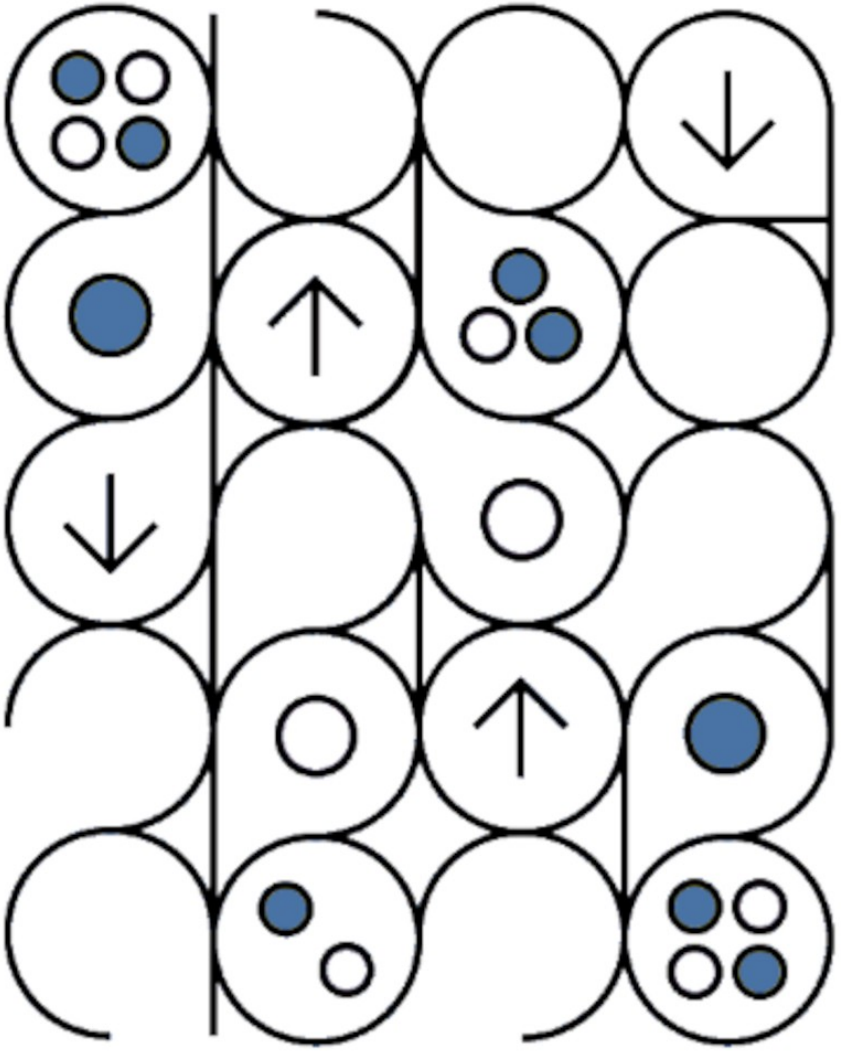


NextGraph
.org

Niko Bonnieure

European Commission
DG CNECT

NGI ASSURE

NextGraph
.org

NGI ZERO COMMONS

nlnet
FOUNDATION

SYNC PROTOCOL

FRAMEWORK / SDK

SYNC PROTOCOL

ECOSYSTEM of APPS

FRAMEWORK / SDK

SYNC PROTOCOL

WIP

ETA: mid 2025

Why another protocol ?

