DATA COLLECTION PLAN FOR SMART CONTRACT GOVERNED INITIAL COIN OFFERINGS

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The purpose of this technical specification is to lay out a detailed plan for collecting and consolidating data from multiple sources pertaining to Initial Coin Offerings (ICOs) governed by smart contracts enabled by blockchain technology. It also guides the construction of a PostgreSQL database that houses the structured data.

DATA SOURCE OVERVIEW

Data Source	Available Data	Purpose
icotracker.net: Aggregator of ICO campaigns	Whitepaper	▪ Business enabled by the ICO ▪ Key technology innovations ▪ Business roadmap ▪ Core team members
	Official social media	▪ Major events and announcements ▪ Community feedback ▪ CEO's social profile
	Official website	▪ Additional information and links
	ICO status	▪ Offered token ▪ ICO goal and current progress ▪ ICO time period
coinmarketcap.com: Aggregator of crypto-coins and tokens in the market	Coin official links	▪ Official website ▪ Announcement of the launch ▪ Source code ▪ Social media interactions ▪ Ranking and tags
	Blockchain explorer (more details below)	▪ Detailed transactions ▪ Transacting accounts ▪ Mining stats (e.g., miners, difficulties and rewards) ▪ Network stats (e.g., hash rates)
	Coin market historical data	▪ Daily price change and trading volume since the launch day
github.com: Opensource platform	Repositories	▪ Source code ▪ Branches ▪ Commit history ▪ Contributor stats
	Contributor profiles	▪ Contributor background ▪ Repositories ▪ Stared repositories

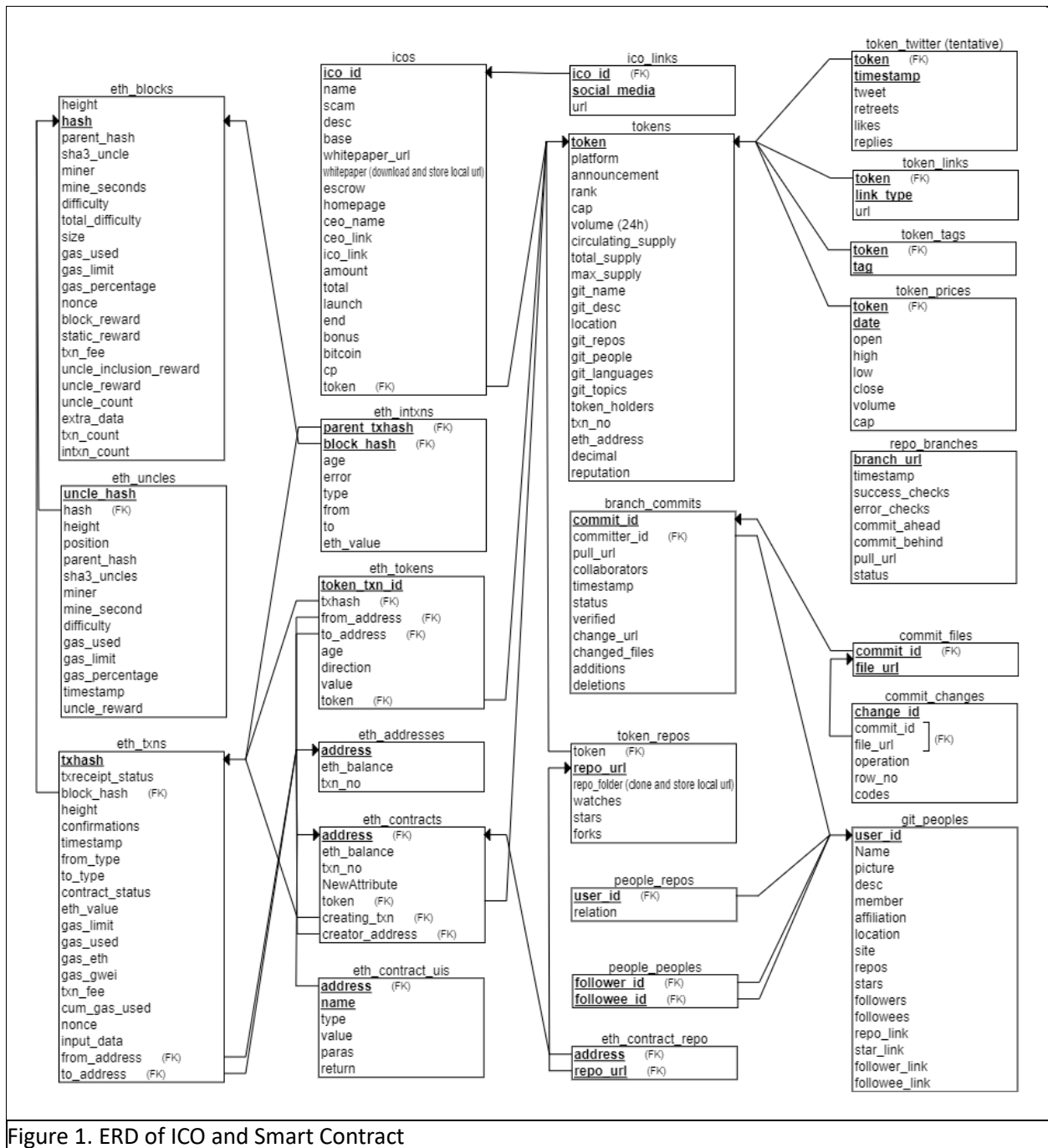|		▪ Followers and followees
etherscan.io: Blockchain explorer for Ethereum with smart contracts integrated	Blocks	▪ Block details ▪ Transaction details ▪ Mining stats ▪ Forks (Uncles)
	Addresses	▪ Address summary
	Contract Addresses	▪ Contract summary ▪ Internal transactions invoked by the contract ▪ Key functions and variables (contract reader) ▪ Contract source code (may not be crawlable)
	Tokens	▪ Token reputation ▪ Token market stats ▪ Official links and social media ▪ Token transfer history
	Network Stats	▪ Network hashrate (thermodynamic security)
blockchain.info: Blockchain explorer for Bitcoin	Blocks	▪ Block details ▪ Transaction details ▪ Mining stats ▪ Forks (Chains)
	Addresses	▪ Address details (via bitcoinwhoswho.com/address)

