HACETTEPE UNIVERSITY
BBM419 Design Project-I
H-Travel

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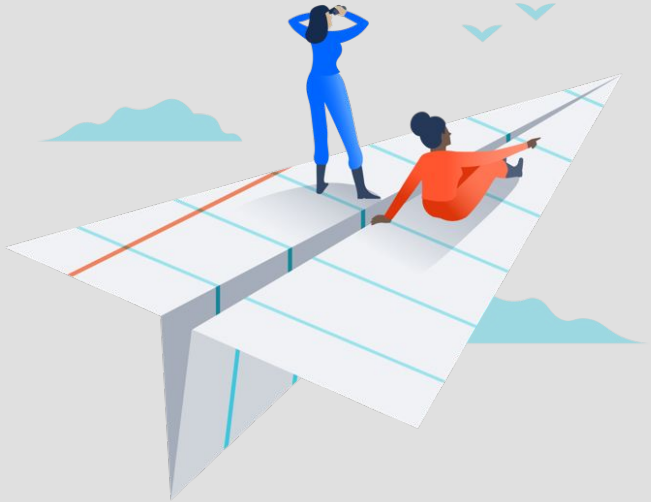


Problem Definition

We believe that the people are not giving enough attention to touristic places, and places are not advertised. We would like to say stop this ongoing situation and also would like to contribute to the tourism income of the country.

Our Aim

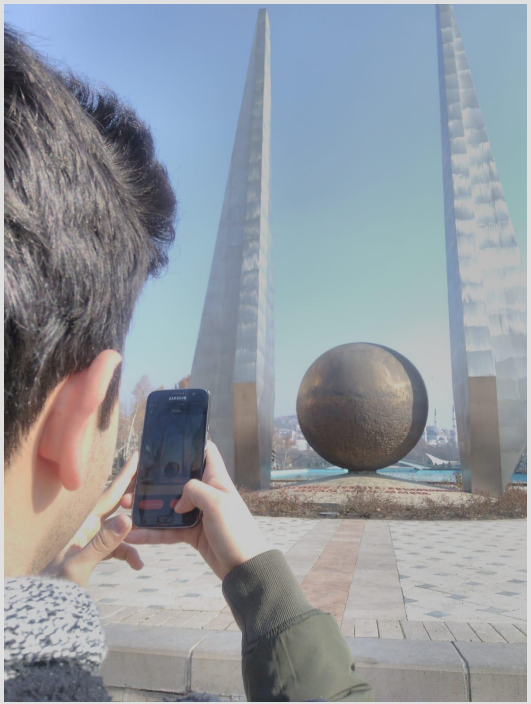
- Encourage people to travel and see new places.
- Inform about the names of the places.
- Increase the demand on touristic places.

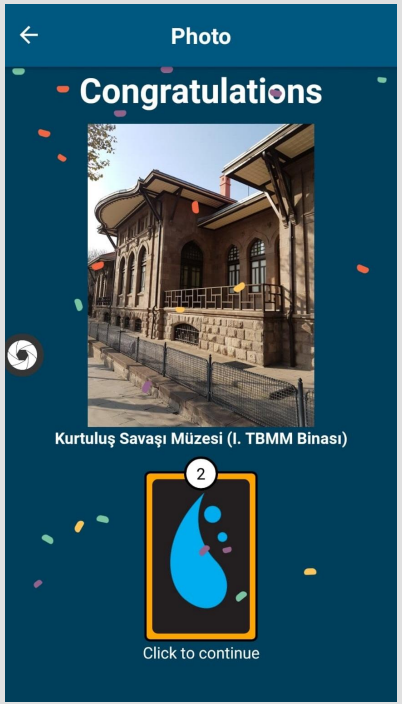
Our Aim (cont.)

- Entertain people with the game.
- Make it easily accessible with the mobile application.
- True ownership of game assets.

Travel and Win

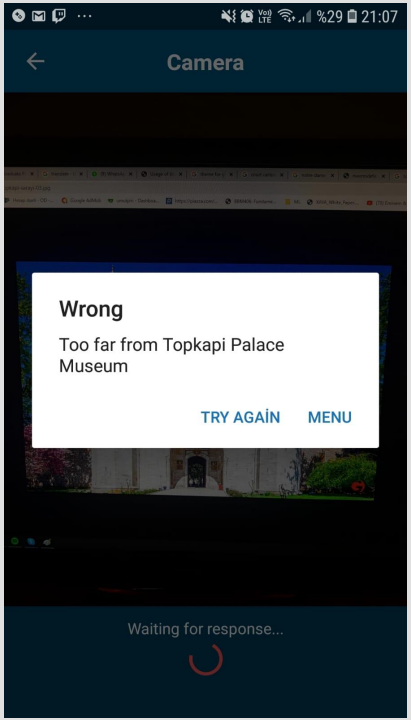
- Verify where you are by taking photos.





Travel and Win (cont.)

- The system will be aware of where the photo was taken with GPS.
- The user must be within 500 meters range of the place.



Travel and Win (cont.)

