

SEC-205: Distributed Ledger and Blockchain

Lab/Practical Session 4: Inheritance in Solidity and Contract-to-Contract Interactions

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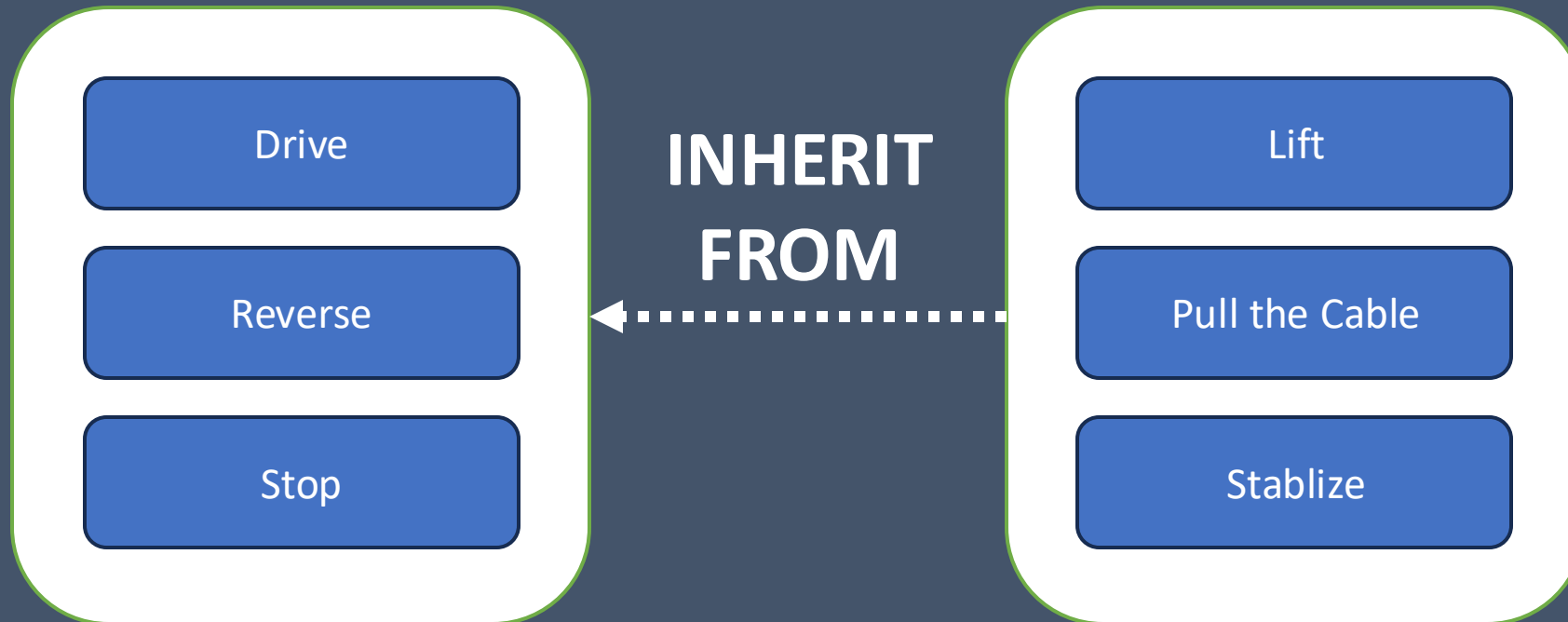
Inheritance in Solidity