ERD OF ICO AND SMART CONTRACT

Figure 1. ERD of ICO and Smart Contract
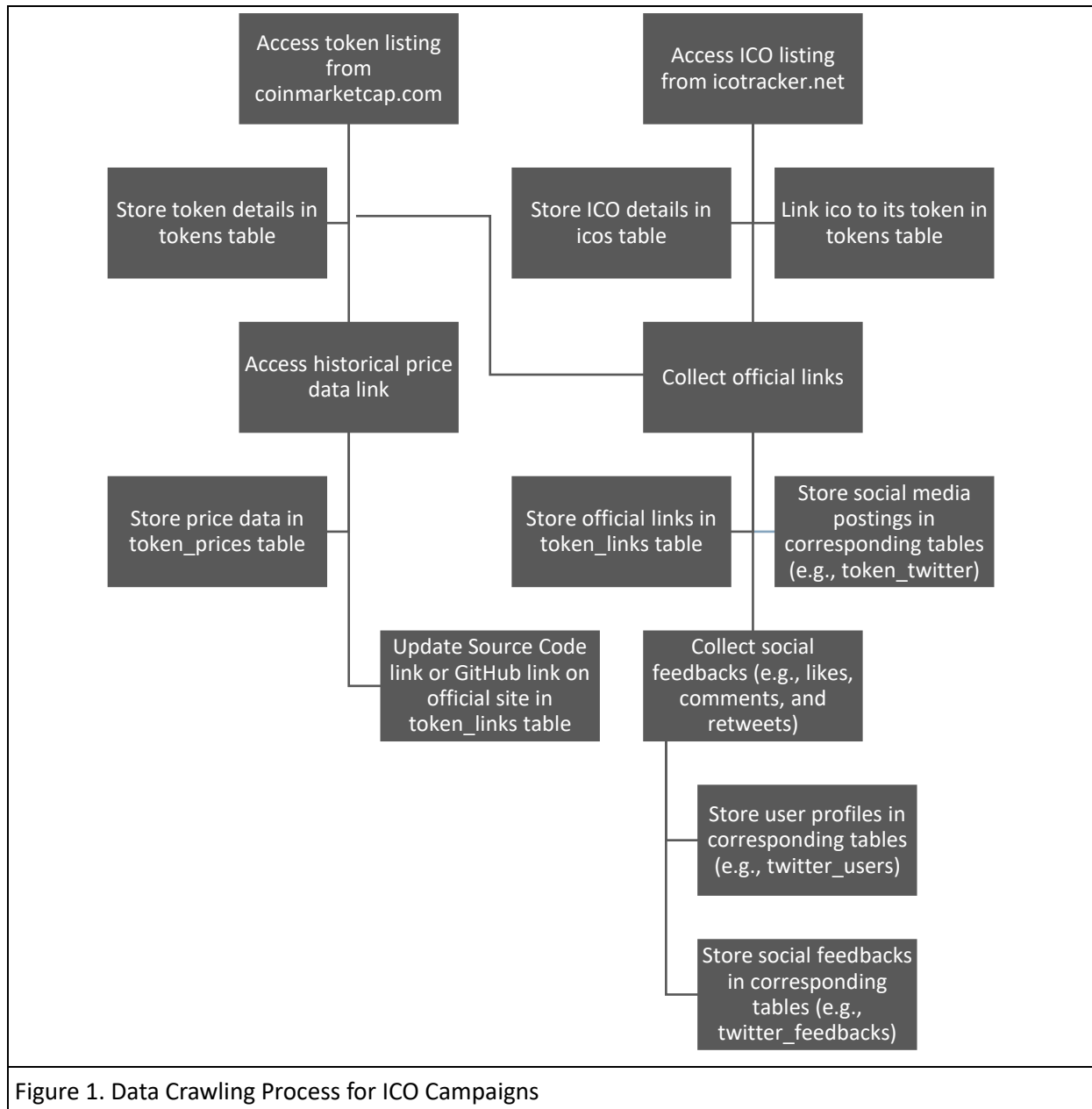
DATA CRAWLING PROCESS

