Inheritance

Abstract Contracts

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Learn how to make contracts that must be inherited by another contract.

Abstract contracts can't exist on their own. Their functionality can only be utilized by a contract that inherits from them. In this lesson, you'll learn how to create an abstract contract.

Objectives

By the end of this lesson you should be able to:

- Use the virtual, override, and abstract keywords to create and use an abstract contract

Abstract Contracts

Continue with your `Inheritance.sol` file. Add `ContractD` as an `abstract contract`. Add a `virtual` function called `whoAreYou` function, but do **not** add any implementation for that function.

Reveal code

Inheriting from an Abstract Function

Update `ContractA` to inherit from `ContractD`.

You'll get a slightly confusing error that `ContractA` needs to be marked as `abstract`. Doing so is **not** the correct fix.

Exercise

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```
from solidity:
```

```
Note: Missing implementation:
 --> contracts/Inheritance.sol:6:5:
  |
6 |     function whoAreYou() public virtual view returns (string memory);
  |     ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
```

The clue for the correct solution is further down: `Note: Missing implementation:`

Only `abstract` contracts can declare functions that are not implemented. To fix this, provide an `override` implementation for `whoAreYou` in `ContractA`:

Reveal code

Conclusion

In this lesson, you've learned how to implement and inherit from an abstract contract.

Exercise

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