**Arbitrage Bot - Notes & Links**

Contents

[Tasks: 3](#_Toc167978156)

[Tools: 3](#_Toc167978157)

[Get Trading Pairs using TheGraph: 4](#_Toc167978158)

[Other DEX's on Polygon: 5](#_Toc167978159)

[Quickswap: 5](#_Toc167978160)

[Uniswap: 5](#_Toc167978161)

[Sushiswap: 5](#_Toc167978162)

[Apeswap: 6](#_Toc167978163)

[Get price for specific trading pair (SC call): 7](#_Toc167978164)

[Swapping Between Tokens 8](#_Toc167978165)

[Setup Test Projects: 9](#_Toc167978166)

[MongoDB: 9](#_Toc167978167)

[Projects on Uniswap: 10](#_Toc167978168)

**Test-Matic Account MM:**

Addr: 0x9A2Aa18bBAAA7CA86EAE3B8edDd8090Ab6D0b8Ca

**TXN:**

<https://polygonscan.com/tx/0xd8736c841ba6afdb842aa771ef2d9e829d2491c36abae1a762aa0654785907fc>

<https://polygonscan.com/tx/0xd075f79731fb2b79bef47544ad23235d56f55d338d84a6e1b7d6164833fa32b6>

**Router Matic:**

<https://polygonscan.com/address/0xa5e0829caced8ffdd4de3c43696c57f7d7a678ff#code>

**Test URL's:**

chrome://inspect/#devices

https://quickswap.exchange/#/swap

https://app.sushi.com/en/swap

https://app.uniswap.org/#/swap?chain=polygon

<https://polygonscan.com/txs?a=0x9A2Aa18bBAAA7CA86EAE3B8edDd8090Ab6D0b8Ca>

https://docs.uniswap.org/sdk/guides/creating-a-pool

https://docs.uniswap.org/sdk/guides/creating-a-trade

https://docs.uniswap.org/sdk/guides/fetching-prices

https://docs.uniswap.org/sdk/guides/auto-router

# Tasks:

* Top DEX's on Polygon & BSC
* Get all trading pairs (plus liquidity, price…) for DEX => GraphQL
* C# Task => scan DEX's all 5 minutes => add trading pairs (USDC, Tether, ETH) & arbitrage possibilities to DB
* WEB3 bot that executes trades

# Tools:

Eth unit converter: <https://eth-converter.com/>

Hex converter: <https://www.rapidtables.com/convert/number/hex-to-decimal.html>

QS: <https://quickswap.exchange/#/swap>

US: <https://app.uniswap.org/#/swap>

Manage Node.js versions with nudist: <https://github.com/nullivex/nodist>

nodist local 16.13.0 => install locally (in the selected folder) the specified node version

nodist => list all installed node versions

# Get Trading Pairs using TheGraph:

Search for graphs: There are 2 types : ETH & Non-ETH: <https://thegraph.com/explorer> && <https://thegraph.com/hosted-service/>

On Github, we see SAMEPSI as moderator and in package.json, we can see the following path: sameepsi/quickswap05 => on thegrapgh.com, search for the same subgraphs (everything from SAMEEPSI):

<https://thegraph.com/hosted-service/subgraph/sameepsi/quickswap05>

<https://thegraph.com/hosted-service/subgraph/sameepsi/quickswap06>

Sapmle Queries: <https://veridelisi.medium.com/the-graph-and-uniswap-v2-queries-73260ebb1a30>

Graph API: <https://thegraph.com/docs/en/developer/graphql-api/>

Query from JS: <https://thegraph.com/docs/en/developer/querying-from-your-app/>

Graph & Node: <https://learn.vonage.com/blog/2020/03/12/using-apollo-to-query-graphql-from-node-js-dr/>

Query hosted service: <https://thegraph.com/docs/en/hosted-service/query-hosted-service/>

QS Subgraph: <https://thegraph.com/explorer/subgraph/sameepsi/quickswap07>

<https://github.com/QuickSwap/QuickSwap-subgraph>

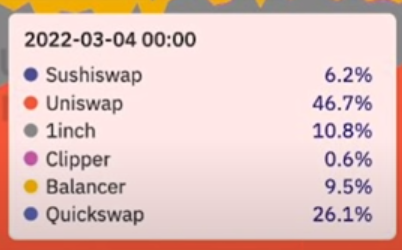
QS Factory: <https://polygonscan.com/address/0x5757371414417b8c6caad45baef941abc7d3ab32>

