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title: Ethereum for Python Developers description: Learn how to develop for Ethereum using python-based projects and tooling lang: en incomplete: true

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Learn how to develop for Ethereum using Python-based projects and tooling

Use Ethereum to create decentralized applications (or "dapps") that utilize the benefits of cryptocurrency and blockchain technology. These dapps can be trustworthy, meaning that once they are deployed to Ethereum, they will always run as programmed. They can control digital assets in order to create new kinds of financial applications. They can be decentralized, meaning that no single entity or person controls them and are nearly impossible to censor.

Getting started with smart contracts and the Solidity language {#getting-started-with-smart-contracts-and-solidity}

Take your first steps to integrating Python with Ethereum

Need a more basic primer first? Check outethereum.org/learn or ethereum.org/developers.

- Blockchain Explained
- Understanding Smart Contracts
- Write your First Smart Contract
- Learn How to Compile and Deploy Solidity

Beginner articles {#beginner-articles}

- A (Python) Developer's Guide to Ethereum
- The state of Python in blockchain 2023 report
- An Introduction to Smart Contracts with Vyper
- Deploy your own ERC20 Token with Python and Brownie
- How to develop Ethereum contract using Python Flask?
- Intro to Web3.py · Ethereum For Python Developers
- How to call a Smart Contract function using Python and web3.py

Intermediate articles {#intermediate-articles}

- Dapp Development for Python Programmers
- Creating a Python Ethereum Interface: Part 1
- Ethereum Smart Contracts in Python: a comprehensive(ish) guide
- Using Brownie and Python to deploy Smart Contracts
- Creating NFTs on OpenSea with Brownie

Advanced use patterns {#advanced-use-patterns}

- Compiling, deploying and calling Ethereum smartcontract using Python
- Analyze Solidity Smart Contracts with Slither
- Blockchain Fintech Tutorial: Lending and Borrowing With Python

Python projects and tools {#python-projects-and-tools}

Active: {#active}

- Web3.py - *Python library for interacting with Ethereum*
- Vyper - *Pythonic Smart Contract Language for the EVM*
- Ape - *The smart contract development tool for Pythonistas, Data Scientists, and Security Professionals*
- Brownie - *Python framework for deploying, testing and interacting with Ethereum smart contracts*

- py-evm - *implementation of the Ethereum Virtual Machine*
- eth-tester - *tools for testing Ethereum-based applications*
- eth-utils - *utility functions for working with Ethereum related codebases*
- py-solc-x - *Python wrapper around the solc solidity compiler with 0.5.x support*
- py-wasm - *Python implementation of the web assembly interpreter*
- pydevp2p - *implementation of the Ethereum P2P stack*
- pymaker - *Python API for Maker contracts*
- siwe - *Sign in with Ethereum (siwe) for Python*
- Web3 DeFi for Ethereum integrations - *A Python package with ready integrations for ERC-20, Uniswap and other popular projects*

Archived / No longer maintained: {#archived--no-longer-maintained}

- Trinity - *Ethereum Python client*
- Mamba - *framework to write, compile, and deploy smart contracts written in Vyper language*

Looking for more resources? Check outethereum.org/developers.

Projects using Python tooling {#projects-using-python-tooling}

The following Ethereum-based projects use tools mentioned on this page. The related open-source repositories serve as a good reference for example code and best practices.

- Yearn Finance and Yearn Vault Contracts repository
- Curve and Curve smart contracts repository
- BadgerDAO and smart contracts using Brownie toolchain
- Sushi uses Python in managing and deploying their vesting contracts
- Alpha Finance, of Alpha Homora fame, usesBrownie to test and deploy smart contracts

Python Community discussion {#python-community-contributors}

- Ethereum Python Community Discord for Web3.py and other Python framework discussion
- Vyper Discord for Vyper smart contract programming discussion

Other aggregated lists {#other-aggregated-lists}

The Vyper wiki has an incredible list of resources for Vyper