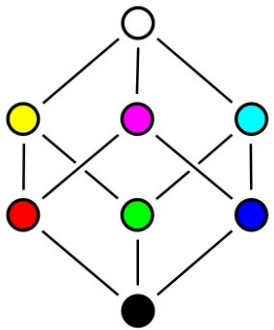
LOCAL-FIRST

until ~2000 OFFLINE-ONLY

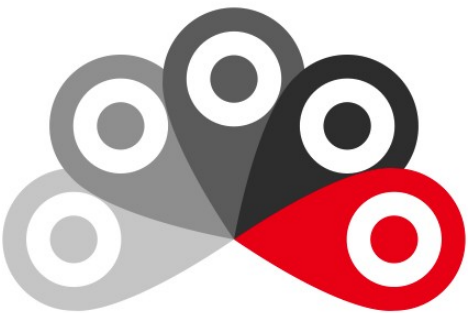
since 25 years ONLINE-ONLY

LOCAL-FIRST
= ONLINE + OFFLINE
+ LIVE COLLABORATION

Conflict-free Replicated Data Types

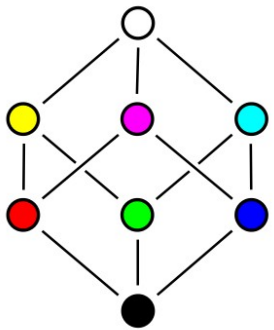


CRDT.tech

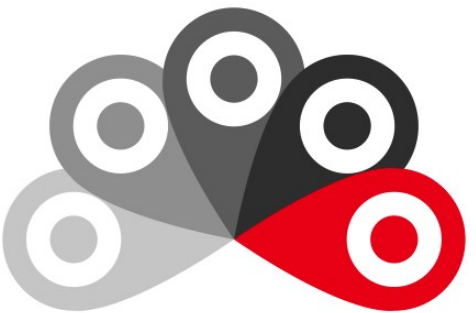


lofi.so

Conflict-free Replicated Data Types



CRDT.tech



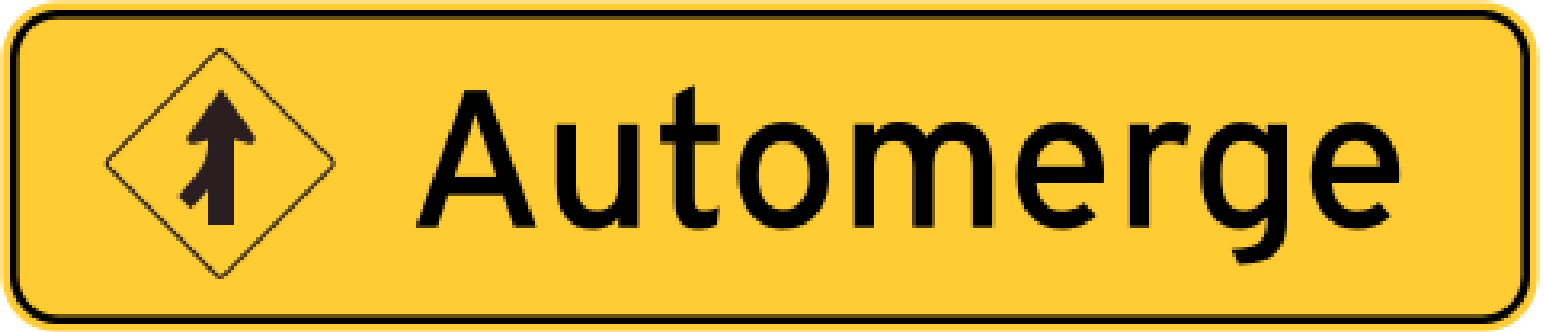
lofi.so

End-to-End Encryption

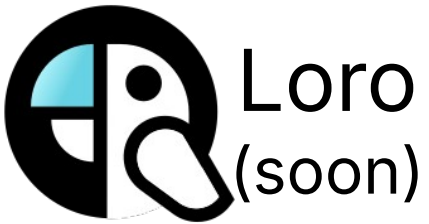
⇒ Data Ownership

⇒ Privacy

NextGraph transports any kind of CRDT



Loro
(soon)



CRDT

Loro
(soon)

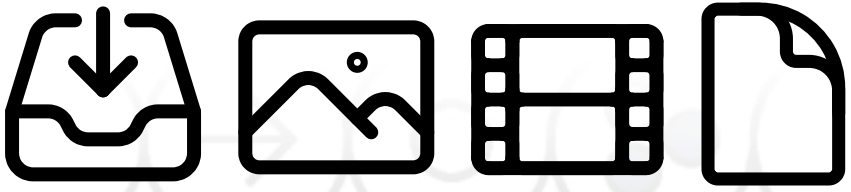
JSON
RichText
MarkDown
PlainText

CRDT

Loro
(soon)

