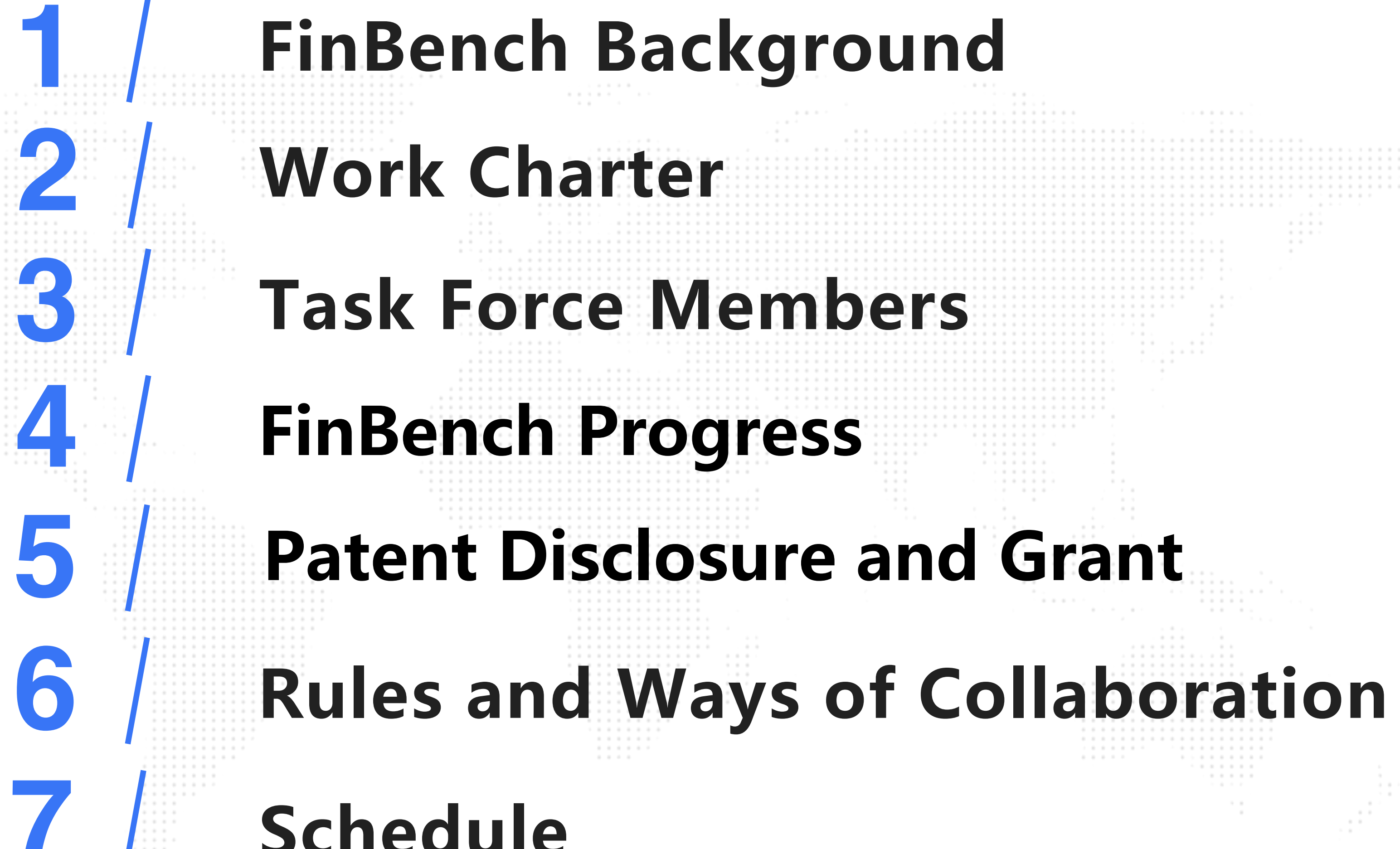


# FinBench Task Force

Zhihui Guo, Shipeng Qi, Heng Lin, Jim Peng

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# FinBench Background - Motivation

## Existing benchmark: LDBC SNB

- SNB: Social Network Benchmark
- Designed based on social network scenarios
- Limited when applied to the financial service industry

## Target benchmark: FinBench

- FinBench, short for Financial Benchmark, designs a high-quality benchmark for evaluating the performance of graph database systems in financial scenarios, e.g. anti-fraud and risk control, based on financial data patterns and query patterns.