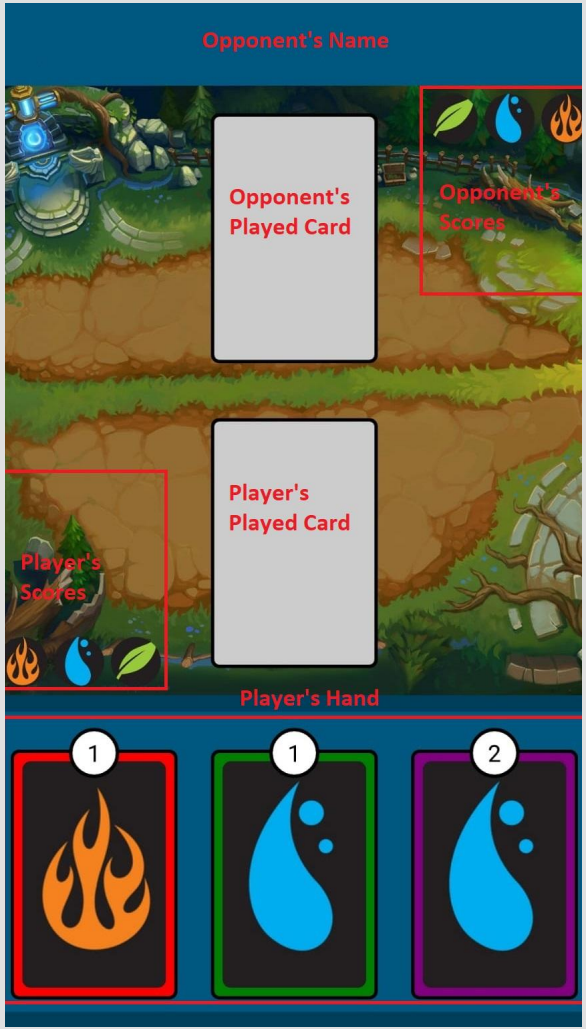
- If the photo is not confirmed by the system, the user can put the photo to vote.
- If more than half approves, voting will be accepted.

Mechanics of The Game

- 1 versus 1 online, turn based, card battle strategy game.
- There is a button to enter the queue to match with other players.
- The game finishes when a player achieves a triplet (vertical or horizontal three points on the scoreboard).

Mechanics of The Game (cont.)

- In game arena, there are two spots to play cards on, one belongs to opponent and the other belongs to the player. Scores are colored points above the elements.
- Both players have three cards in their hands and after every round both players draw a card from their decks.

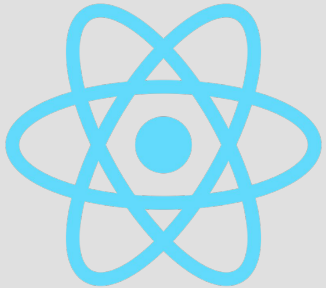


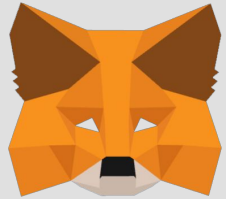
Shop

- Players can buy new cards from shop.

Deck

- Players can see their own decks from this page.
- Players can combine their own cards to upgrade and strengthen their decks.
- The two cards must be the same element, color and level to combine.

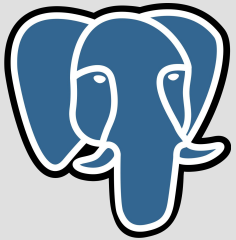




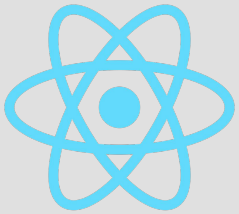
Ganache

Technologies

Express



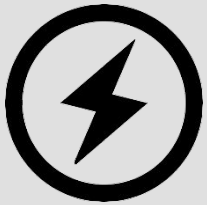
Frontend



React Native is used to develop mobile application to both iOS and Android platforms.

Since we don’t have any Mac computer, it is impossible to build an application for iOS platform. However, Expo architecture lets us to build applications without any Apple product.

Socket and Rest

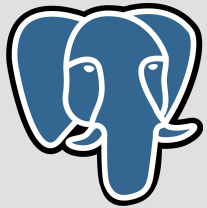


Socket.io is used in game connections. Because, it provides better performance and speed for intensive event flow. Since there are many events in a game.

For the connections other than game events, REST architecture is used.

Backend Server

Express is a minimal and flexible Node.js web application framework.
Express is used because of the speed, flexibility and compatibility.



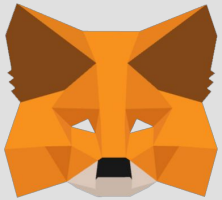
PostgresSQL is used to store and retrieve the data.

Cloud

Heroku is a container-based cloud platform as a service (PaaS). Heroku is used to deploy and manage the Node.js server and database server.

Google Cloud Storage is used to store the photos of the places that users sent. Google Cloud Vision API is used to process the images.

