

Share-park Decentralized Parking Management

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Blockchain & Cryptocurrency
CSED 490U

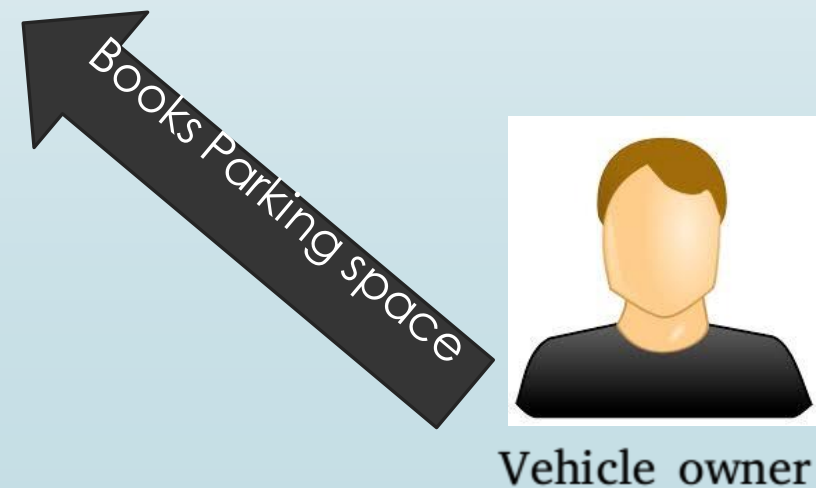
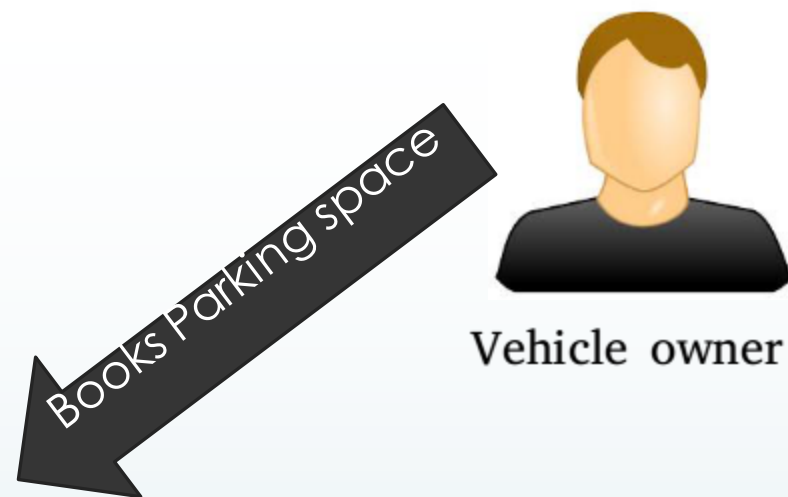
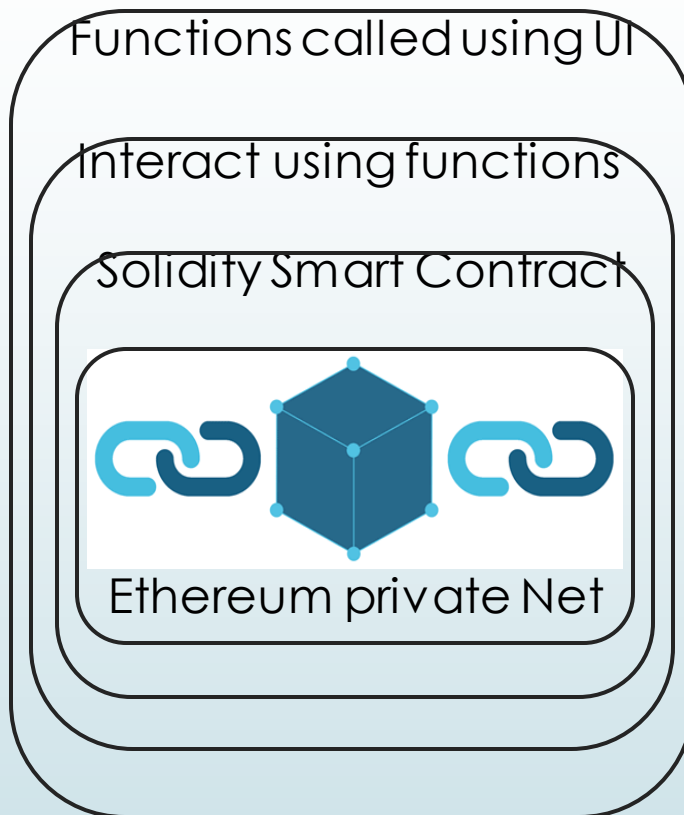


