

# SEC-205: Distributed Ledger and Blockchain

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

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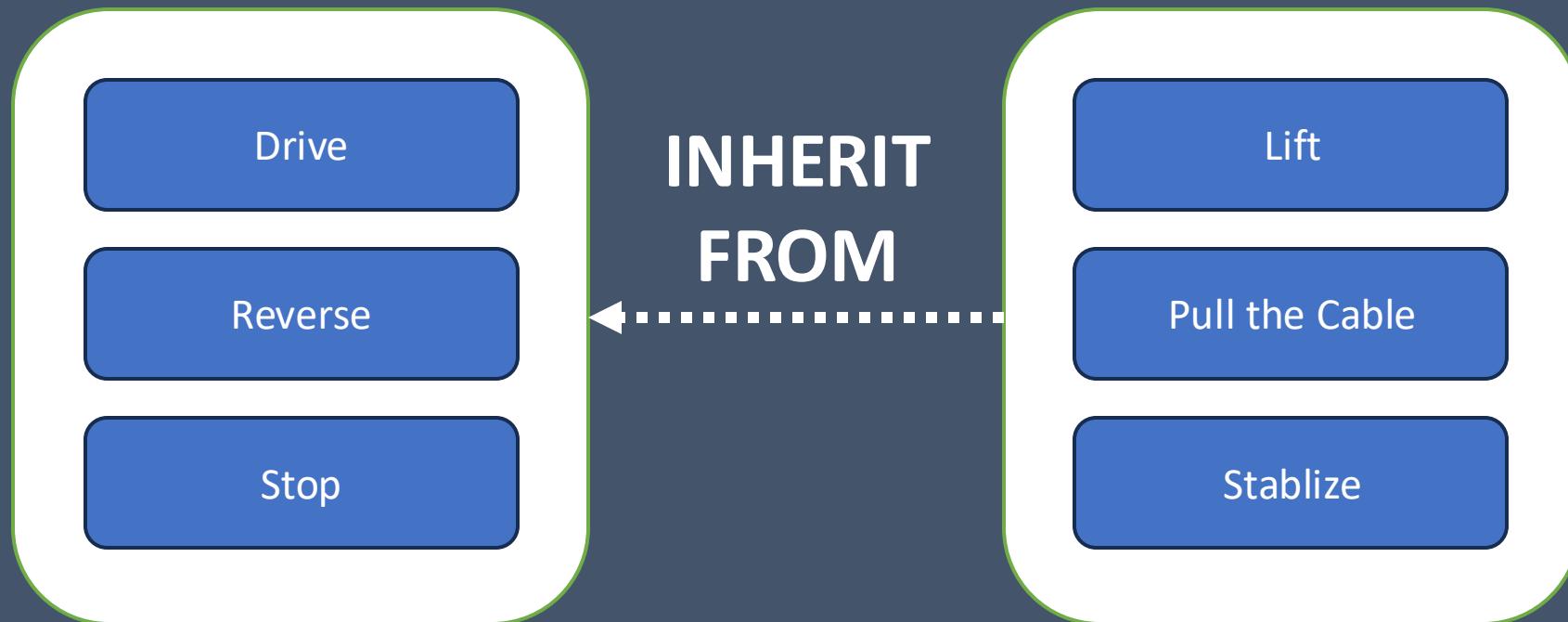
# Inheritance in Solidity



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;
    ...
}

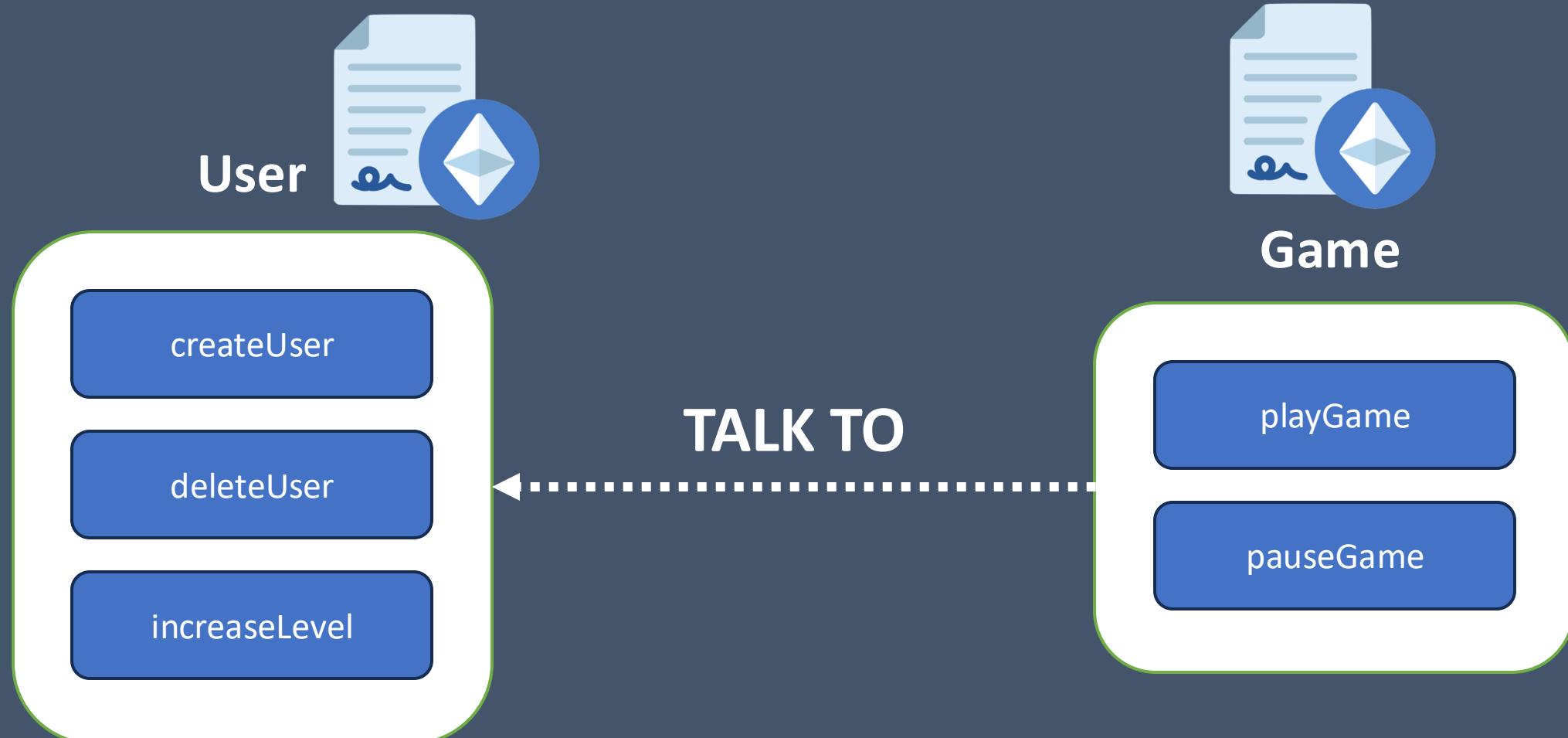
// Child Contract inheriting from Parent
contract Child is Parent {
    uint256 public childData;

    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](mailto:charnon@cmkl.ac.th)
- Appoint me for 1-on-1 discussion during the office hours.