MICHIGAN STATE UNIVERSITY

Alpha Presentation

Blockchain Based Vaccine Passport System

The Capstone Experience

Team MaxCogito

Moez Abbes
Drew Decrem
Daniel Abu-Djan
Alex Holt
Samgar Kali
Lucas Sariol

Department of Computer Science and Engineering
Michigan State University

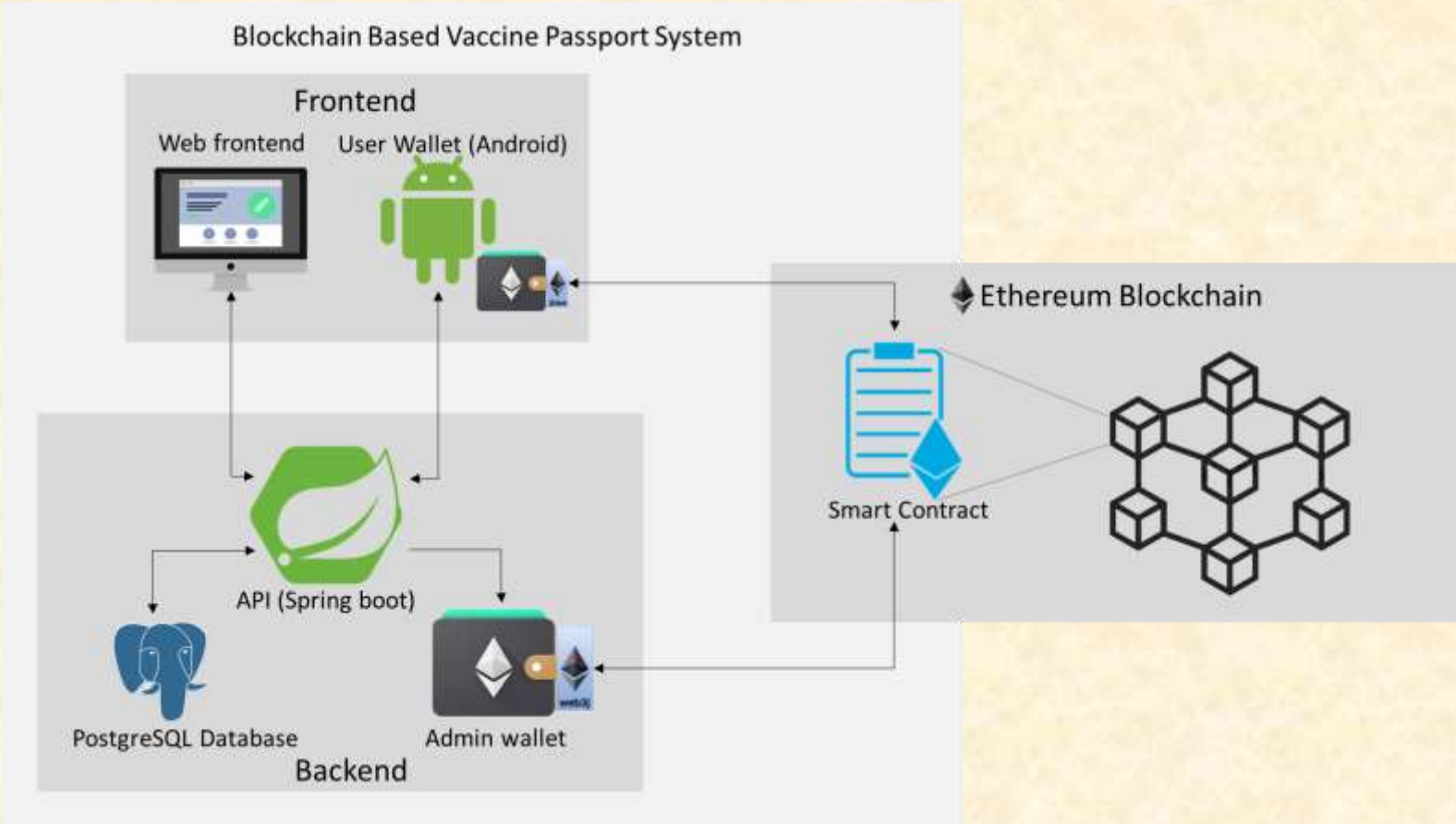
Spring 2022

From Students…
…to Professionals

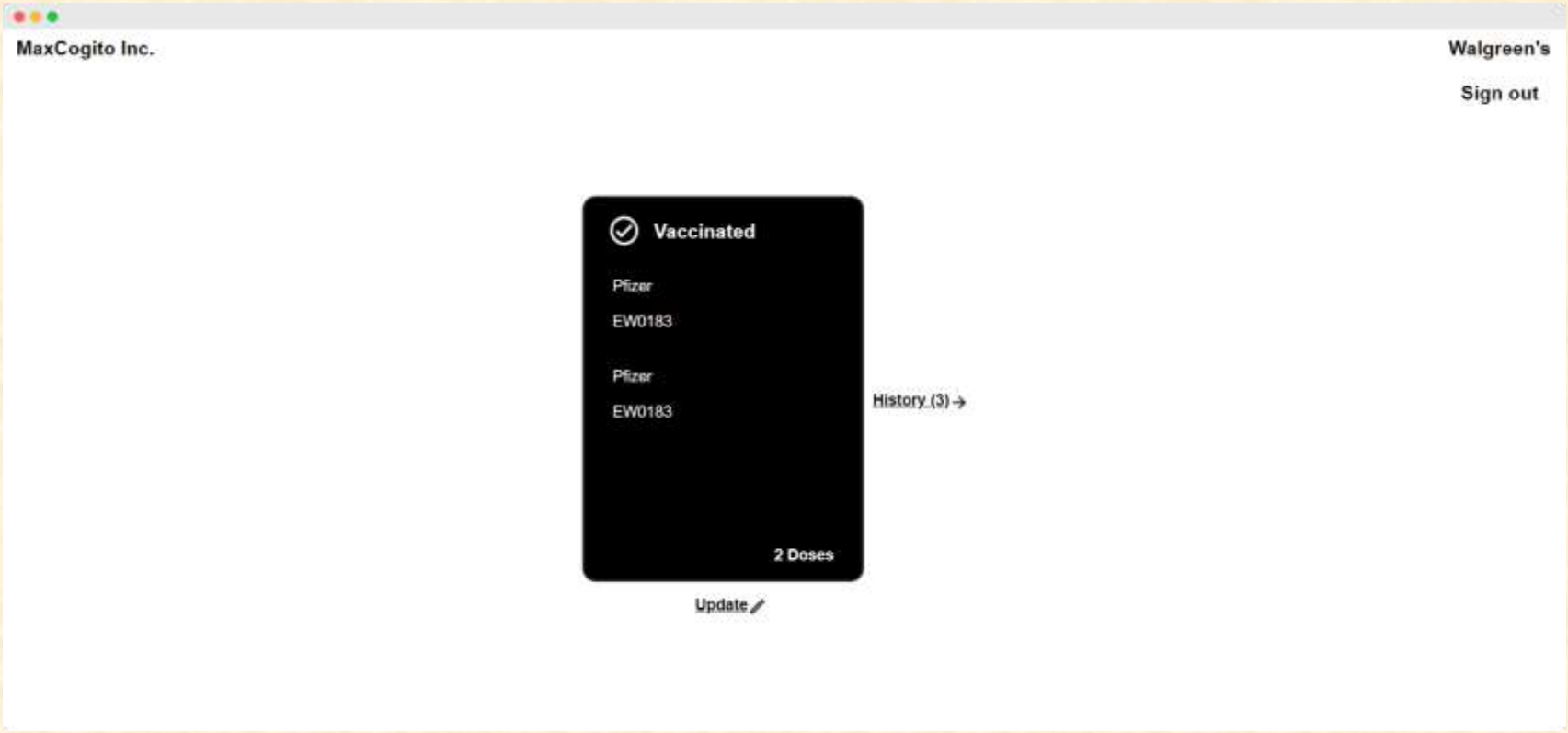
Project Overview

- 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



(User) User's Vaccine



(User) Request for update

MaxCogito Inc.

