parekh, Richard Evans, Blockchain-based electronic healthcare record system for healthcare 4.0 applications.
2. <https://blockgeeks.com/guides/blockchain-in-healthcare/>

Thank You!