Car



Crane Truck



Inheritance in Solidity

- We typically use the **is** keyword to inherit.

```
// SPDX-License-Identifier: MIT

pragma solidity ^0.8.26;

// Parent Contract
contract Parent {
    uint256 public parentData;
    ...
}

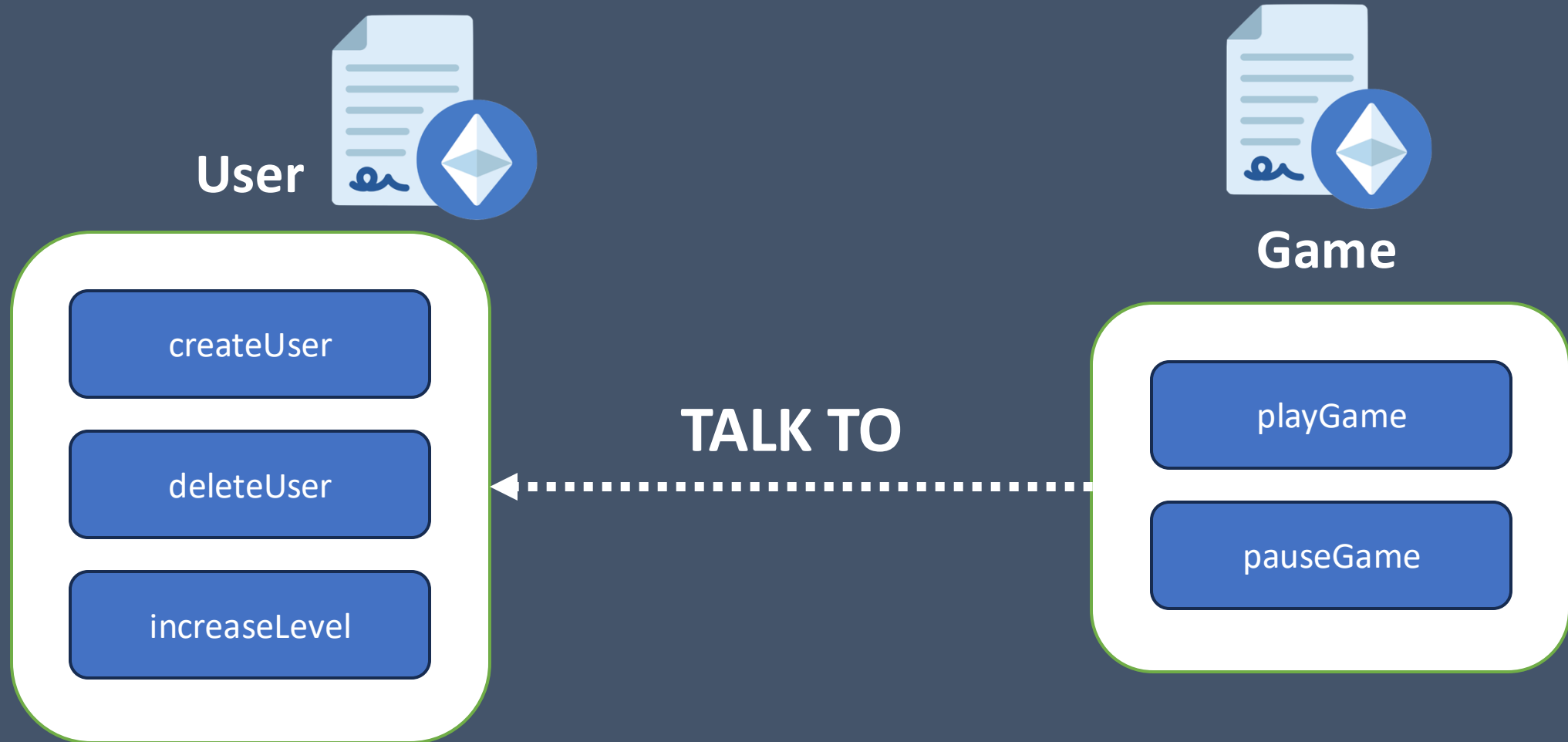
// Child Contract inheriting from Parent
contract Child is Parent {
    uint256 public childData;

    constructor (uint256 _childData){
        childData = _childData;
    }
}
```

Inheritance Exercise

Implement an inheritance of Multi-Player Game Smart Contract from Solo-Player Game Smart Contract.

Contract Interaction



Contract Interaction



```
// SPDX-License-Identifier: MIT

pragma solidity ^0.8.26;

contract ContractA {
    uint256 public data;

    function setData (uint256 _data) external {
        data = _data;
    }
}
```

```
// SPDX-License-Identifier: MIT

pragma solidity ^0.8.26;

interface IContractA {
    function setData (uint256 _data) external;
    function data() external view returns (uint256);
}

contract ContractB {
    IContractA public contractA;

    constructor (address _contractAddress) {
        contractA = IContractA(_contractAddress);
    }

    function setDataInContractA (uint256 _data) external {
        contractA.setData(_data);
    }
}
```

Contract Interaction (Exercise)

Using Contract Interaction to Make Player and Game Smart Contracts to Work Together.

Add User Profile Feature to our Twitter Smart Contract

Using Contract Interaction to Connect User Contract with Twitter Contract.

End of the Lab!



Please feel free to ask any questions.

If you need further discussion, please contact me:

- Email me at charnon@cmkl.ac.th
- Appoint me for 1-on-1 discussion during the office hours.