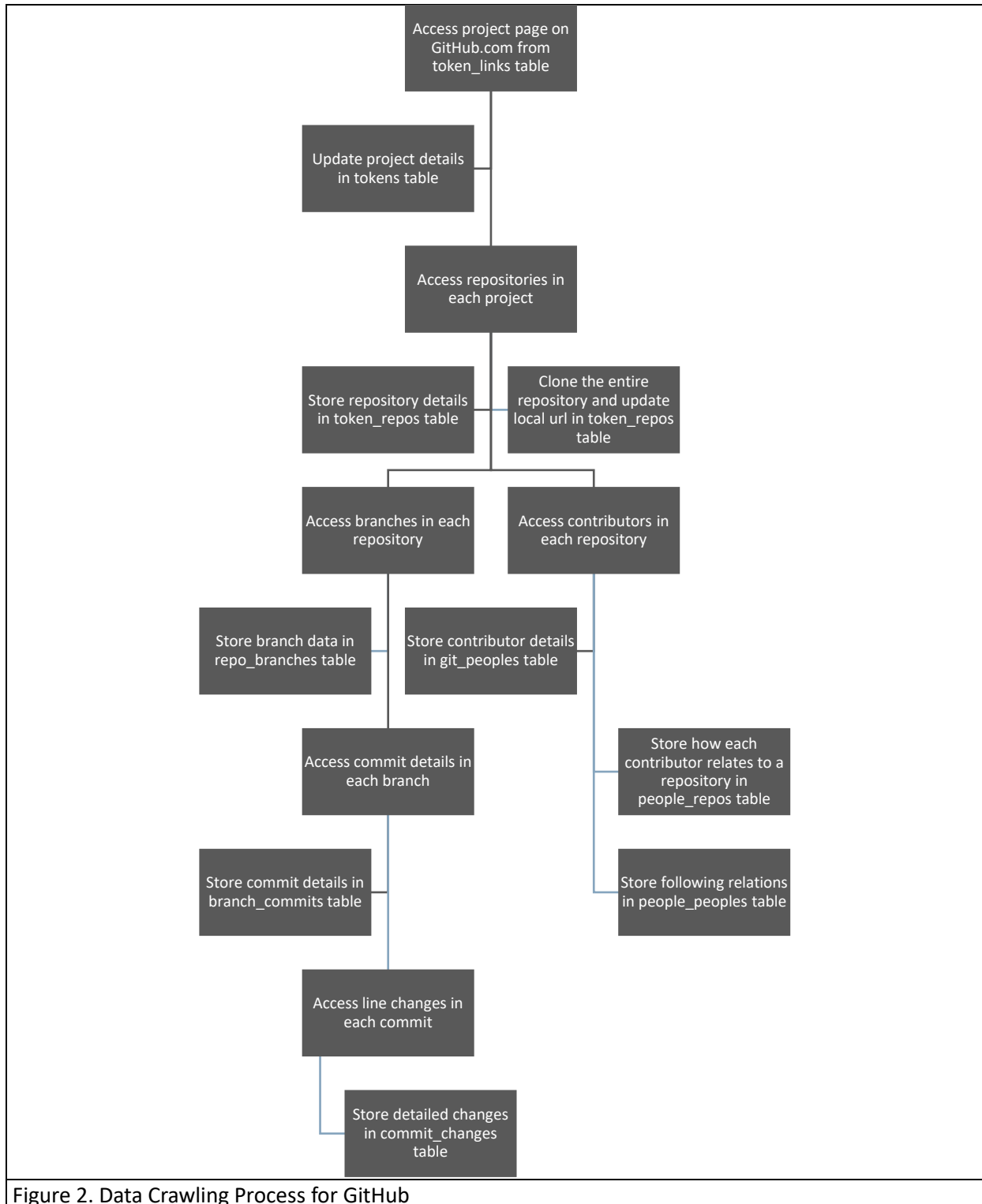Figure 1. Data Crawling Process for ICO Campaigns