Overview



Lists Parking Spaces

Parking Space owner



Interface Design

- Limiting Access by Registration
- Signup for new users
- Password protected login Based System

Home Property Owner Login Property User Login

Welcome
owner

User Name

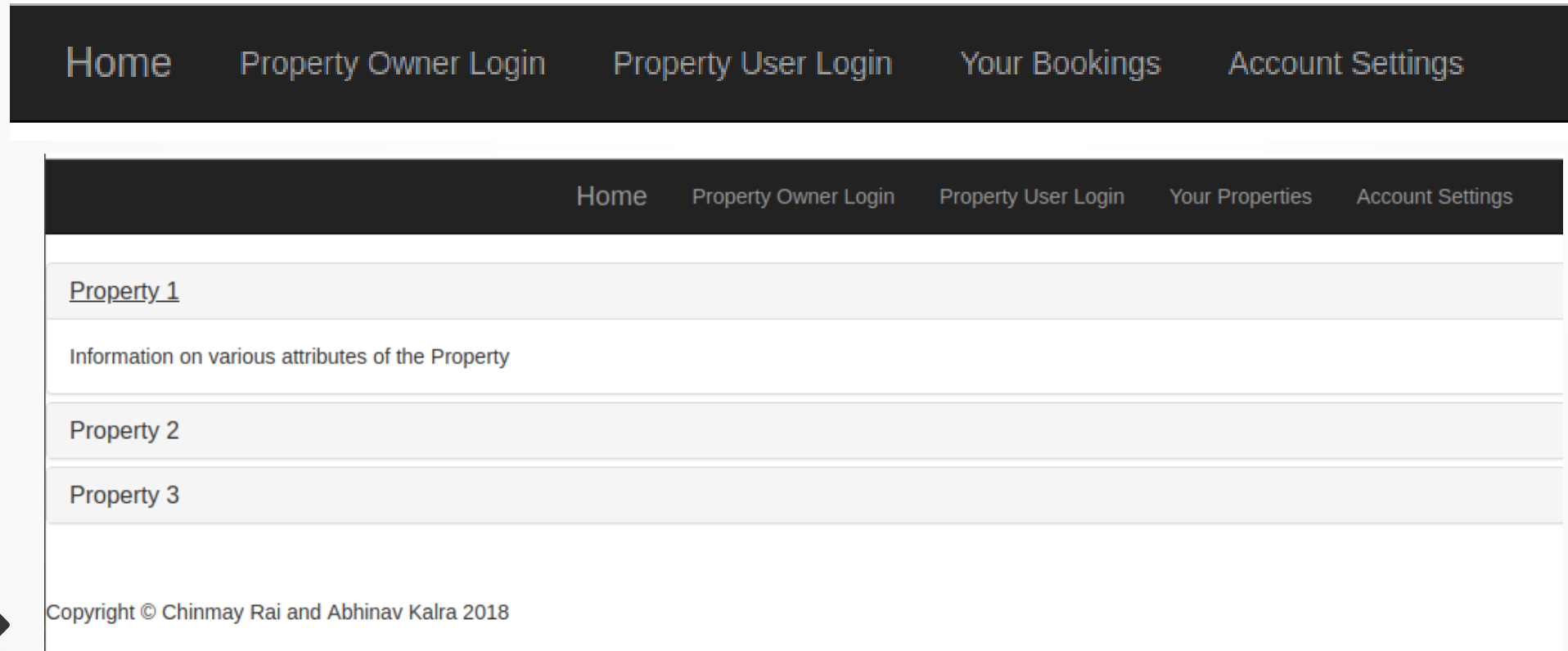
Password

Login

New User? Create New Account: [SignUp](#)

