**CCMP 603 - Introduction to Smart Contracts**

**Lottery Smart Contract Project**

**Deployment on Truffle &React**

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1. **Truffle Deployment:**
   1. Initial in directory by command: **truffle init**
   2. Create project: **truffle create contract Lottery**. This action will be created the structure with file **Lottery.sol =>** Modify code of smart contracts in this file.

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* 1. Create Migration by command: **truffle create migrations Lottery**

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* 1. Deploy project by command**: truffle deploy**

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* 1. Check contract on Ganache:

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1. **React Deployment:**
2. Initial project by command**: npx create-react-app Lottery**
3. Go to source directory by command: **cd <path>**
4. Copy file **Lottery.json** from directory of below Truffle project: **../build/contracts** to directory of React project : **../src**
5. Modify UI in file: **../src/App.js**
6. Install web3 package by command**: npm install web3**
7. Install **npm** package by command: **npm install**
8. Deploy project by command: **npm start**

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1. **UI:**
   1. **Owner role:** the address will be showed in UI. It allows owner can pick a Winner manually by the button in below image.

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* 1. **Participant role:** you only can deposit amount money to participate in this game. The history will be showed below.

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1. **Testing:**
   1. **Deposit ETH in participant wallet:** participant can choose how much ETH will be deposited for this game. Every transaction will be recorded and showed in list. A participant is able to deposit many times as much as they can, no limitation.

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* 1. **Pick a Winner from Owner role:** by clicking on button “ Pick a winner”, the random winner will be chosen base on participants list. Auto transfer function is activated as well.

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* 1. **Auto transfer to Winner’s wallet:** Eth will be transferred to Winner’s wallet automatically after the owner clicked “ Pick a winner”. In this case, 4 transactions have been recorded with total 17 ETH. This account has deposited 10 Eth, then their wallet increased to 107 Eth (origin was 100 Eth).

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