Blockchain



Metamask is a bridge that allows us to visit the blockchain network in our browser.

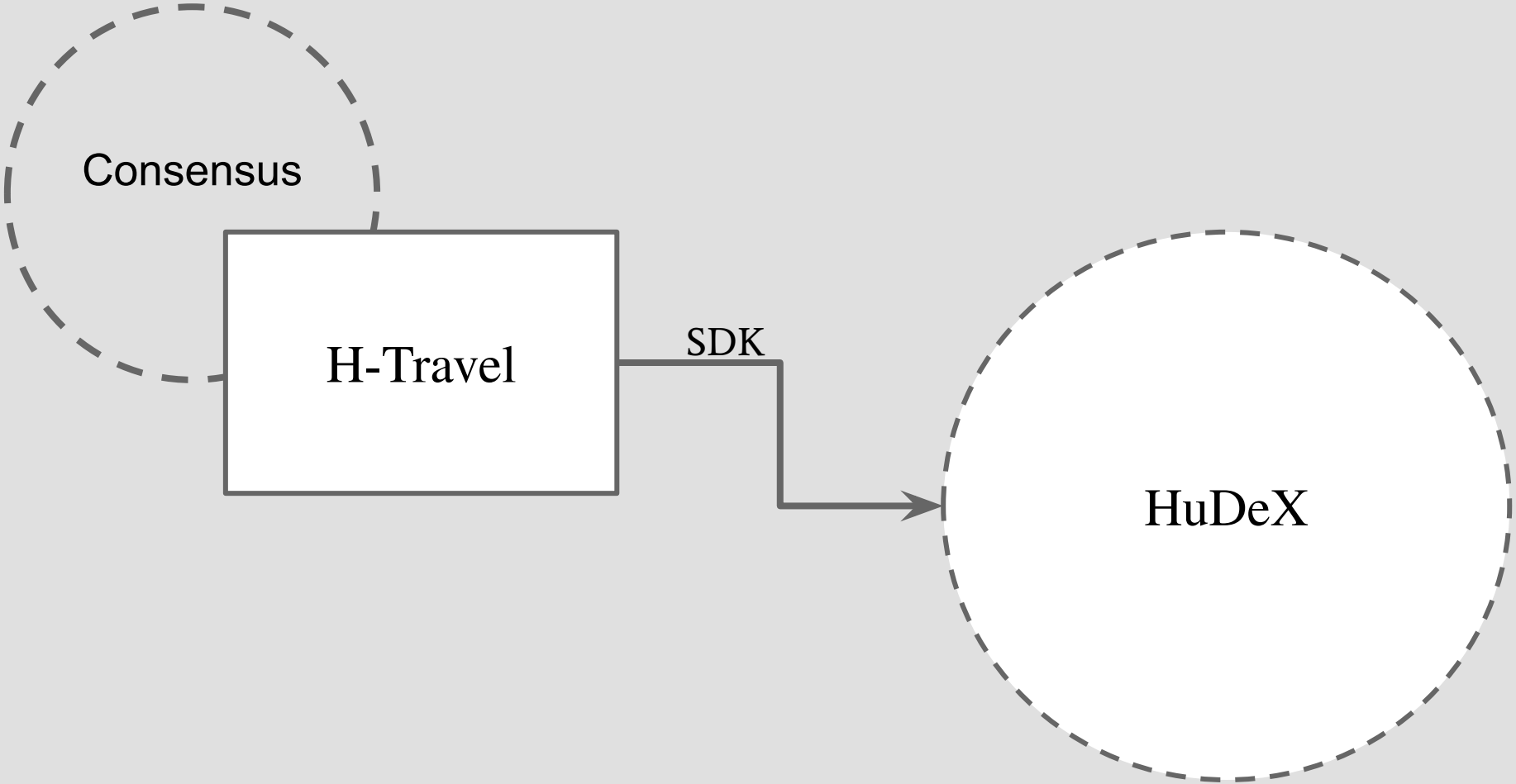
Ethereum is a blockchain based distributed computing platform and operating system featuring smart contract functionality. We have write a smart contract to control the voting system.

Blockchain (cont.)

Ganache

Ganache allows us to create personal ethereum blockchain which we have used to deploy smart contract and run tests.

Truffle is a development environment. We used Truffle to compile and migrate the smart contract.


Consensus
H-Travel
SDK
HuDeX

Work Done by Each Team Member

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- Implemented the game, deck and camera screens.
- Integrated and tested the Google's and Heroku's services.
- Implemented the backend server with NodeJS and deployed on Heroku.
- Wrote Smart Contract and connected it to React Native with web3 library.
- Set up the connections of Socket and Rest between frontend and backend.

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- Designed Interfaces
- Implemented the login, register, gallery and shop screens.
- Decided which technologies use and implement transactions.
- Research on blockchain procedure
- Frontend - backend connection is tested.

Engineering Management

- We have used Github to develop collaboratively.
  https://github.com/umutpiri/design-project
- Weekly meetings were held on Skype.

Photo
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War of Independence Museum 1.TBMM
clideo.com