



Data Analysis on Blockchain

---- take Uniswap as example

Background: about Uniswap v2

- ❑ $xy = K$, AMM to achieve DEX functionality.
- ❑ Transaction fees together with impermanent loss for engaged LP.
- ❑ Slippage for trader.

Tasks

- ☐ Fix certain trading pair, say, WETH-USDT
- ☐ Within certain time, happening of trading events
- ☐ Within same time, happening of LP activities
- ☐ How about their transaction income? and IL? (DIY)

Core Part for Source Code

<https://github.com/Uniswap/v2-core>

01. How to locate Swap activities:

Open `UniswapV2Pair.sol` -> Search for `"swap("` -> find relevant codes

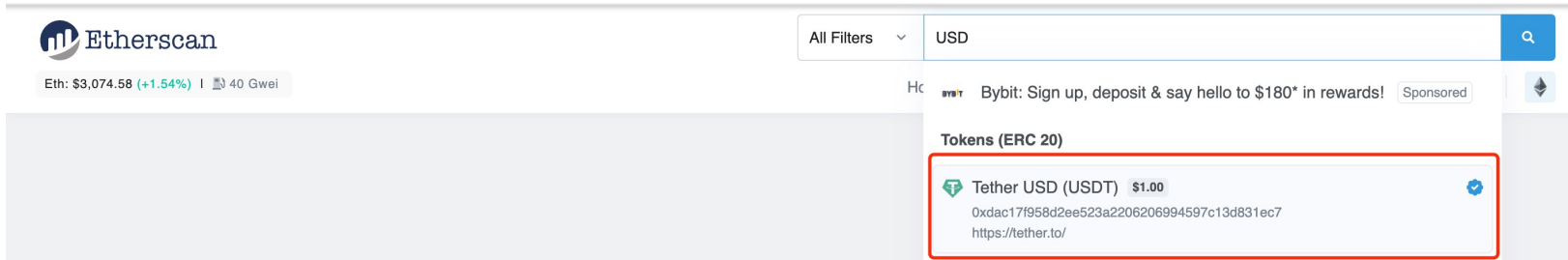
02. How to get pair information

Open `UniswapV2Factory.sol` -> Search for `"Pair"` (or just go through it)-> find relevant codes


Relevant Smart Contracts Address

WETH, USDT, UniswapFactory, UniswapPair

<https://etherscan.io/>



The screenshot shows the Etherscan website interface. At the top left is the Etherscan logo. Below it, the current Ethereum price is displayed as \$3,074.58 with a green upward arrow indicating a 1.54% increase, and the total gas used is 40 Gwei. On the right side, there is a search bar with 'USD' entered and a search icon. Below the search bar, there is a section titled 'Tokens (ERC 20)'. The first token listed is 'Tether USD (USDT)' with a value of '\$1.00'. This token entry is highlighted with a red rectangular box. Below the token name, the contract address '0xdac17f958d2ee523a2206206994597c13d831ec7' and the website 'https://tether.to/' are listed. A blue checkmark icon is visible in the top right corner of the token entry box.

Tokens (ERC 20)	
 Tether USD (USDT)	\$1.00
0xdac17f958d2ee523a2206206994597c13d831ec7	
https://tether.to/	

Basic Steps

1. Ready address info, know about smart contracts
2. Initialize web3 and smart contracts obj
3. Fetch events logs, parse useful information
4. Data analysis and visualization

Reference

- Uniswap V2 <https://docs.uniswap.org/protocol/V2/reference/smart-contracts>
- Codes today
<https://cointelegraph.com/news/what-is-etherscan-and-how-does-it-work>
- PyEcharts
<https://pyecharts.org/>