JSON
RichText
MarkDown
PlainText

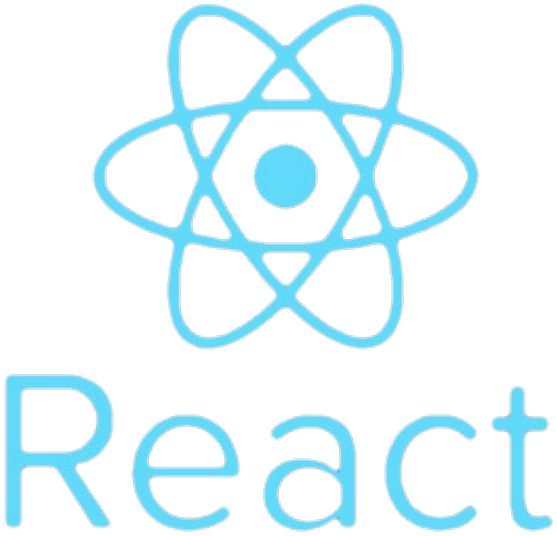
CRDT



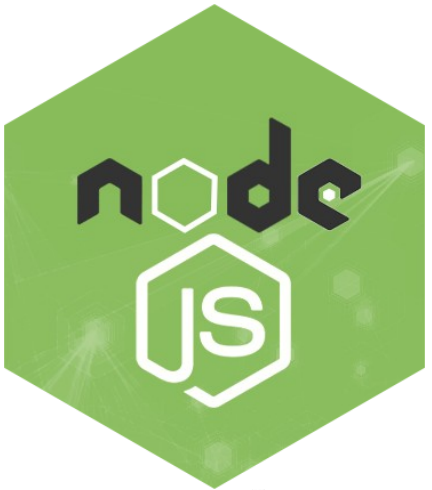
Immutable Binary Files
w/ Content Addressing

+combine Blocks ala Notion

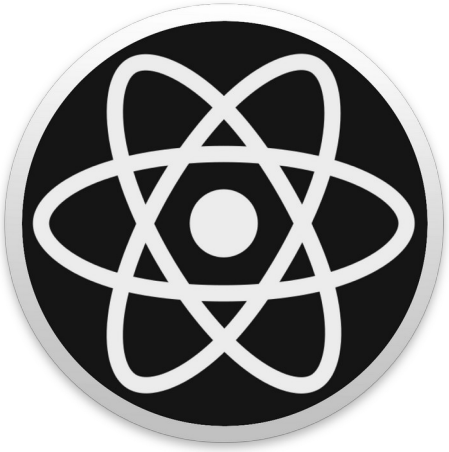
NextGraph is a Framework / SDK for App Developers

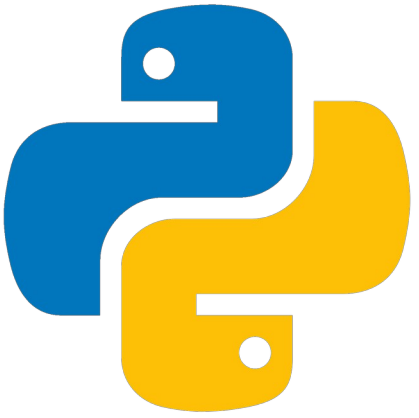


Reactive stores



SDK

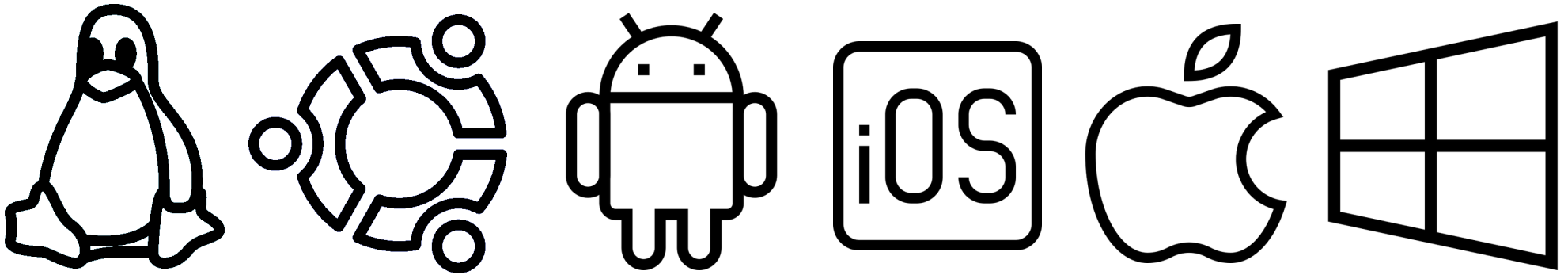




SDK

(soon)

NextGraph App



- Manage Documents
- Install and launch apps

- Encryption at rest
- Wallet: grant permissions
- Search, Share with others
- Stores: Public, Protected, Private, Group

Towards more private social networks

Data
fetching
Data
syncing

The end of the Client-Server model

SaaS ?

