



btctrackr : **Finding and Displaying** **Clusters in Bitcoin**

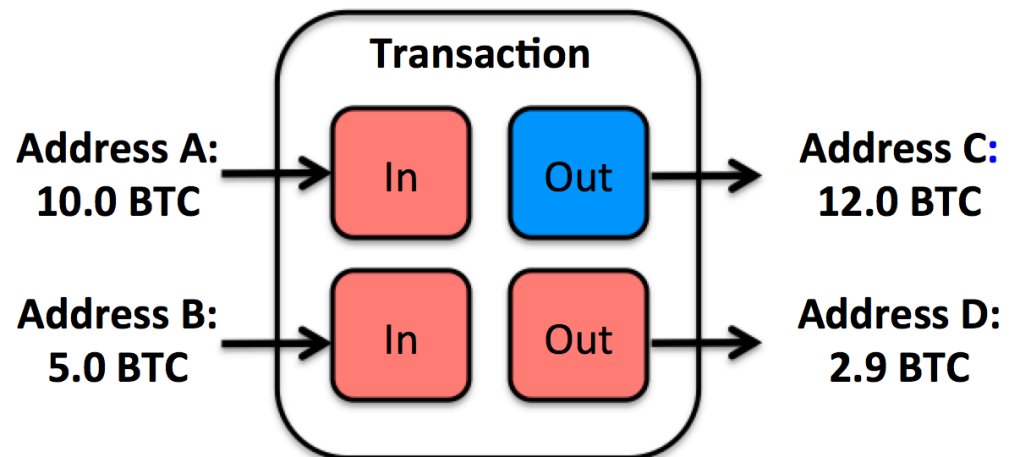
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Overview

- Motivation (Fistful of Bitcoins)
- Challenges and Goals
- btctrackr System
 - Parser
 - Database
 - Website
- Demonstration
- Evaluation
- Future Work

Motivation (Fistful of Bitcoins)

- Improve upon Existing Address Clustering
 - Heuristic 1 – All inputs
 - Heuristic 2 – Change Addresses
- Current Implementation
 - Need significant by hand cleaning
 - Not in real-time
- Znort Parser

