



Profiling MySQL Execution Plans with myflames



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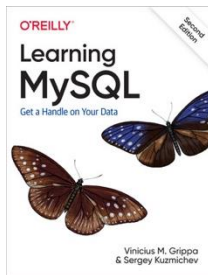
Lead Database Engineer @ Readysset

About Me



```
SELECT * FROM person WHERE name LIKE 'Vini' ;
```

- Lead Database Engineer at **Readysset**
- Oracle ACE Director
- Ex-Percona working with MySQL and MongoDB
- Co-author of the book Learning MySQL
- Organizer of the MySQL community in Brazil (MUG)



COMUNIDADE
MySQL  **BR**

Agenda



Agenda

- What is myflames
- What is a flamegraph
- Why flamegraphs are useful
- New MySQL explain features
- Myflames: concepts & examples
- Flamegraphs
- Bar graphs
- Visual Explain
- Study

What is myflames?

Open-Source Project

An open-source project inspired by the flamegraph concepts of **Brendan Gregg** and **Tanel Poder**.

Developed Using AI

Architected and built using **AI development tools**.

MySQL EXPLAIN Translation

Translates raw, complex **MySQL EXPLAIN** execution plan output into human-readable format.

AI Digestion & Token Efficiency

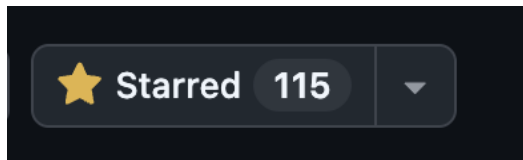
Formats execution metrics specifically for **LLM context ingestion** and token cost reduction.

Study Platform

Serves as a dedicated **profiling and learning workbench** to analyze, share, and study database query behavior.

What is myflames?

<https://github.com/vgrippa/myflames>



v2.3.0: local UI workspace and Visual Explain
Latest



myflames

SOLE OWNER

Last released Sep 30, 2026

MySQL and MariaDB EXPLAIN ANALYZE visualizer: flame graphs, bar charts, treemaps, and diagrams

Manage

View

Why should I still invest in a tool that AI can do the job?

- You need to know if the AI suggestions are good or is hallucinating.
 - Token cost is becoming more and more expensive.
 - You need to know what you want to know what you should ask for.
-
- We need to keep our jobs!

What is a flamegraph?



What is a flamegraph?

- Visualization technique for hierarchical performance data
- Created by Brendan Gregg to analyze system performance
- Represent stack traces aggregated over time
- X-axis: where time is spent (not time sequence)
- Y-axis: call stack depth / hierarchy
- Each box = function or operation
- Wider boxes = more time / higher cost
- Designed to quickly answer: “Where is the bottleneck?”