Federation ?

Self-hosted ?

Data Cloud
Serverless

Zero
Single Point of Failure

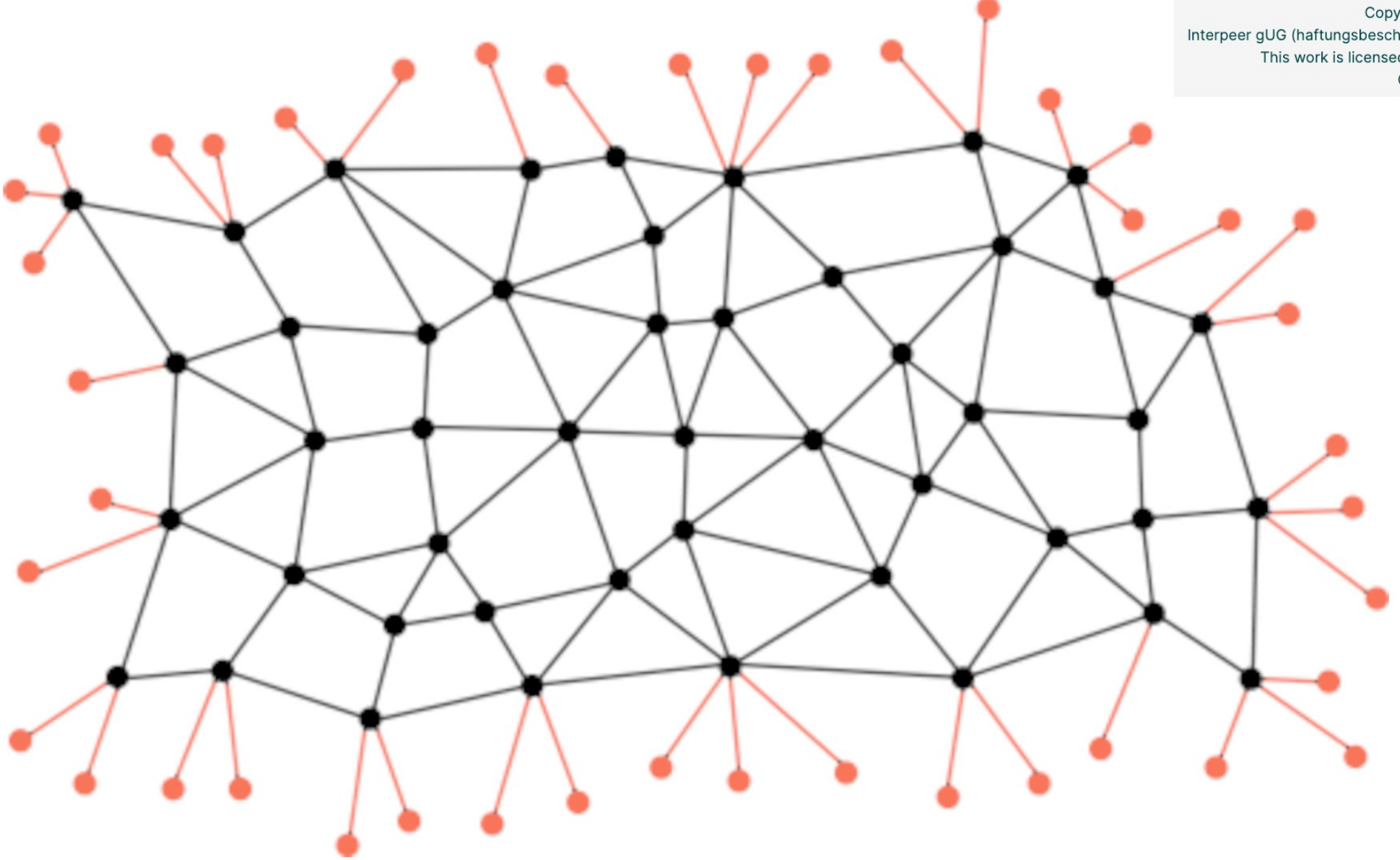
no domain name

P2P: How much decentralization is too much?