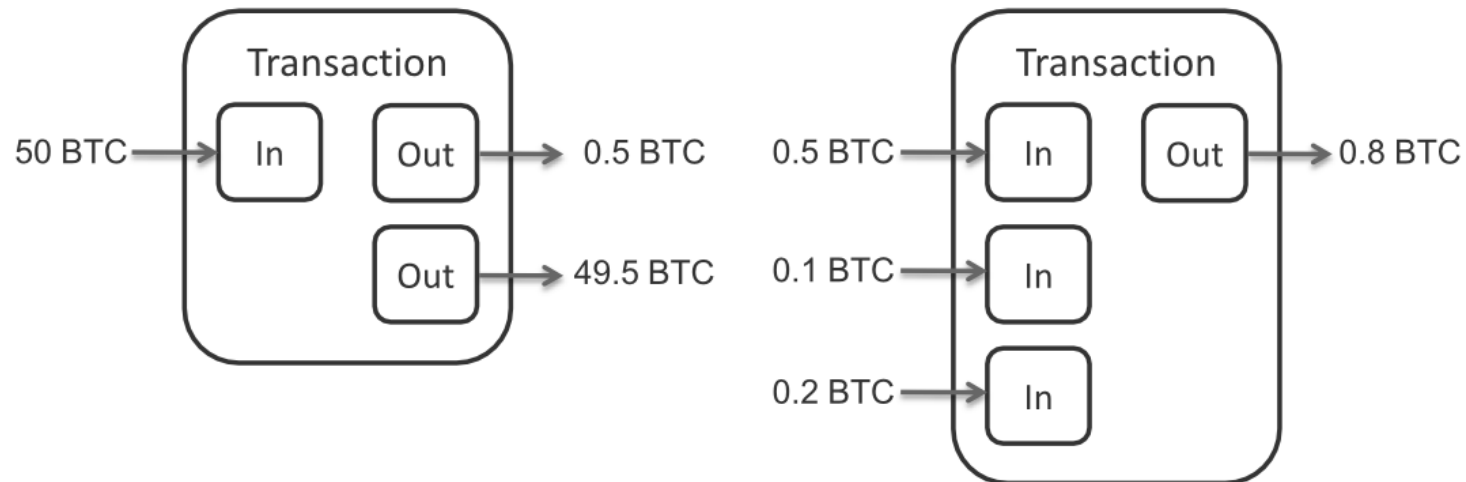


Goals / Challenges

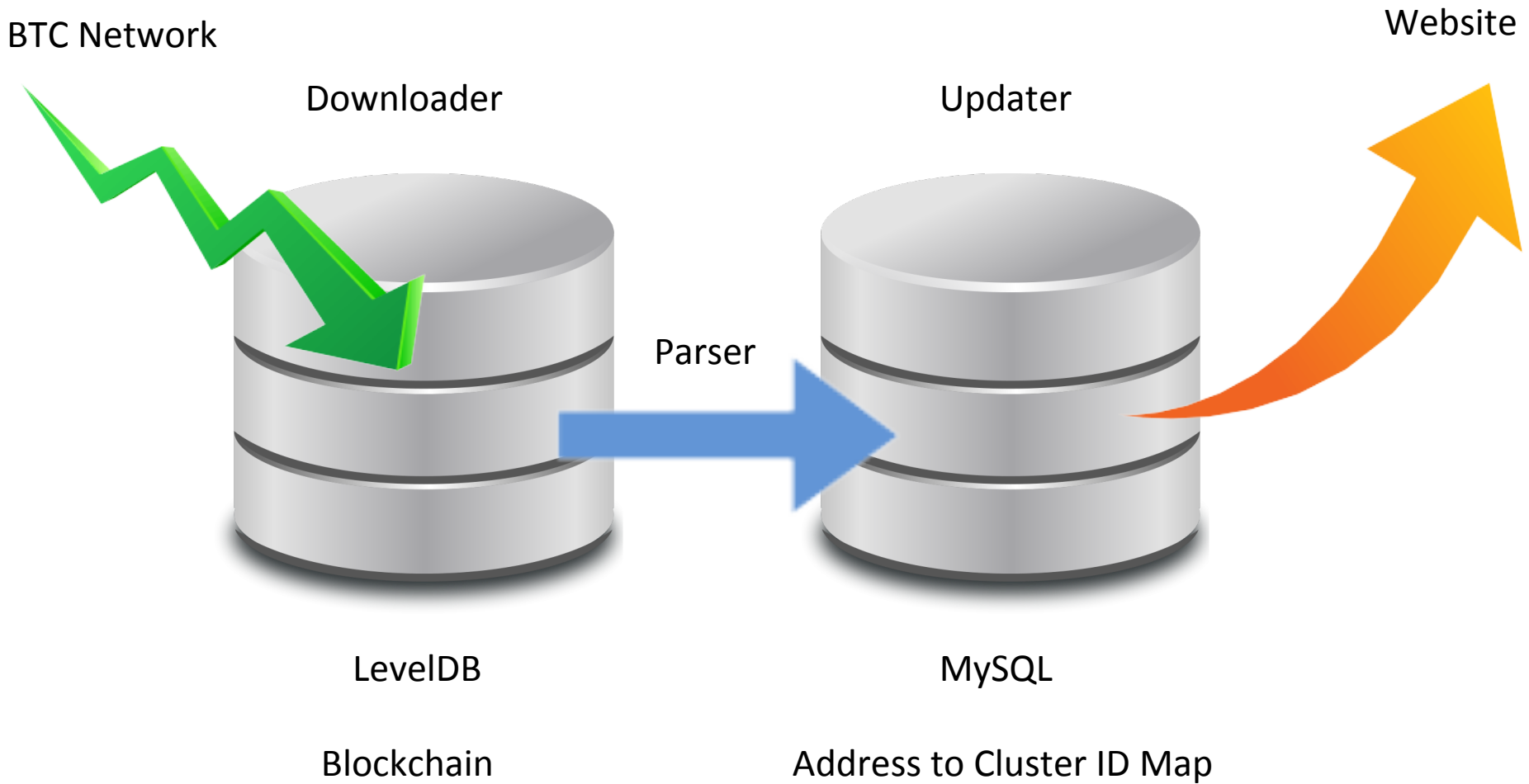
- Challenges
 - Resource management
 - Continually updating information
 - Legacy block chain information
 - Integration of systems
- System Goals
 - Real-time responses
 - Accurate
 - Expandable

btctracker: Parser

- Libbitcoin
- Three Steps
 - Find clustering transactions
 - Find input addresses of transaction
 - Keep track of connected components



btctrackr: Database



btctracker - Website

Track



Enter an address to find out which other addresses likely belong to the same person.

15iGN5CAkTarcoY85XxwTYWajJyz5hxbYv

Track

Shortest Path



Enter two addresses to find their shortest connecting path.

3J98t1WpEZ73CNmQviecrnyiWrnqRhWNLy



15iGN5CAkTarcoY85XxwTYWajJyz5hxbYv

Shortest Path

Cluster Balances



The address **1KCszN2rch9SMPagTS1r2QeGt7h9P7ehne** (0 ₿) likely belongs to an entity controlling 59 other addresses and 0 ₿.