Get Graph data with C#: <https://medium.com/coinmonks/get-uniswap-data-using-the-graph-79d0c6f7b9f2>

# Other DEX's on Polygon:

<https://www.coingecko.com/en/categories/polygon-ecosystem>

Polygon Marketshare:



## Quickswap:

<https://quickswap.exchange/#/swap>

<https://docs.uniswap.org/>

SDK NPM: <https://www.npmjs.com/package/quickswap-sdk?activeTab=versions>

Github: <https://github.com/orgs/QuickSwap/repositories>

Subgraph: <https://thegraph.com/hosted-service/subgraph/sameepsi/quickswap05>

<https://thegraph.com/hosted-service/subgraph/sameepsi/quickswap06>

Router Contract: 0xa5E0829CaCEd8fFDD4De3c43696c57F7D7A678ff

Analytics: <https://info.quickswap.exchange/#/pairs>

## Uniswap:

<https://app.uniswap.org/#/swap>

<https://docs.uniswap.org/>

SDK NPM: <https://www.npmjs.com/package/@uniswap/v3-sdk>

Github: <https://github.com/Uniswap>

<https://github.com/Uniswap/v3-periphery/blob/main/deploys.md>

Subgraph: <https://thegraph.com/hosted-service/subgraph/ianlapham/uniswap-v3-polygon>

Router Contract: 0xe592427a0aece92de3edee1f18e0157c05861564

Analytics: <https://info.uniswap.org/#/polygon/pools>

## Sushiswap:

<https://app.sushi.com/en/swap>

<https://dev.sushi.com/sushiswap/contracts>

SDK NPM: <https://www.npmjs.com/package/@sushiswap/sdk>

Github: <https://github.com/orgs/sushiswap/repositories>

<https://github.com/sushiswap/sushiswap-sdk>

Subgraph: <https://thegraph.com/hosted-service/subgraph/sushiswap/matic-exchange>

<https://thegraph.com/hosted-service/subgraph/chrisjess/sushiswap-matic-exchange>

Router Contract: 0x1b02da8cb0d097eb8d57a175b88c7d8b47997506

Analytics: <https://app.sushi.com/analytics/pairs>

## Apeswap:

<https://apeswap.finance/swap>

<https://apeswap.gitbook.io/apeswap-finance/where-dev/smart-contracts>

SDK NPM: <https://github.com/ApeSwapFinance/apeswap-sdk/packages/616246>

Github: <https://github.com/orgs/ApeSwapFinance/repositories>

Subgraph: <https://thegraph.com/hosted-service/subgraph/gvladika/simplefi-apeswap-polygon>

Router Contract: 0xC0788A3aD43d79aa53B09c2EaCc313A787d1d607

Analytics: <https://info.apeswap.finance/pairs>

??? <https://github.com/ApeSwapFinance/apeswap-sdk>

# Get price for specific trading pair (SC call):

<https://stackoverflow.com/questions/66944736/fetch-proper-execution-price-from-uniswap-v2>

<https://stackoverflow.com/questions/64703389/uniswap-how-to-read-token-price-with-api>

<https://github.com/thanhnguyennguyen/uniswap-price>

<https://stackoverflow.com/questions/64703389/uniswap-how-to-read-token-price-with-api>

<https://ethereum.stackexchange.com/questions/91441/how-can-you-get-the-price-of-token-on-uniswap-using-solidity>

US - Swap: <https://app.uniswap.org/#/swap>

US - Docs: <https://docs.uniswap.org/>

US - get price data: <https://docs.uniswap.org/sdk/2.0.0/guides/pricing>

US - Fetcher: <https://docs.uniswap.org/sdk/2.0.0/reference/fetcher>

US - Trade: <https://docs.uniswap.org/sdk/2.0.0/reference/trade>

US - do a swap: <https://docs.uniswap.org/protocol/guides/swaps/single-swaps>

US - other docs: <https://docs.uniswap.org/protocol/reference/smart-contracts>

US v2 Router: <https://docs.uniswap.org/protocol/V2/reference/smart-contracts/router-02#swapexactethfortokens>