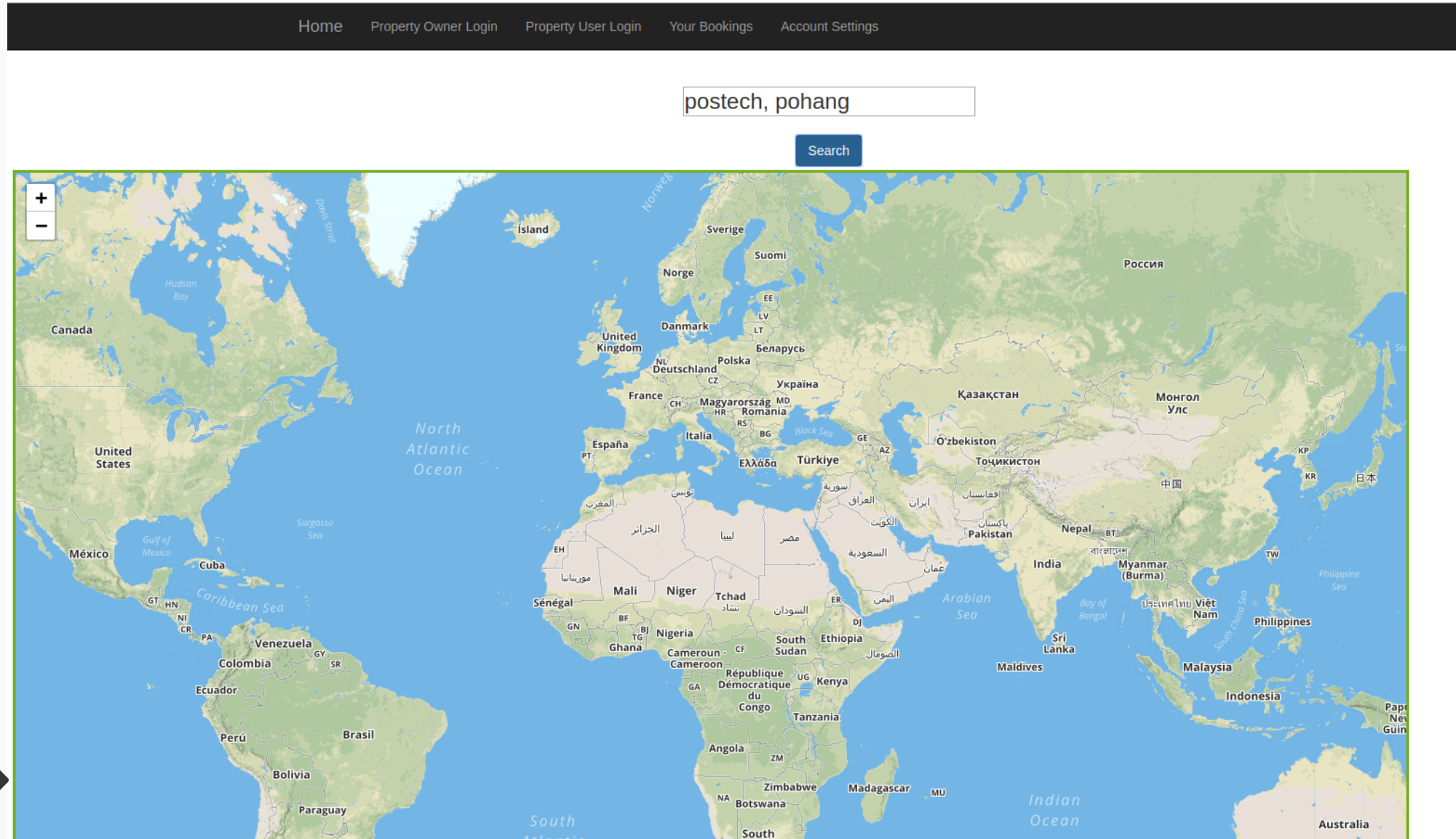
Interface Design

- Different ends for Property Owner and user
- Each window has corresponding functions.



Interface Design

- Integrated Map for convenience of user along with Search Bar



Button Click to Contract Function Invocation

- Contract function are invoked by Clicking Buttons
- Html Buttons invoke JavaScript functions
- JavaScript Function Invokes web3.contract functions

```
function send_transaction(){  
    web3.eth.personal.unlockWallet(investor,pwd,30)  
    contract.fund()  
    window.location.href = "Investor.html";  
}
```

```
<div class="row">  
    <h3 align="center">  
        <button type="button" onclick="send_transaction();">Fund</button>  
    </h3>  
</div>
```

Smart Contract

Programing Language – **Solidity**

Stakeholders :

