Research Group
Diginomics
Digitalization - Economy - Society
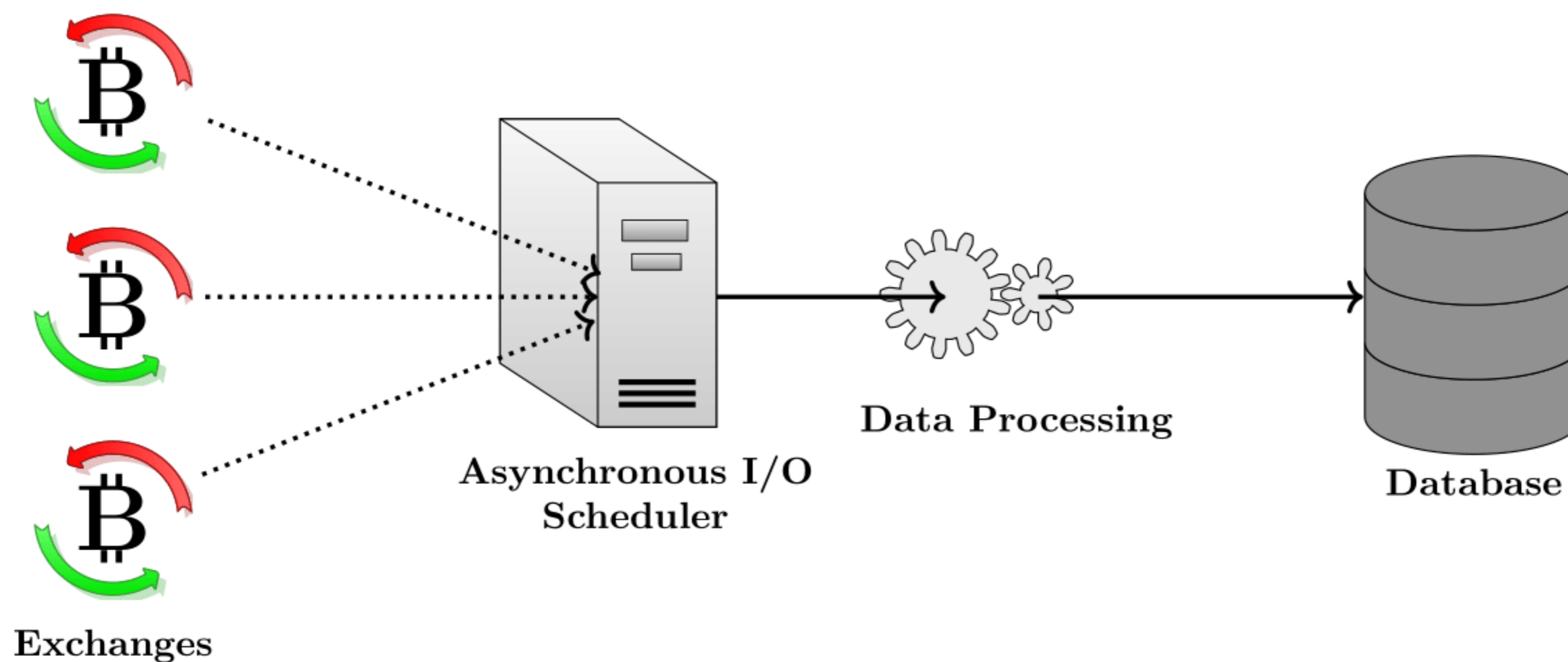
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Cryptocurrency Market–Data Collector

Open-Source Python Module

Overview diagram of the program. The database is a relational SQL-Database of choice (SQLite, MySQL, PostgreSQL). Requests and response processing are performed concurrently with the modules asyncio and aiohttp. To date, over 90 of the most liquid and popular exchanges are connected. For aggregated data and further API endpoints, established platforms like Coingecko or CryptoCompare are supported.

Source: own figure.

Path to Publication
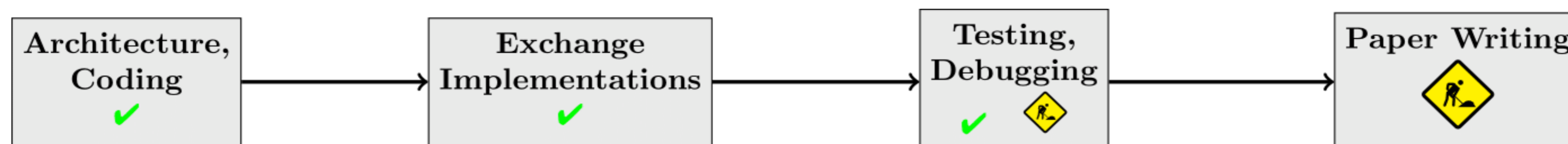
Project

Open-source project for free-of-charge and not aggregated cryptocurrency market data. The project exists as both, a GitHub repository for development and a Python module for quick installation with pip. The program is platform-independent and unit-tested. Data can be queried form any software able to establish SQL-connections or dumped into csv-files. The project comes with a standard GNU GPL-License (v. 3).

Exchanges and Data

We implement around 90 of the most liquid and popular exchanges worldwide, according to Coinmarketcap and Coingecko. Typically, exchanges offer API-endpoints for real-time data (tickers, trades, order-books) and historical-data (OHLC). To date, the program distinguishes between around 6000 currencies and 30.000 exchange currency-pairs. That covers 88% of Coinmarketcap and an predominant share of the liquid asset space [1].

Requests and Performance

The program, especially the requests, are performed concurrently using the packages asyncio [2] and aiohttp [3]. That ensures an efficient (re-)allocation of free or at the moment unused resources while remaining single-threaded. Predominate factors on the run-time are the request cross-section and the response time of exchanges. For specific configuration the program can reach tick-level.

Applications:

Possible Applications are:
- Studies on Market Efficiency
- Studies on Empirical Asset Pricing
- Profitability of Cryptocurrencies
- High-Frequency Examinations
- Market Manipulations and Frauds

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References
[1] ww.coinmarketcap.com; Visited: 18.01.2021
[2] https://pypi.org/project/asyncio/
[3] https://docs.aiohttp.org/en/stable/

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