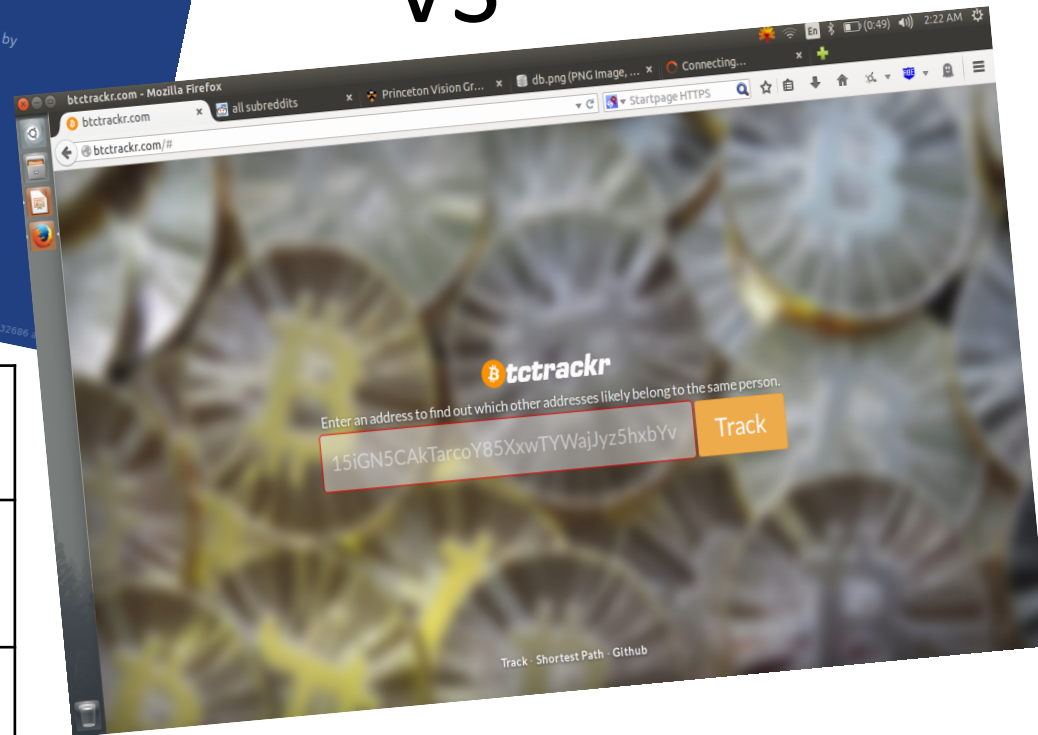
1112cfXeJap7ph4eJyGMxdKV63dMqAGJA (0 ₿)
115kBURFyLpoHYaHkHaR53Dah2Au4oMPcD (0 ₿)
12jn5UKnA393WnPcEQzT2VQavDz2RaDFis (0 ₿)
12S5HaA2KqHqxjsgCxQZafuefWSsNcVKs3 (0 ₿)
139XRbcUerNFDud6nmW7354GGjc9K4d41p (0 ₿)
14pbaDjFKxjcCJCBDyqMK3jMgjwH5Pzw9A (0 ₿)
14T6tX5w2dvq54FRX9gKdgUpXX43Huhow (0 ₿)
154eBsTnVRLlkRYPdz88cMvAKXPJcx5ME (0 ₿)
156SgGubQC44UvkuA6fPfzWxJWVncEjno7 (0 ₿)
158t3VZJRfYXQvcsydmzAv5KBbVtagm8Pe (0 ₿)
15BTysPZA57Qyj5gzFyroXYNGRRbNu8n96 (0 ₿)
15GznXHkRkwLz3D9BcVUcFLqYzdJqyoqq6 (0 ₿)
15HDdWRJ9zYZxGdCes1gicNURLBuJiuVES (0 ₿)
16LSQHmwrSW1M54QLpTXEPk49CMorSGCza (0 ₿)
171Y4B13xLvoEHIsr34FeFSwoC2aBciekC (0 ₿)
17FhZZJ7ZiaQC5kJYUTHikBnnZdRb182k (0 ₿)
17gd6BJpBStt36fKj14fRJts6oYYiKyMK4 (0 ₿)
17JLFY9KjPS8dkMy33RJ5yiGN1P6K68JZZ (0 ₿)
181j7x6SraKRrK2KEWP5W3Szd417BERxf (0 ₿)
18Fzbd1bdn5Qe3b5wP8F4Tb2zYxvAtMwRC (0 ₿)

The background of the image is a close-up, shallow depth-of-field shot of numerous interlocking gears. The gears are made of metal, with some appearing in a bright, reflective silver or chrome finish and others in a warm, golden-yellow hue. They are arranged in a complex, overlapping pattern, creating a sense of mechanical complexity and motion. The lighting is soft, highlighting the teeth of the gears and creating subtle gradients of light and shadow across the metallic surfaces.

DEMO

Evaluation

VS



	False Negative %
btctrackr*	35.8
Bitlodine	54.2

- at the time of this evaluation btctrackr only had 200,000 blocks parsed

Future Work

- Increased speed for balances
- Increased accuracy for 1-hop paths
- Cluster labeling
- Advanced Features:
 - Implementation of the change heuristic
 - Labeling and Identifying well-known cluster
 - Tracking IP addresses