FINAL PLANNING DOCUMENT

Senior Design Project
Blockheads
CredHub – Credentials and Identity Manager
Selma Samet, Megan Steeves, Kellen Mentock, and Tamara Linse

Project

Our team, BlockHeads, is developing an android phone application called CredHub. The application allows the user to securely store important documents such as IDs and diplomas for a subscription fee. The app also uses blockchain for storing credentials and smart contracts for added security.

The current team (you!) with short 2 sentence bios as well as what "role" / lead you are each taking in the project?

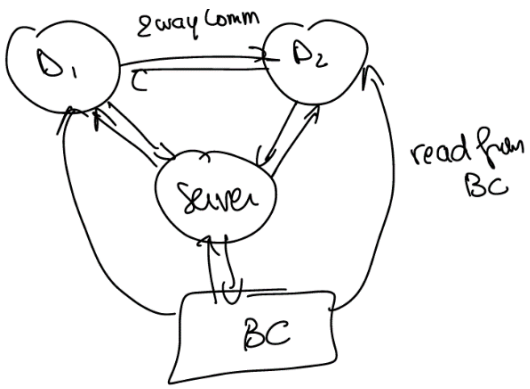
- Selma Samet is a senior majoring in computer science and pursuing a certificate in cybersecurity. I am mainly in charge of security and authentication measures for our project (with Megan).
- Tamara Linse is a senior in computer science. I am in charge of validation and the database (with Selma).
- Megan Steeves is a senior in computer science with a minor in blockchain. I am mainly in charge of UI/UX (with Selma) and the API (with Tamara).
- Kellen Mentock is a senior at UW in computer science with a minor in blockchain. I am in charge of the server (with Megan) and blockchain and smart contracts (with Tamara).

A description and/or list of the functional requirements of your end product and/or minimum viable product (what must the final or MVP be able to do?)

- Our minimum viable product will:
  - verify a Wyoming driver's license and a UW degree,
  - provide login, 2FA, and recovery of passwords,
  - have an android interface,
  - establish smart contracts to interact with blockchain and blockchain to store IDs and credentials,
  - create a server to interact with devices and the blockchain,
  - establish a simulated API and mock client database, for both WyDOT and UW, and
  - create a database for temporary and system data mirrored between a device and the server.

A High-Level Systems Overview (e.g., what are the major components in your system). Diagrams and Text descriptions would be appropriate.

- These are our high-level systems, potential languages to use, and primary and secondary team members responsible for that area.
  1. Android UI/UX, Java/Kotlin – Megan (Selma)
     - User profile, settings, preferences, and support.
  2. Security and Authentication, Java/Kotlin – Selma (Megan)
     - Document capturing and authentication.
     - Document sharing and permissions.
  3. Server, Python/C++ – Kellen (Megan)
     - API, security protocols, and data processing.
  4. API – Megan (Tamara)
     - An API simulating WyDOT and UW verification
  5. Database, SQL – Tamara (Selma)
     - User data storage, and data retrieval.
  6. Blockchain and Smart Contracts, Solidity – Kellen (Tamara)
     - Integration of Blockchain, data storage and integrity.
  7. Validation (contacting organizations) – Tamara (Selma)
     - Integration of external organizations, verification, and tracking.



List and Detailed Description of the MAJOR Milestones for your project (think top 3-4 things) -- How will you know when you have successfully reached/completed each milestone?

1. AWS server up and running
2. Integration of the security protocols, facial recognition, 2FA, and password recovery
3. Functioning UI
4. Implement blockchain and smart contracts
5. Working database
6. Establish an API
7. Fine-tuning of parts
8. Verify that all parts are working together
9. Testing
10. Verification of diplomas through a mock API based on University of Wyoming procedures
11. Verification of driver's license through a mock API based on WyDOT procedures
12. Prepare presentation

A List of major tasks that lead to each milestone (no details required); think in segments of ~2-week tasks for one person; set and assign the task to a lead for now (it might change later). This may be from Trello or other planning site, not required, but would be really helpful. You should capture the above as both a task listing as well as some graphical timeline (gantt chart?) representation to show relationships (if any) between tasks.

Milestone	Deadline	Lead	Functionality
1	1.22	Kellen	AWS server up and running
2	2.2	Selma	Integration of the security protocols, facial recognition, 2FA, and password recovery
3	2.2	Megan	Functioning UI
4	2.2	Kellen	Implement blockchain and smart contracts
5	2.2	Tamara	Working database
6	2.2	Megan	Establish an API
7	2.23	All	Fine-tuning of all parts
DEADLINE TO GET ALL OUR FUNCTIONALITY WORKING TOGETHER			
8	3.1	All	Verify that all parts are working together
9	3.15	All	Testing
10	3.22	All	Verification of diplomas through a mock API based on University of Wyoming procedures
11	3.22	All	Verification of driver's license through a mock API based on WyDOT procedures
12	3.29	All	Prepare presentation

A list of any additional/stretch goals that could added to project if time allows.

- Managing passports and other important documents.
- Setting up a reminder in the app for expiration dates.
- Implementing QR codes for verification.
- Adding a trusted/emergency contact in the app.
- Implementing a 12-word recovery phrase.