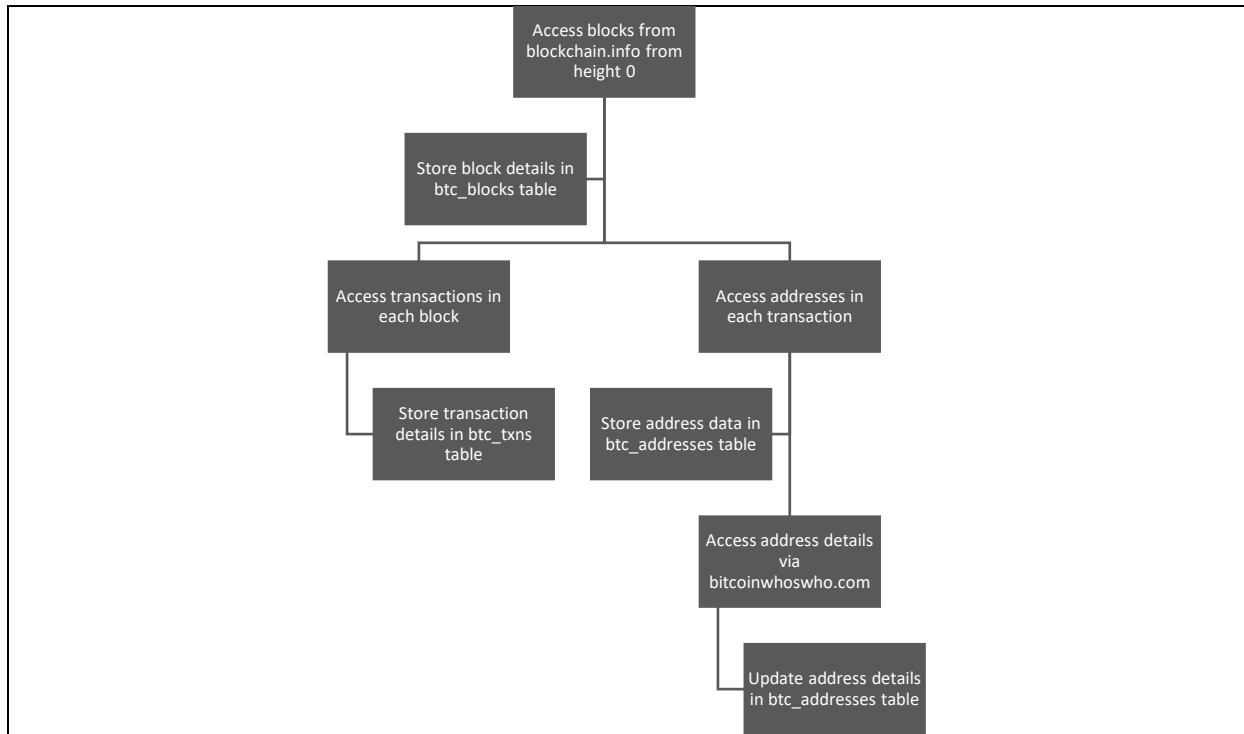Figure 2. Data Crawling Process for GitHub