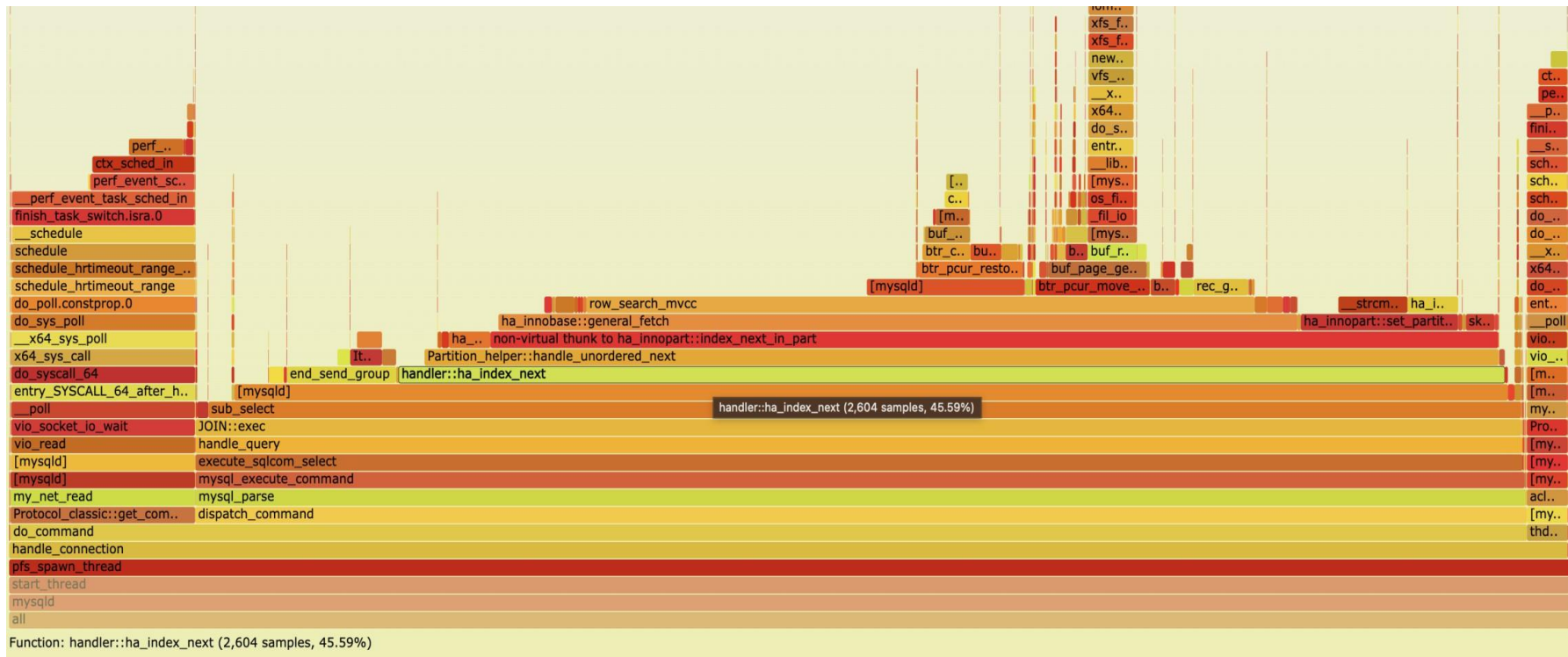
What is a flamegraph?



**Why
flamegraphs are
useful?**



Why flamegraphs are useful?



New MySQL explain features



New MySQL explain features

- We had until MySQL 8.4:
 - `EXPLAIN <query>;`
 - `EXPLAIN FORMAT=JSON <query>;`
 - `EXPLAIN FORMAT=TREE <query>;`
 - `EXPLAIN ANALYZE <query>;`

New MySQL explain features

- `mysql> EXPLAIN ANALYZE FORMAT=JSON SELECT * FROM employees.employees WHERE last_name = 'Facello' AND first_name = 'Georgi';`
- `ERROR 1235 (42000): This version of MySQL doesn't yet support 'EXPLAIN ANALYZE with JSON format`

New MySQL explain features

- <https://dev.mysql.com/blog-archive/new-json-format-for-explain/>
- `mysql> SET explain_json_format_version=2;`
- `mysql> EXPLAIN ANALYZE FORMAT=JSON SELECT * FROM
employees.employees WHERE last_name = 'Facello' AND
first_name = 'Georgi';`

