Alpha Presentation
Blockchain Based Vaccine Passport System
The Capstone Experience
Team MaxCogito

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Project Overview

• Secure, verifiable "vaccine passports" are essential for public safety amidst the COVID-19 pandemic.
  ▪ By verifying individual's vaccination statuses, the risk of spreading the virus via travel, sporting events, concerts, etc. can be minimized.

• By leveraging the immutable nature of the blockchain, secure digital "vaccine wallets" can be verified.
  ▪ The goal of this project is to create a system that allows users to easily display vaccination status and request updates.

• The system should support users that don't want a wallet.
  ▪ These users will not have the benefits of the blockchain.
System Architecture

Blockchain Based Vaccine Passport System

Frontend
- Web frontend
- User Wallet (Android)

Backend
- API (Spring boot)
- PostgreSQL Database
- Admin wallet

Ethereum Blockchain
- Smart Contract
(User) User’s Vaccine
(User) Request for update

<table>
<thead>
<tr>
<th>Date of Vaccination</th>
<th>Manufacturer</th>
<th>Lot Number</th>
<th>Location</th>
<th>Dose Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021-04-01</td>
<td>pfizer</td>
<td>EM6203</td>
<td>CVS</td>
<td>1</td>
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<tr>
<td>2021-04-22</td>
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<td>EN9264</td>
<td>CVS</td>
<td>2</td>
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<td>2022-01-20</td>
<td>moderna</td>
<td>011121A</td>
<td>Walgreen’s</td>
<td>3</td>
</tr>
</tbody>
</table>
(Admin) Account Status Approval Request
(Admin) Vaccine Status Approval Request
What’s left to do?

• Additional Encryption
  ▪ Creating digital signatures during user registration and for other endpoint requests

• Mobile App
  ▪ Metadata Manager coordination with latest blockchain state
  ▪ Local Review (Android Application Front End)

• Prettier UI (animations, bug fixes, etc.)

• Additional Testing
Questions?