# FinBench Background – Differences from SNB

## Application Scenarios

- SNB: friend recommendation, job referral...
- FinBench: risk control, AML, KYC, ...

## Schema Characteristics

- SNB: single edge
- FinBench: multiple edge

## Workload Characteristics

- Strict latency bounds (e.g. P999 20ms)
- Read-write query
- Temporal window (constrained by start\_time)
- Different subgraph patterns (e.g. cycles, paths, chains)
- Path Filtering: Recursive path filtering and regular path query
- ...



# FinBench Background – Design and Implementation

## Design Principle (Proposed Version)

- Same data, different workloads
- Inspired by applications in financial systems
- Data and schema design reflect financial activities
- Queries are divided into two workloads:  
Transaction Processing and Analytical Processing
- Each workload reflects its query pattern, e.g.  
Online workload includes read query, write query and read-write query.

## Benchmark Suite

- Similar to SNB, the suite includes
  - finbench\_datagen
  - finbench\_driver
  - reference implementations of different database

Note:

You can find more in the draft.

[http://github.com/ldbc/ldbc\\_finbench\\_docs](http://github.com/ldbc/ldbc_finbench_docs)

# Work Charter of FinBench

**Name of task force:** FinBench Task Force

**Proposed or current leader:** Zhihui Guo, Ant Group, guozhihui.gzh@antgroup.com

**Permanent or Ad-Hoc:** Ad-Hoc

## Scope of work:

- The FinBench project aims to define a graph database evaluating benchmark and develop a data generation process and a query driver to make the evaluation of the graph database representative, reliable and comparable, especially in financial scenarios.

## Intended output

- The intended output is LDBC FinBench, a precise specification for evaluating graph database query and computation performance based on financial scenarios. It is capable of independent implementations using various graph database products, intended for approval as one of LDBC Standards.

## Other intended output/work product

- Software for data generation
- Software for query driver
- Reference implementation

# Task Force Members

Member	Company/Individual	Representatives
1	Ant Group	Zhihui Guo, Shipeng Qi, Heng Lin, Jim Peng
2	Pometry	Ben Steer
3	Create Link	Yan Zhou
4	StarGraph	Youren Shen
5	Ultipa	Ricky Sun, Jiansong Zhang
6	Katana	Thomas Cook
7	Intel	Parviz Peiravi, Henry Gabb
8	Individual	Koji Annoura

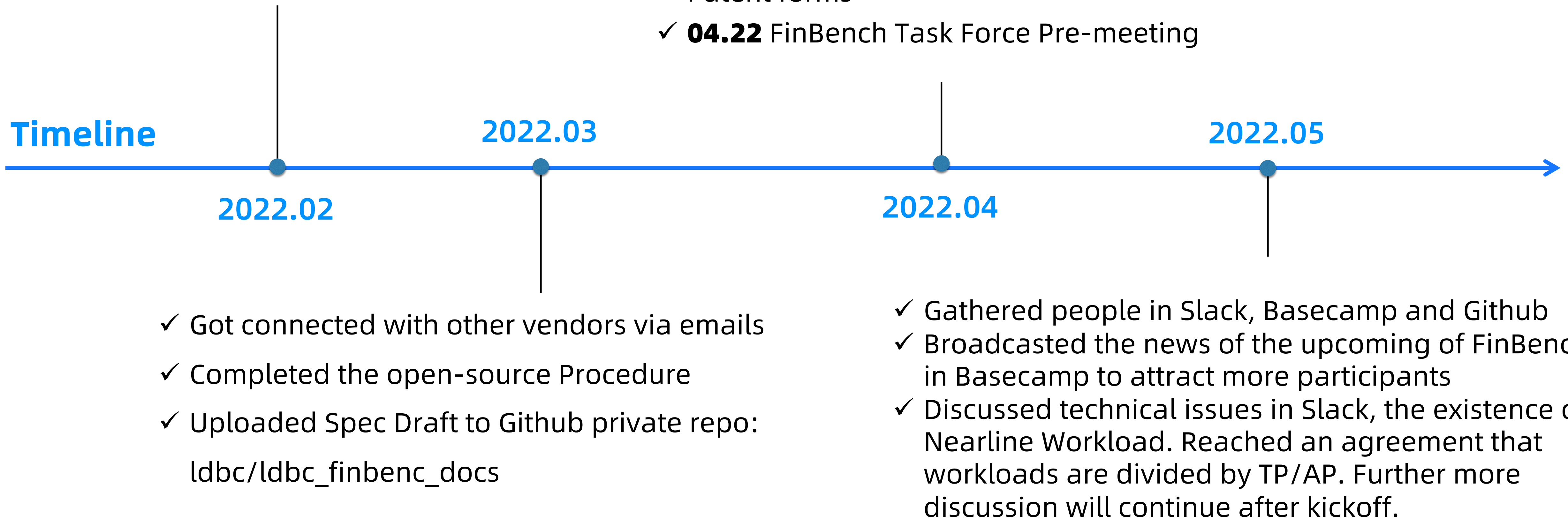
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Observer	Company/Individual	Representatives
1	Memgraph (observer)	Marko Budiselic, Benjamin Antal