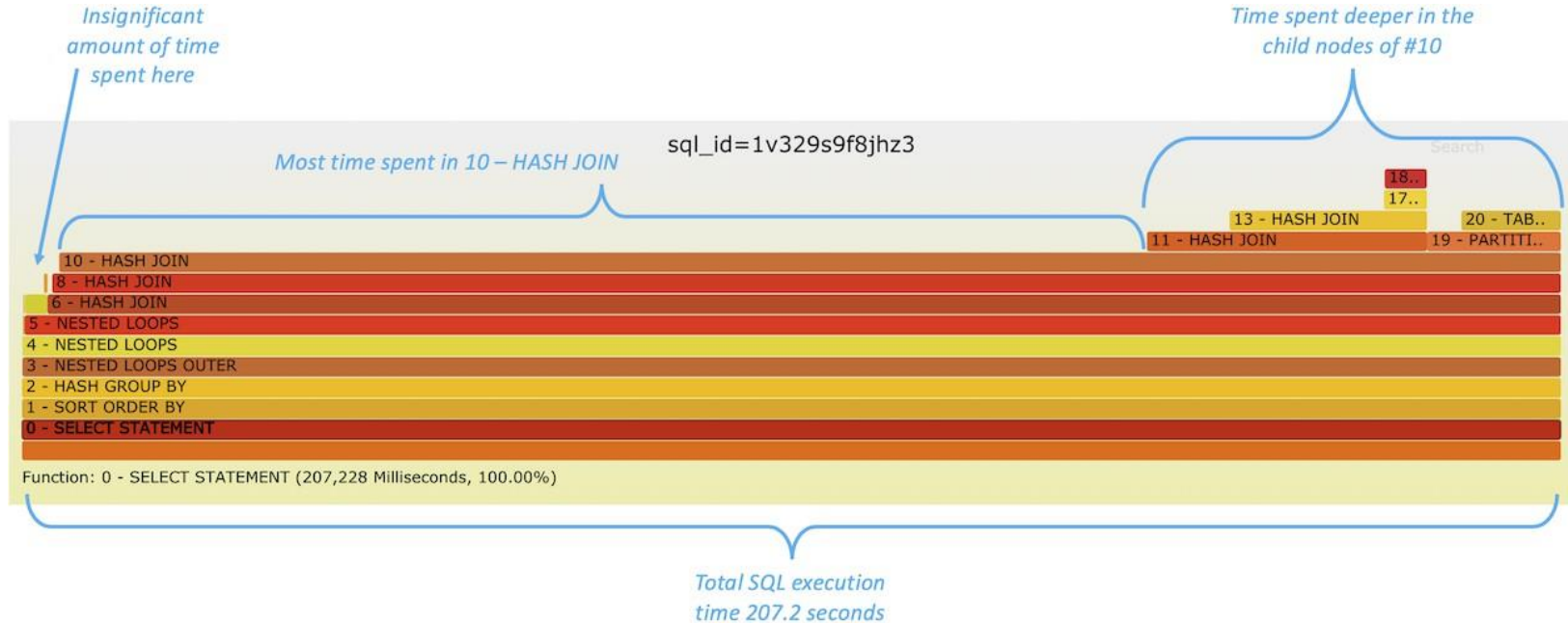
New MySQL explain features

```
| "inputs": [  
  {  
    "inputs": [  
      {  
        "ranges": [  
          "(last_name = 'Facello')"  
        ],  
        "covering": false,  
        "operation": "Index range scan on employees using idx_last_name over (last_name = 'Facello')", "index_name": "idx_last_name",  
        "table_name": "employees",  
        "access_type": "index",  
  
[...]  
        "estimated_rows": 186.0, "index_access_type":  
        "index_range_scan", "actual_last_row_ms": 0.510455,  
        "actual_first_row_ms": 0.16916699999999998,  
        "estimated_total_cost": 2.5677966101694913,  
        "estimated_first_row_cost": 0.013805358119190814  
      },  
      {  
        "ranges": [  
  
[...]  
      ]  
    },  
    "condition": "((employees.first_name = 'Georgi') and (employees.last_name = 'Facello'))", "operation": "Filter: ((employees.first_name =  
    'Georgi') and (employees.last_name = 'Facello'))", "query_type": "select",  
[...]  
    "actual_last_row_ms": 0.905292,  
    "actual_first_row_ms": 0.225624000000000002,  
    "estimated_total_cost": 5.562533452274755  
  } |
```

Tanel Poder



SQL Flamegraph



myflames

- Flame graph
- Bar graph
- Tree view
- Visual Explain

DEMO



Myflames – Token Efficiency

Tokens to ask an AI to fix one slow query

Measured against Claude Opus 4.8 (real *count_tokens*), 2026-06-05. Lower is cheaper.

Raw **EXPLAIN** plan + your question



2,110 tokens

myflames digest + your question



521 tokens

4.0× fewer tokens (75% less) · **~\$7.90 saved per 1,000 queries** (Opus 4.8 input; ~\$4.80 on Sonnet 4).

Myflames Teach



Myflames teach

- Deep studying of classic algorithms that MySQL uses
- Time complexity analysis $O(n)$
- Animated internal operations

Questions?



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Thank You!

