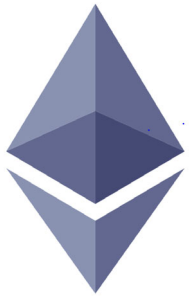
Introduction to Solidity: Coding Ethereum Smart Contracts



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Session Two Scope

- **Scope**

Progressive exercises to reinforce session one knowledge and slowly build in complexity

- **What you will know**

  Comments, variables, a function with and without parameters, a while loop, a setter method, and a getter method

- **Next Steps: Session Three**

  Using session two knowledge we will do more difficult exercises and begin working on a script for an ERC20 token

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Agenda

- Session Two Prerequisites
- Recap Exercises
- While Loop
- First Application with Remix
- Updating your First Application with Remix
- Appendix: Additional Resources
- Appendix: Operators
- Solution Set

Session Two

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Session Two Prerequisites

- Google Chrome
- Remix - https://remix.ethereum.org/

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Recap Exercises

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Exercise A

Sample Syntax:

```
pragma solidity 0.6.4;
contract Contractname{
}
```

Create a contract shell based on the notes thus far. Use pragma solidity 0.6.4.

(Activity Length ~3 minutes)

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Exercise B

Sample Syntax:

```
pragma solidity 0.6.4;
contract Contractname{
        /* Insert Comment */
        datatype declaration scope variable_a = value;
        datatype declaration scope variable_b = value;
}
```

In your contract shell from Exercise A store two unsigned state integer variables and create a comment called “Hello World”.

Declare one variable “Public” and one “Internal”.

(Activity Length ~5 minutes)

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Exercise C

Sample Syntax:

```
pragma solidity 0.6.4;
contract Contractname {
    // Insert Comment;
    datatype declaration scope variable_a = value;
    datatype declaration scope variable_b = value;
    function functionName() scope returns(datatype){
        datatype declaration return_variable = value;
        return return_variable;
    }
}
```

Create a function in your contract from Exercise A. Leave the function without parameters, make it public, and add a return value.

(Activity Length ~5 minutes)

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Appendix:
Additional Learning Resources

- *Crypto Zombies Solidity Tutorial - https://cryptozombies.io/*
- *Full YouTube Tutorial - https://www.youtube.com/watch?v=ipwxYa-F1uY*
- *Mastering Ethereum: Building Smart Contracts and DApps 1st Edition, by Andreas M. Antonop*
  https://www.amazon.com/Mastering-Ethereum-Building-Smart-Contracts/dp/1491971940

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Appendix: Operators

Label	Operators
Addition	+
Subtraction	-
Multiplication	*
Division	/
Modulus	%
Increment	++
Decrement	--
Equal	==
Not Equal	!=
Greater Than	>
Less Than	<
Greater Than or Equal To	>=
Less Than or Equal To	<=
Logical (AND)	&&
Logical (OR)	||
Logical (NOT)	!
Simple Assignment	=
Add and Assignment	+=
Subtract and Assignment	-=
Multiply and Assignment	*=
Divide and Assignment	/=
Modules and Assignment	%=
Conditional Operator	?

Solution Set

Exercise A

```
pragma solidity 0.6.4;
contract kamy {
}
```

Exercise B

```
pragma solidity 0.6.4;
contract kamy {
    //Hello World;
    uint public number_a = 10;
    uint internal number_b =
20;
}
```

Exercise C

```
pragma solidity 0.6.4;
contract kamy {
    //Hello World;
    uint public number_a = 10;
    uint internal number_b =
20;
    function party() public
view returns(uint){
        uint c = 30;
        return c;
    }
}
```