Visualize thread pool

Team name : project101(team B)

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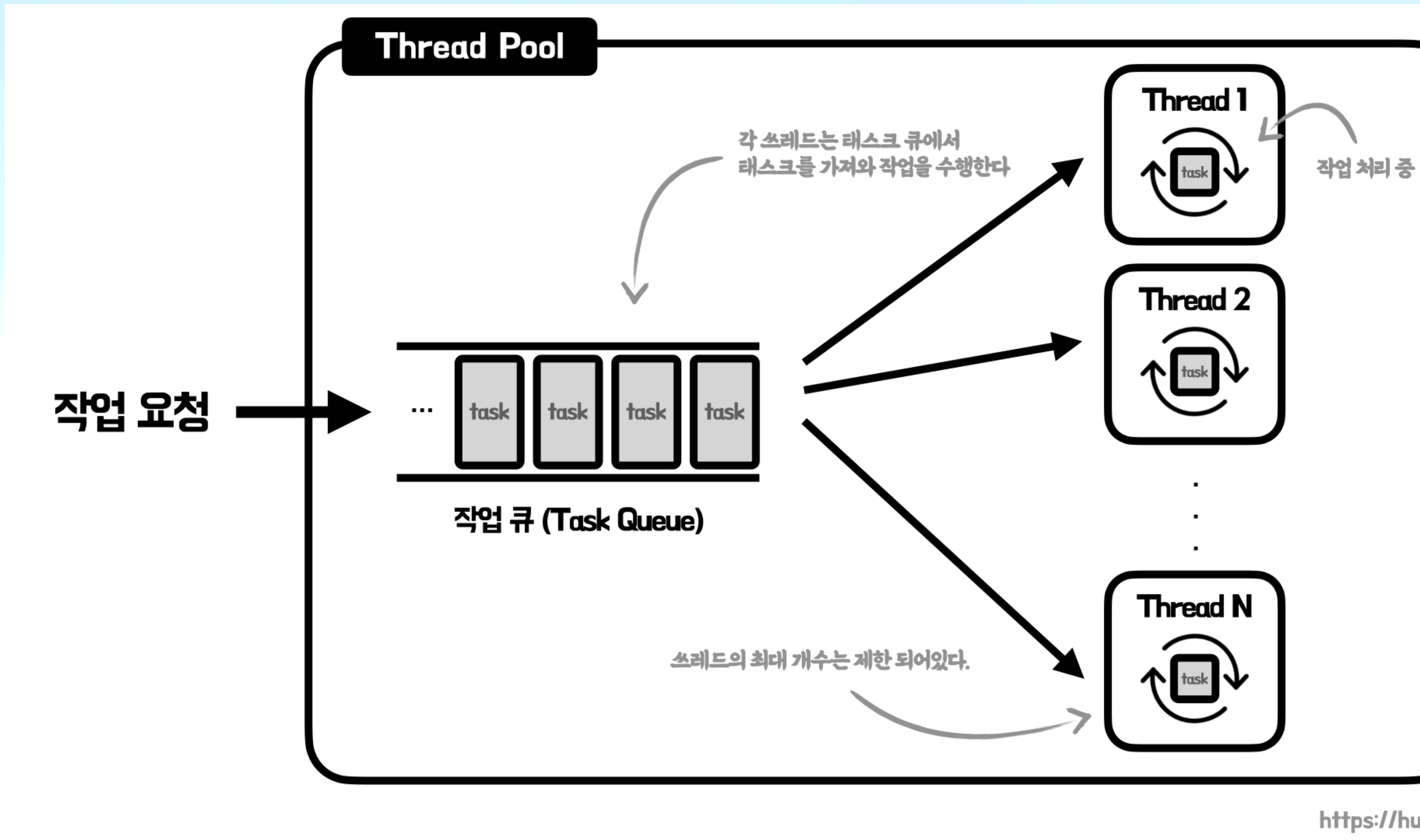
What is thread pool?

A system that manages multiple pre-created threads.