US - Github: <https://github.com/orgs/Uniswap/repositories>

Specify own provider: <https://github.com/ethers-io/ethers.js/issues/1151>

<https://coderrocketfuel.com/article/configure-infura-with-web3-js-and-node-js>

<https://blog.polygon.technology/infura-integrates-with-polygon-to-advance-web-3-0/>

**NPM Packages:**

NPM - US SDK: <https://www.npmjs.com/package/@uniswap/sdk>

# Swapping Between Tokens

US Contracts: <https://cryptomarketpool.com/how-do-the-uniswap-solidity-smart-contracts-work/>

<https://docs.uniswap.org/sdk/2.0.0/guides/trading>

<https://docs.uniswap.org/protocol/guides/swaps/single-swaps>

<https://stackoverflow.com/questions/64627133/using-uniswap-sdk-gives-me-this-error-resolver-or-addr-is-not-configured-for-en>

<https://ethereum.stackexchange.com/questions/97788/invalid-bignumber-value-uniswap-and-ethers-js/107698>

Swap with SC: <https://cryptomarketpool.com/how-to-swap-tokens-on-uniswap-using-a-smart-contract/>

Simple Uniswp SDK: <https://github.com/uniswap-integration/simple-uniswap-sdk>

QS Swap: <https://ethereum.stackexchange.com/questions/104180/quickswap-router-function-error-when-liquidity-is-added-on-wmatic-pair>

<https://stackoverflow.com/questions/70112336/swapexactethfortokens-keeps-failing>

<https://stackoverflow.com/questions/66037884/rinkeby-uniswap-swapexactethfortokens-fail-with-error-uniswapv2router-expire>

**Complete example, calling SC's using ethers**: <https://medium.com/coinmonks/hello-world-smart-contract-using-ethers-js-e33b5bf50c19>

Approve Token using web3: <https://ethereum.stackexchange.com/questions/91063/ierc20-approvespender-amount-thinks-the-owner-is-also-the-contract>

<https://ethereum.stackexchange.com/questions/107914/how-to-approve-swapexacttokensforeth-from-uniswaprouter-v2-before-invoking-it>

# Setup Test Projects:

npm i quickswap-sdk

npm i ethers

Update Node: <https://nodejs.org/en/download/current/>

Build simple Node app: <https://www.sitepoint.com/build-simple-beginner-app-node-bootstrap-mongodb/>

## MongoDB:

<https://www.prisma.io/dataguide/mongodb/setting-up-a-local-mongodb-database#setting-up-mongodb-on-windows>

<https://www.freecodecamp.org/news/learn-mongodb-a4ce205e7739/>

md \data\db

Start Server: cd C:\Program Files\MongoDB\Server\5.0\bin => mongod.exe

Connect to server: cd C:\Program Files\MongoDB\Server\5.0\bin => mongo.exe

**Uniswap GraphQL Data:**

https://uniswap.org/docs/v2/API/queries/

https://towardsdatascience.com/graphql-walkthrough-how-to-query-crypto-with-uniswap-defi-e0cbe2035290

https://ethereum.stackexchange.com/questions/93120/how-to-get-the-price-of-a-pair-using-only-its-symbol

https://medium.com/coinmonks/get-uniswap-data-using-the-graph-79d0c6f7b9f2

**Tools:**

<https://thegraph.com/docs/graphql-api#queries>

<https://thegraph.com/explorer/subgraph/uniswap/uniswap-v2>

<https://graphql.bitquery.io/ide>

<https://github.com/pancakeswap>

## Projects on Uniswap:

**Smart Contracts:**

V3-Core: <https://github.com/Uniswap/v3-core/tree/main/contracts/libraries>

V3-Periphery: <https://github.com/Uniswap/v3-periphery>

Swap Router: <https://github.com/Uniswap/swap-router-contracts/tree/main/contracts>

**SDK's:**

SDK-Core: https://github.com/Uniswap/sdk-core

V3-SDK: https://github.com/Uniswap/v3-sdk

Router-SDK: https://github.com/Uniswap/router-sdk

**Others:**

V3-Subgraph: https://github.com/Uniswap/v3-subgraph

Smart Order Router: https://github.com/Uniswap/smart-order-router