

Blockchain for Industrial Engineers: Decentralized Application Development

**บล็อกเชนสำหรับวิศวกรอุตสาหกรรม: การพัฒนาแอปพลิเคชันแบบ
กระจายศูนย์**

Auction (Continued)

Cancel the auction

Withdrawal pattern

- You should not send back back the fund to users that did not win the auction.
 - Use **withdrawal pattern** instead.
- You should send ETH to a user who requests it.
- This avoids **re-entrance attacks**.

Re-entrance attack

- Reentrancy attack in Solidity repeatedly withdraws funds from a smart contract and transfers them to an unauthorized contract until the funds have been exhausted.

Contract factory pattern

- Instead of directly creating instances of objects
 - you have a single object (the factory) that does it for you.
- Benefits
 - Deployments of multiple contracts with high gas-efficiency
 - Keep track of all deployed contracts
 - Save gas on multiple contract deployments