# FinBench Progress

- ✓ **02.23** LDBC BoD Meeting: FinBench Proposal





# Ant Group Patent Disclosure & Grant to LDBC

## Patent Disclosure

Index number	Title or description	Document or Standard number or other short identifier, if any	Version number or date	Section(s)	Index number	Jurisdiction	Patent number or other identifier	Title or description	Status (Application pending, Approved etc)
1	Financial Benchmark Specification Draft	FinBench Draft	All	2.3 Data	1 and 2	china	CN113254351B	A generation method and a device of graph data (图数据生成方法及装置)	Approved
2	Financial Benchmark Specification	FinBench	All	2.3 Data					

- Implementation of FinBench may cause infringement of the patent claim in the right table.

## Grant to LDBC

Option	Tick one option	Instigating Documents	Patents or patent applications which are SEPs <i>[Tick one only]</i>			
1		All versions of all LDBC Standards	<input type="checkbox"/> All those patents or applications in any jurisdiction which would be necessarily infringed by an Implementation of any LDBC Standard stated in section A2.5.1 of this Grant			
2	√	All versions of the following LDBC Standards <ul style="list-style-type: none"><li>Financial Benchmark Specification Draft</li><li>Financial Benchmark Specification</li></ul>	√ The patents or applications listed below			
			Jurisdiction	Patent number or other identifier	Title or description	Status (Application pending, Approved etc)
			China	CN113254351B	A generation method and a device of graph data (图数据生成方法及装置)	Approved

- Grant of Interim Patent License for the Draft FinBench standard
- Grant of Final Patent License for the Approved FinBench Standard

# Rules and ways of collaboration

## Task force rules

- TF is open for LDBC members and non-LDBC members with required agreements signed.
- TF members resolve the different opinions by simple-majority votes.
- Observers can be invited by TF members but **can not** vote, object or submit codes and docs.
- Use the tools managed by LDBC including GitHub, Basecamp, Slack, Zoom, and email.
- Participants who do not contribute but listen will be labeled as observer status

## Collaboration ways

- Roles the tools play: Basecamp for project management, Slack for discussion, Zoom for regular meetings, Github for collaborative development
- Recommendation
  - Offline discussion to make everyone clear on technical things in different timezones.
  - Regular online meetings to approve and sync-up.

# Schedule[TBD]

Time	Plan
Feb 2022	FinBench Task Force Pre-meeting
May 16 <sup>th</sup> , 2022	<b>LDBC BoD Meeting:</b> vote for FinBench Task Force FinBench Kickoff Announce
Late May 2022	FinBench Task Force <b>Kick-off Meeting</b> Set ldbc_finbench_docs to public, noted as draft(WIP version)
Jul 2022	<b>First Task Force draft</b> of the FinBench specification
Sep 2022	<b>Second Task Force draft</b> of the FinBench specification
Oct 2022	<b>Release of data generation</b> , with reference import implementation
Nov 2022	<b>Release of query driver</b> , with reference query implementation
Dec 2022	<b>Final Task Force draft</b> of the FinBench specification intended for approval as a Standard.

**Note:** the schedule will be discussed after official kickoff to make it more practical.

# THE END

## THANK YOU!

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Q & A