- Reduces the overhead of creating new threads
- Prevents system overhead by limiting the number of concurrently running threads
- Ensures efficient resource management and faster task processing



Problem statement

Importance of monitoring thread pool

- Performance Optimization
- Scaling Decisions
- Problem Analysis

Problem statement

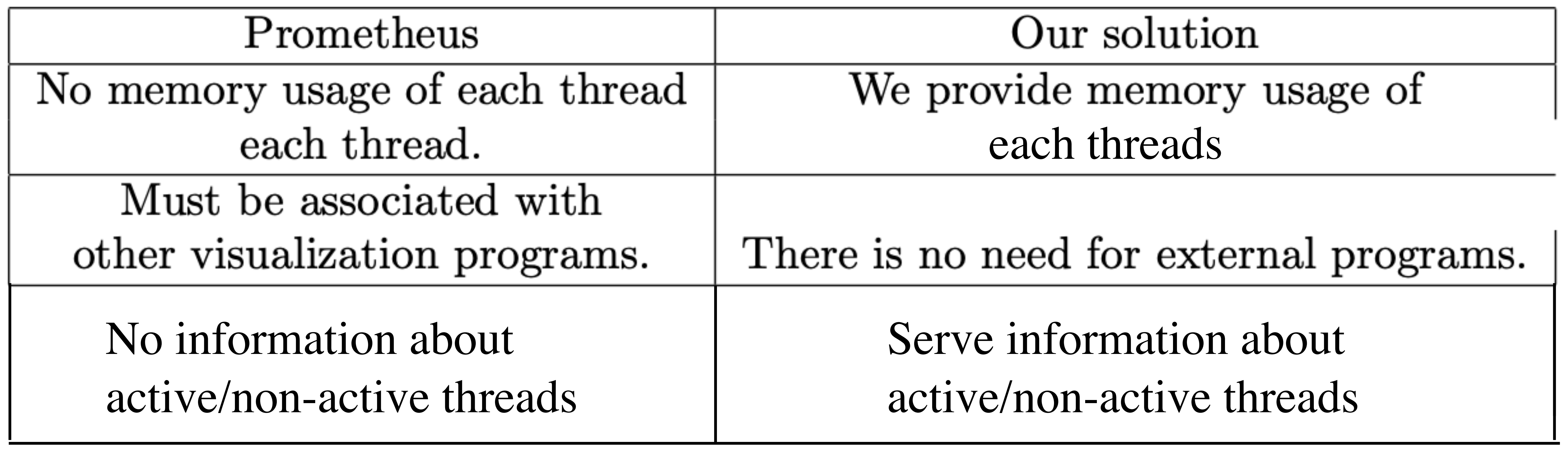
Monitoring thread pool is so important but..

- Existing tools serves huge amount of metrics so has problem when it comes to specific threads