Brokers

2-tier network

Store and forward



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Locality
Availability
Backup, Failover

DIDs
Decentralized Identifiers

Sovereign Identities

Data portability & durability

—

Cryptographic Capabilities

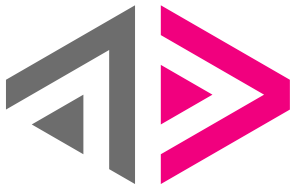
Read, Subscribe or Write

Compatible with HTTP

Run services

Headless CMS

WebApp



ActivityPub & Solid

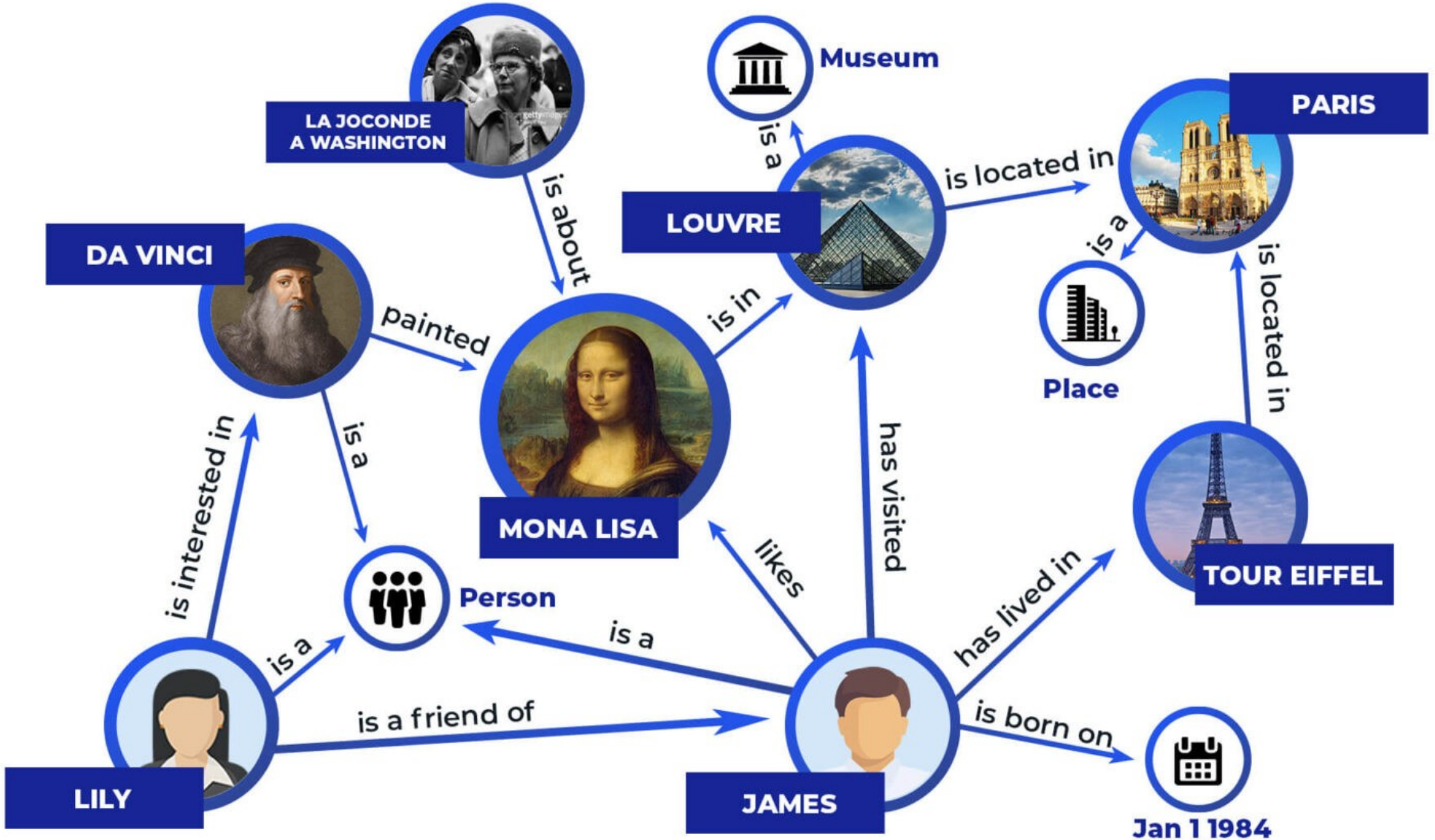
ActivityPods.org

Interoperability

RDF = Semantic Web

= Linked Data

= Web of Data


LA JOCONDE A WASHINGTON
is about
Museum
is a
LOUVRE
is located in
PARIS
is a
Place
is located in
DA VINCI
painted
is in
MONA LISA
is interested in
is a
has visited