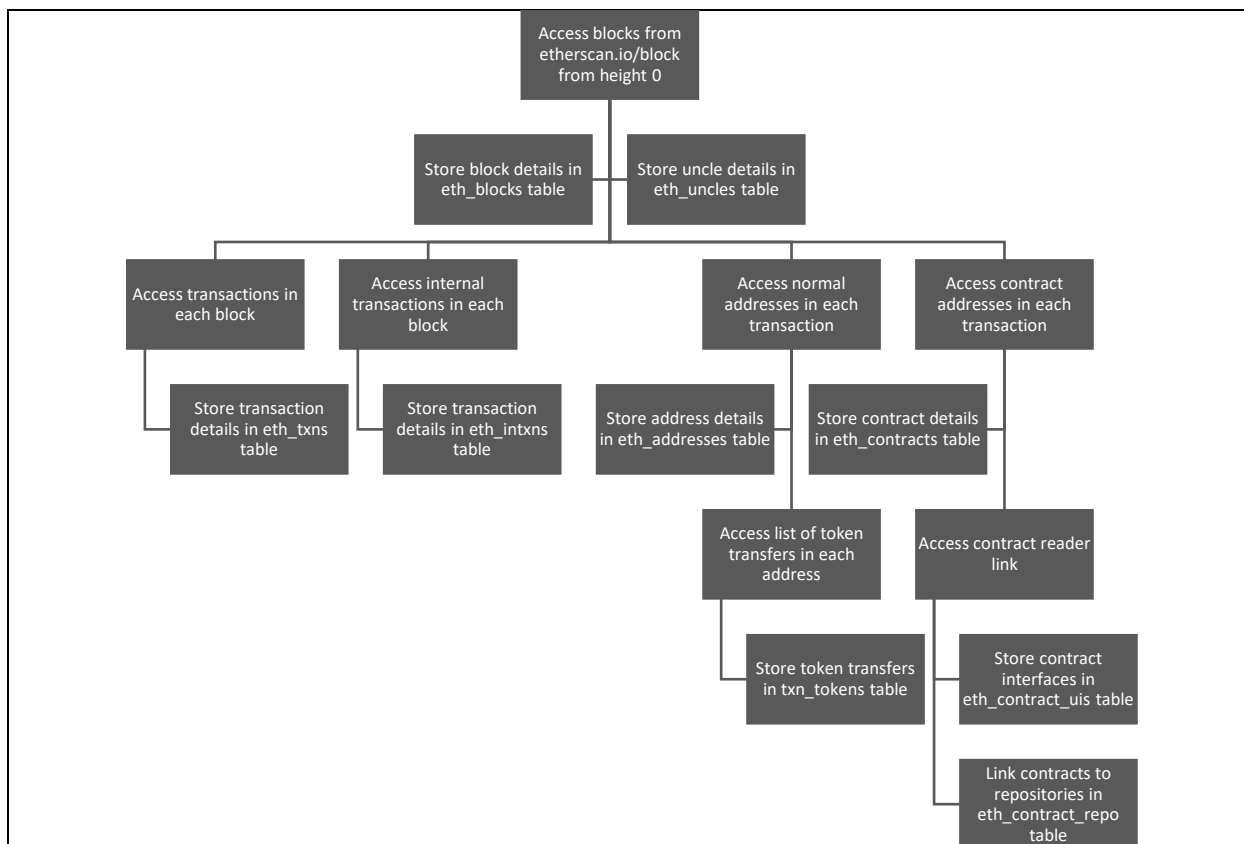Figure 3. Data Crawling Process for Blockchains (Bitcoin)

Figure 4. Data Crawling Process for Blockchains (Ethereum)

DELIVERABLES AND TIME SCHEDULE

The expected deliverables of this project include (1) a properly constructed **PostgreSQL database populated with data** gathered from all required data sources; and (2) **reusable scripts** for data crawling and database updating. Database construction as well as script writing and testing should be completed within **two weeks**.