1. **Renter** – Find and Book lot
2. **Parking Lot Owner** – Manage plots



Data Structure and Variables

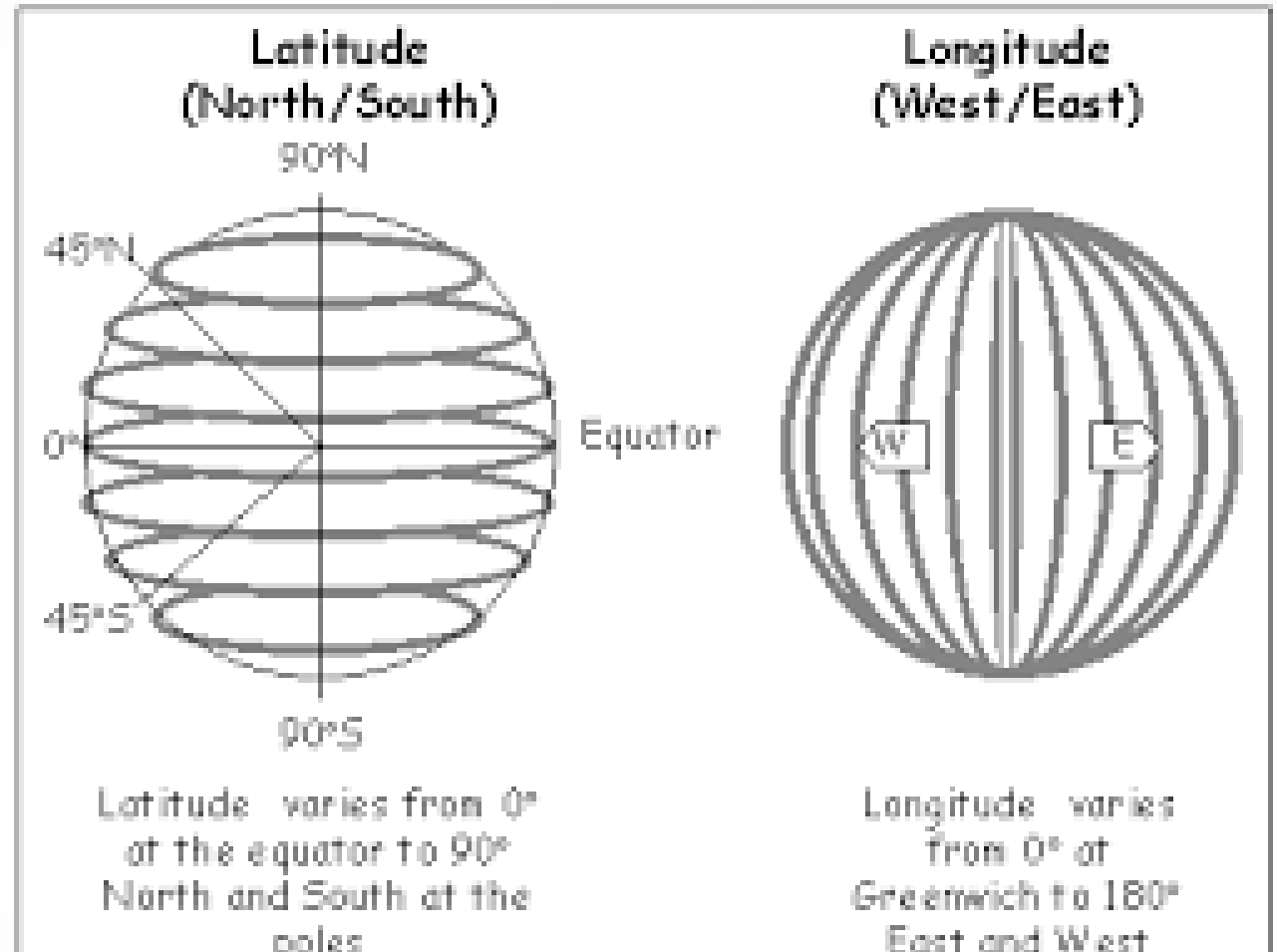
Geographic co-ordinate system to denote **location**

Struct **Location**

Components -

1. Degrees – uint
2. Minutes – uint
3. Flag – boolean

Flag helps to denote North / South or East / West



Data Structures and Variables



Struct **parkingSpot**

Components -

1. Serial Number – uint
2. Status – boolean
3. Account Address Renter – address

Struct **parkingLot**

Components -

1. Account Address Owner - address
2. Latitude – struct Location
3. Longitude – struct Location
3. A list of parking Spots
4. Price of each spot - uint

The entire parking lot data base is an array of struct **parkingLot**



Functions

nearLots – returns list of nearby parking lots

reserveSpot – reserves the parking spot selected

abandonSpot – abandons the parking lot and pays the calculated rent

addRentOutSpot – enables owner to rent out their land as a parking spot

Fin.



**Thanks for
listening**

Any Questions ?

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