Walgreen's

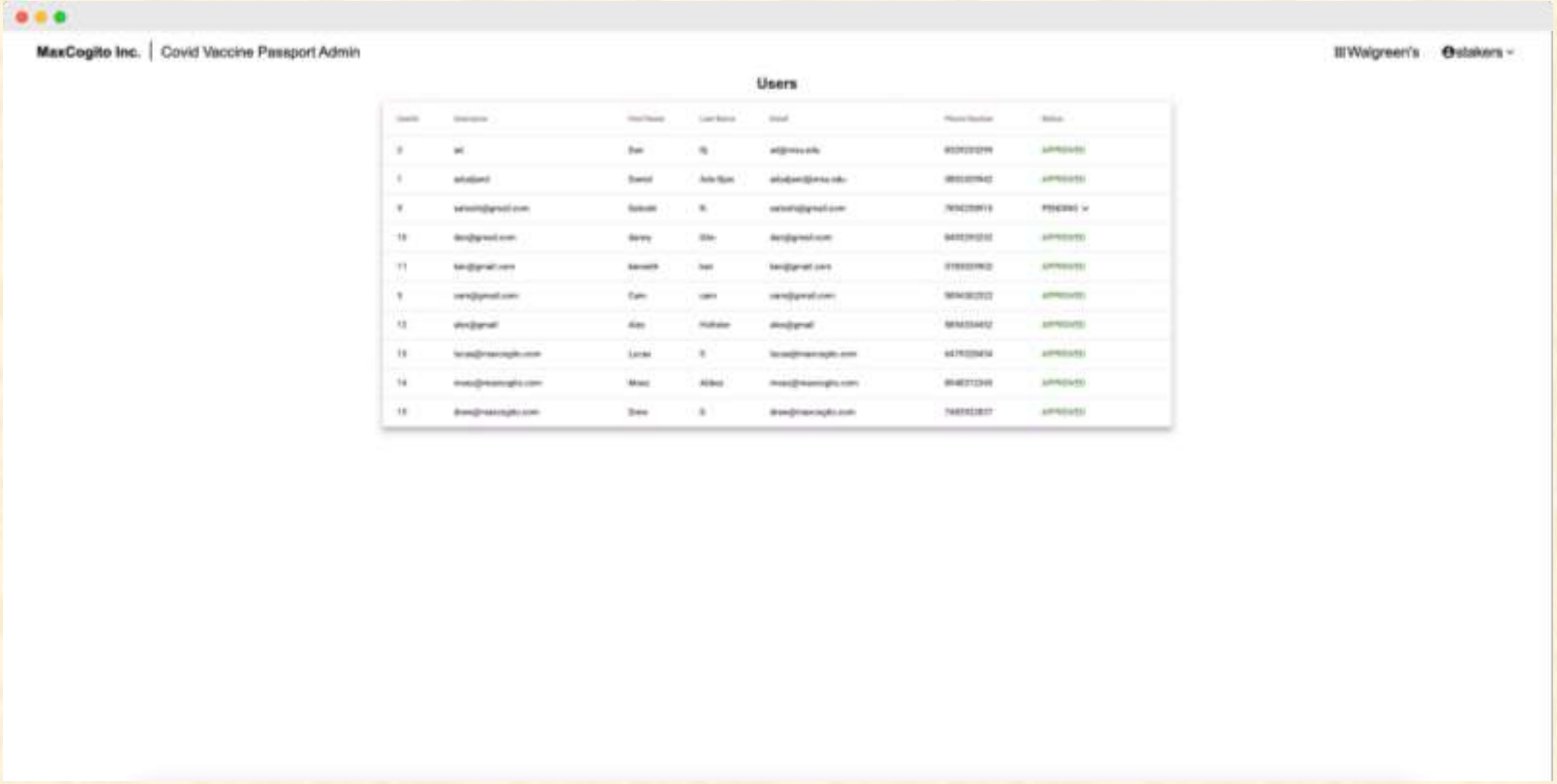
Sign out

Submit

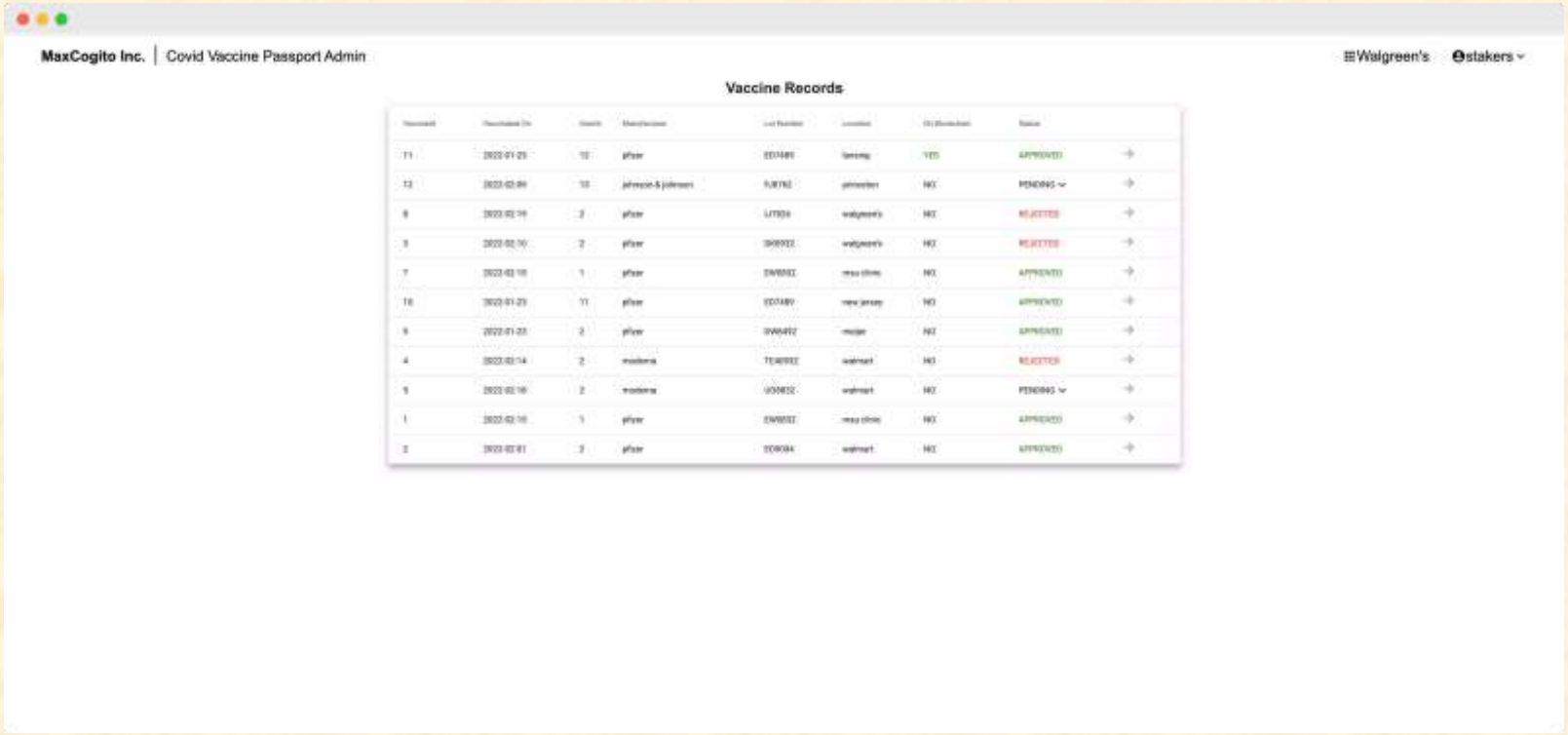
vaccine_image.png

	Date of Vaccination*	Manufacturer*	Lot Number*	Location*	Dose Number*	
1.	2021-04-01	pfizer	EN6203	CVS	1	⊕
2.	2021-04-22	pfizer	EN9264	CVS	2	⊖
3.	2022-01-20	moderna	011121A	Walgreen's	3	⊖

(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?