Solidity



Solidity is a contract-oriented, high-level language whose syntax is similar to that of JavaScript and it is designed to target the Ethereum Virtual Machine (EVM).

Solidity is statically typed, supports inheritance, libraries and complex user-defined types among other features.

As you will see, it is possible to create contracts for voting, crowdfunding, blind auctions, multisignature wallets and more.

• Note

The best way to try out Solidity right now is using Remix (it can take a while to load, please be patient).

Useful links

- Ethereum
- Changelog
- Story Backlog
- Source Code
- Ethereum Stackexchange Gitter Chat

Available Solidity Integrations

Remix

Browser-based IDE with integrated compiler and Solidity runtime environment without server-side components.

• Ethereum Studio

Specialized web IDE that also provides shell access to a complete Ethereum environment.

IntelliJ IDEA plugin

Visual Studio Extension

Solidity plugin for IntelliJ IDEA (and all other JetBrains IDEs)

Solidity syntax highlighting for SublimeText editor.

Solidity plugin for Microsoft Visual Studio that includes the Solidity compiler.

Package for SublimeText — Solidity language syntax

Etheratom

Plugin for the Atom editor that features syntax highlighting, compilation and a runtime environment (Backend node & VM compatible).

Plugin for the Atom editor that provides Solidity linting.

Atom Solidity Linter

• Atom Solium Linter

Configurable Solidty linter for Atom using Solium as a base.

A commandline linter for Solidity which strictly follows the rules prescribed by the Solidity Style Guide.

Solium

 Visual Studio Code extension Solidity plugin for Microsoft Visual Studio Code that includes syntax highlighting and the

Solidity compiler.

Emacs Solidity

• Vim Solidity

Plugin for the Emacs editor providing syntax highlighting and compilation error reporting.

• Vim Syntastic

Plugin for the Vim editor providing syntax highlighting.

Plugin for the Vim editor providing compile checking.

Discontinued:

Mix IDE

Solidity Tools

Qt based IDE for designing, debugging and testing solidity smart contracts.

Dapp

Build tool, package manager, and deployment assistant for Solidity.

Try Solidity instantly with a command-line Solidity console.

Solidity REPL

solgraph Visualize Solidity control flow and highlight potential security vulnerabilities.

evmdis

EVM Disassembler that performs static analysis on the bytecode to provide a higher level of abstraction than raw EVM operations.

Doxity

Documentation Generator for Solidity. **Third-Party Solidity Parsers and Grammars**

• solidity-parser Solidity parser for JavaScript

• Solidity Grammar for ANTLR 4 Solidity grammar for the ANTLR 4 parser generator

Language Documentation

See also Russian version (русский перевод).

On the next pages, we will first see a simple smart contract written in Solidity followed by the

basics about blockchains and the Ethereum Virtual Machine.

The next section will explain several features of Solidity by giving useful example contracts Remember that you can always try out the contracts in your browser!

If you still have questions, you can try searching or asking on the Ethereum Stackexchange site, or come to our gitter channel. Ideas for improving Solidity or this documentation are always welcome!

The last and most extensive section will cover all aspects of Solidity in depth.

Contents

• Introduction to Smart Contracts A Simple Smart Contract

Blockchain Basics • The Ethereum Virtual Machine Installing Solidity

Keyword Index, Search Page

- Versioning Remix npm / Node.js
- Docker Binary Packages Building from Source
- The version string in detail
- Important information about versioning Solidity by Example
 - Voting Blind Auction
- Safe Remote Purchase Micropayment Channel Solidity in Depth

Structure of a Contract

Layout of a Solidity Source File

 Units and Globally Available Variables Expressions and Control Structures Contracts

Types

- Solidity Assembly Miscellaneous • Security Considerations
 - Pitfalls Recommendations
- Formal Verification Using the compiler
 - Using the Commandline Compiler Compiler Input and Output JSON Description
- Application Binary Interface Specification Basic Design
 - Argument Encoding Types

Function Selector

- Formal Specification of the Encoding Function Selector and Argument Encoding
- Examples Use of Dynamic Types Events
- JSON • Style Guide
 - Introduction Code Layout
- Naming Conventions Common Patterns

Withdrawal from Contracts

- Restricting Access State Machine
- List of Known Bugs Contributing
 - How to Report Issues Workflow for Pull Requests
- Running the compiler tests Whiskers • Frequently Asked Questions
- Basic Questions Advanced Questions