likes
Person
is a
has lived in
TOUR EIFFEL
is a
is a friend of
is born on
LILY
JAMES
Jan 1 1984

Based on triples

subject → predicate → object

can represent any data,
Key-Value pairs, relationships.
Automatic JOINs

SPARQL - GraphQL

revision history, revert

Signatures ⇒ authenticity

Smart Contracts

ACID transactions

GNU Taler (soon)

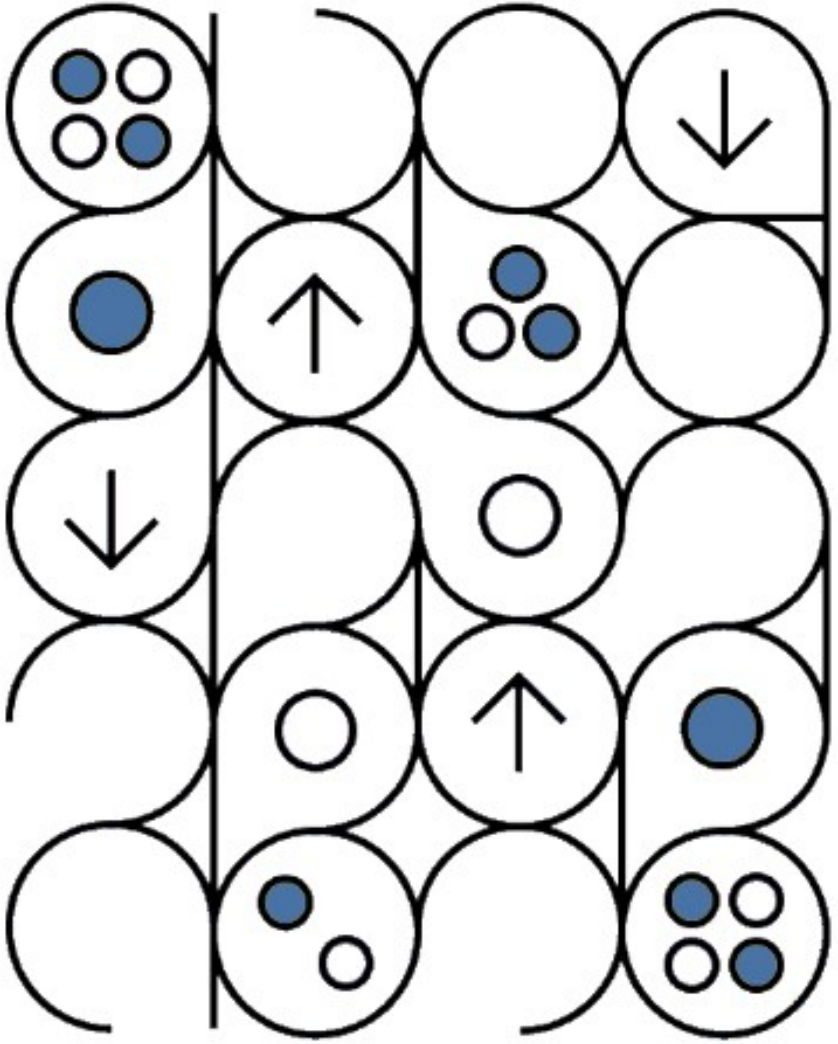
Blind Queries (maybe)

SDK

Build social apps, data-centric apps, collaborative apps, anything you want

IT'S FOSS

More cooperation between FOSS projects. Better integration of apps



NextGraph.org

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@nextgraph@fosstodon.org

→ forum, newsletter

Come say hi