

I.C.E.D.

Interface for Coordinating Emergencies and Disasters



Team

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Site: <https://icedrelief.net>

Background

- Natural Disasters induce confusion among all parties involved
- Useful information and resources are scattered through multiple platforms of communication
- Disaster relief organizations have historically struggled with coordinating relief efforts with third party organizations

Goals and Motivation

- Create an interface for managing and filtering incoming data for relief organizations
- Provide a user-friendly platform for distributing information to civilians in an affected area
- Assist local organizations in communicating their logistical operations to parent organizations, such as FEMA

Key Features

- **Information Collection from Anonymous Sources**
 - Crowdsourcing interface
 - Allow inputting of information related to occurring disaster
- **Information Distribution and Analytics**
 - Decentralized organization -> user communication channels
 - Secure information distribution channels and prevent information manipulation (out of order, withheld, etc.)
- **Logistics and Resource Tracking for Organizations**
 - Provide easy to use interface to facilitate organization - organization communication
 - Provide interface to filter events and requests (area at max capacity, out of supplies, etc)

Technical Challenges

The challenges we have identified are as follows:

- Big Data Volume and Processing
- Limited Front-end Development Experience
- Limited Team Based Blockchain Experience
- API Security
- Implementing cross-platform compatibility

Milestone 1

- Create Requirement Document
- Create Design Document
- Create Test Plan
- Evaluate Technical Tools and Collaboration Tools
- Resolve Technical Challenges

Milestone 1

- Technical Tools and Alternatives

Technical Tools	
Preferred Tools	Alternative Tools
Geth	Parity
MariaDB	Microsoft SQL
PHP	ASP.NET
Javascript	Coffescript/Typescript
HTML	XHTML
CSS	-
Java/C#	Objective C
Linux	Microsoft Windows
Solidity	Julia

Collaboration Tools	
Preferred Tools	Alternative Tools
Gitlab	Subverison
Discord	Telegram
Overleaf	Gummi
Google Drive	SFTP
SMS	Carrier Pigeon

Milestone 2

- Begin back-end implementation for crowd sourcing and blockchain
- Begin front-end development with emphasis on the crowd source feature
- Implement blockchain ledger function calls that translate the SQL database data into blockchain data; only for archiving data

Milestone 3

- Finish functional prototypes for the crowd source and logistic features
- Finish integrating crowd sourcing feature and logistics into the front end
- Integrate and test information distribution between clients
- Integrate and test archiving functions for the logistic feature

Task Matrix for Milestone 1

Task	Thomas	Daniel	George	Kevin
Create Requirement Document	20%	40%	20%	20%
Create Design Document	40%	20%	20%	20%
Create Test Plan	20%	20%	40%	20%
Evaluate Technical & Collaboration Tools	20%	20%	20%	40%
Resolve Technical Challenges	Front-end Development	Database optimize, security	Block-chain, Front-end	Front-end Development