Previous tools

Prometheus

lack of detailed thread level metrics

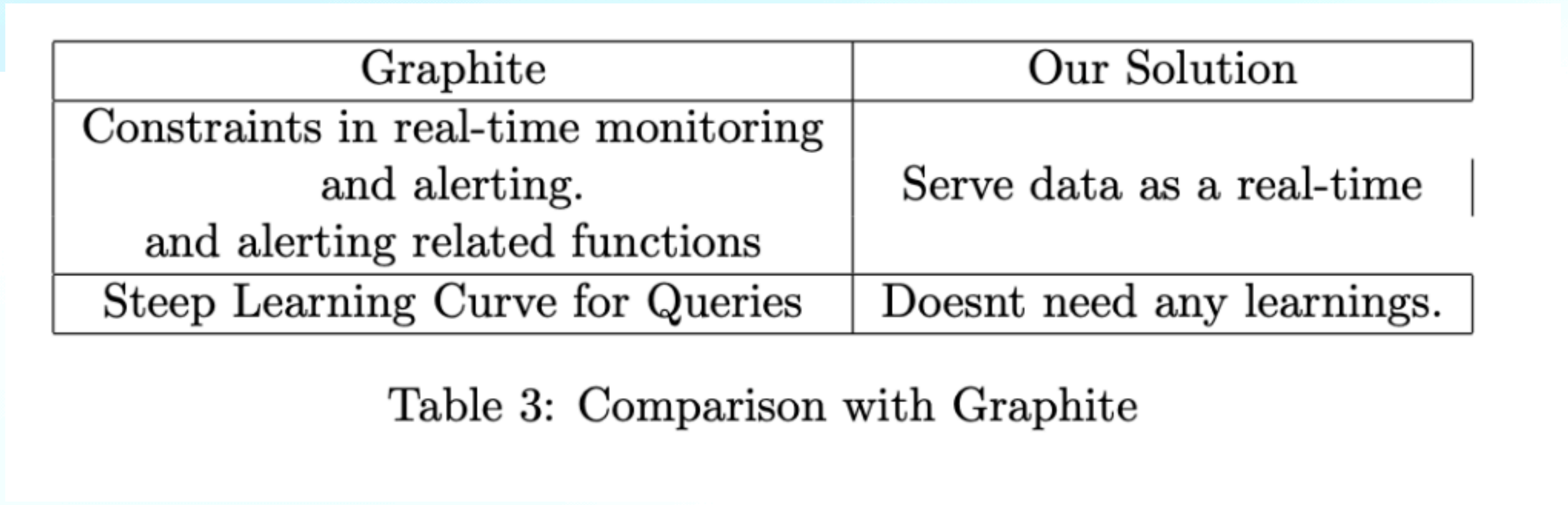


Prometheus	Our solution
No memory usage of each thread each thread.	We provide memory usage of each threads
Must be associated with other visualization programs.	There is no need for external programs.
No information about active/non-active threads	Serve information about active/non-active threads

Previous tools

Graphite

Graphite's query language, though powerful, can be challenging to use for complex metric analysis. This difficulty may hinder non-expert users from effectively analyzing the data they need.



Graphite	Our Solution
Constraints in real-time monitoring and alerting. and alerting related functions	Serve data as a real-time
Steep Learning Curve for Queries	Doesnt need any learnings.

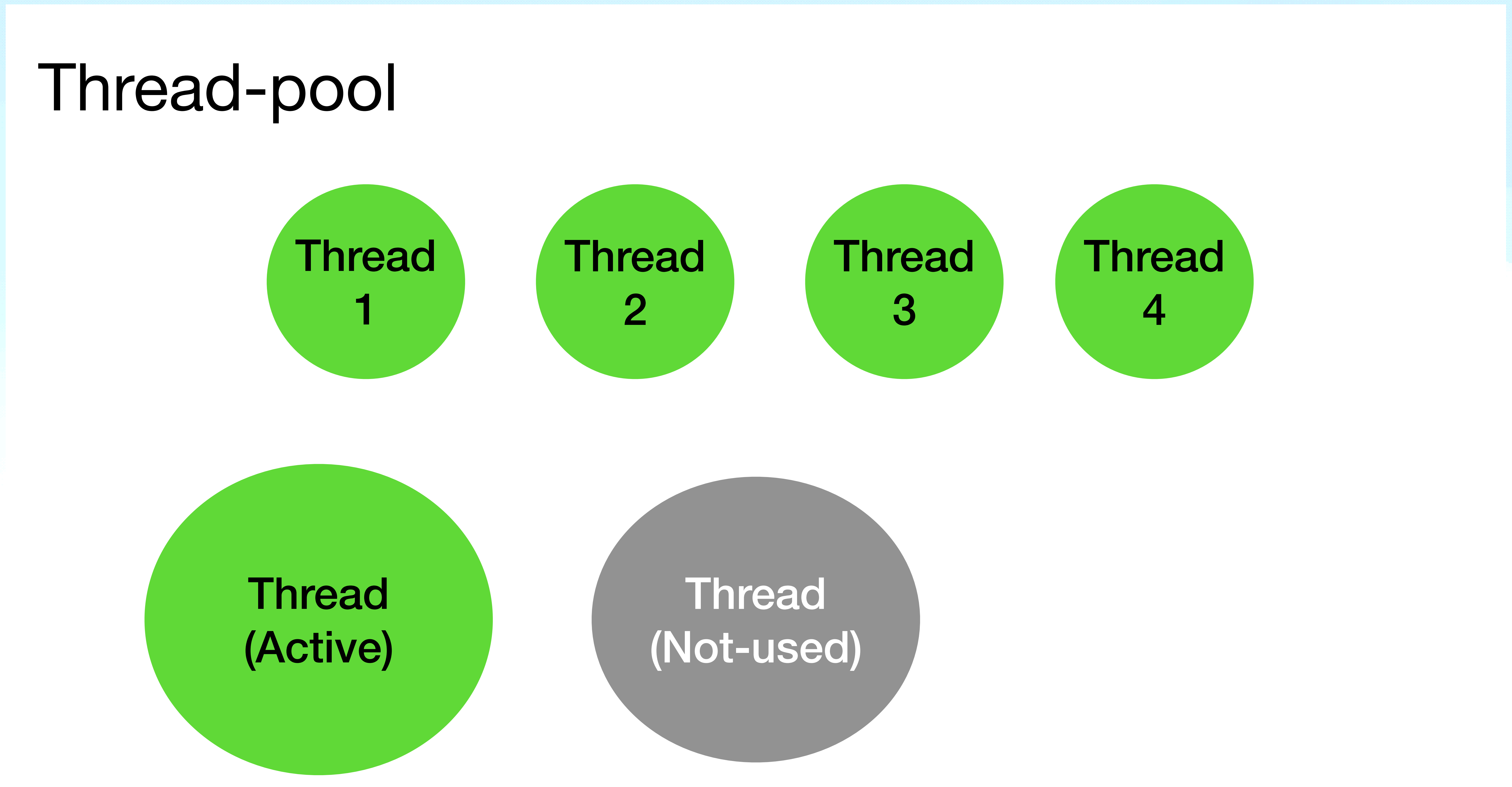
Table 3: Comparison with Graphite

Our Solution

Information for per thread:

api : /user/profile..

Memory usage



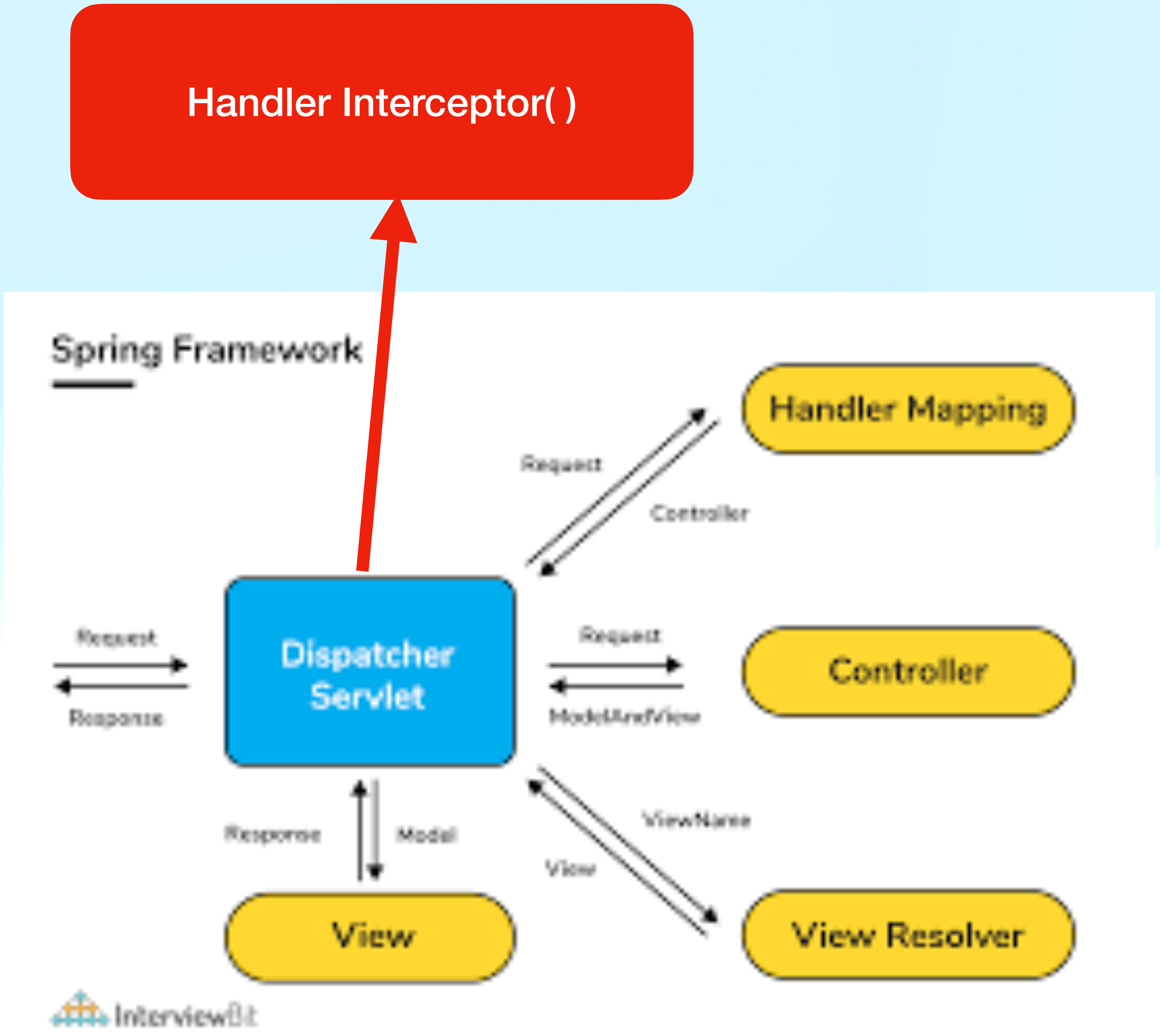
How to implement this tool?

- How to get data of each threads?
- How to visualize?

How to implement?

How to get data about each threads?

The Dispatcher Servlet is a central component of the Spring MVC architecture, acting as the front controller that handles incoming client requests.



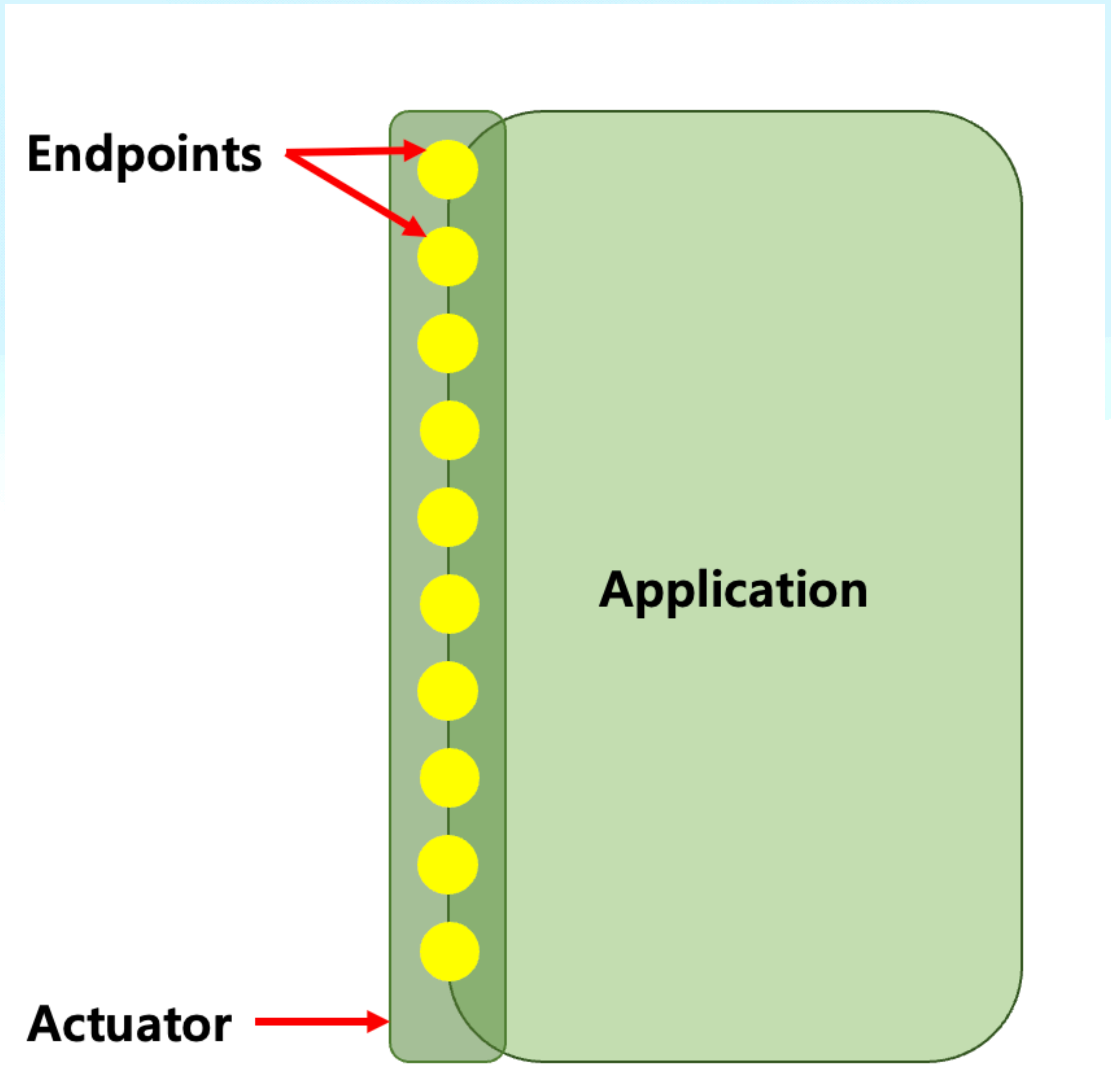
How to implement?

How to get data about each threads?

The Spring Boot Actuator is production-ready feature to help monitor Spring Boot applications. It offers various endpoints that can be used to fetch inter- nal information via HTTP requests.

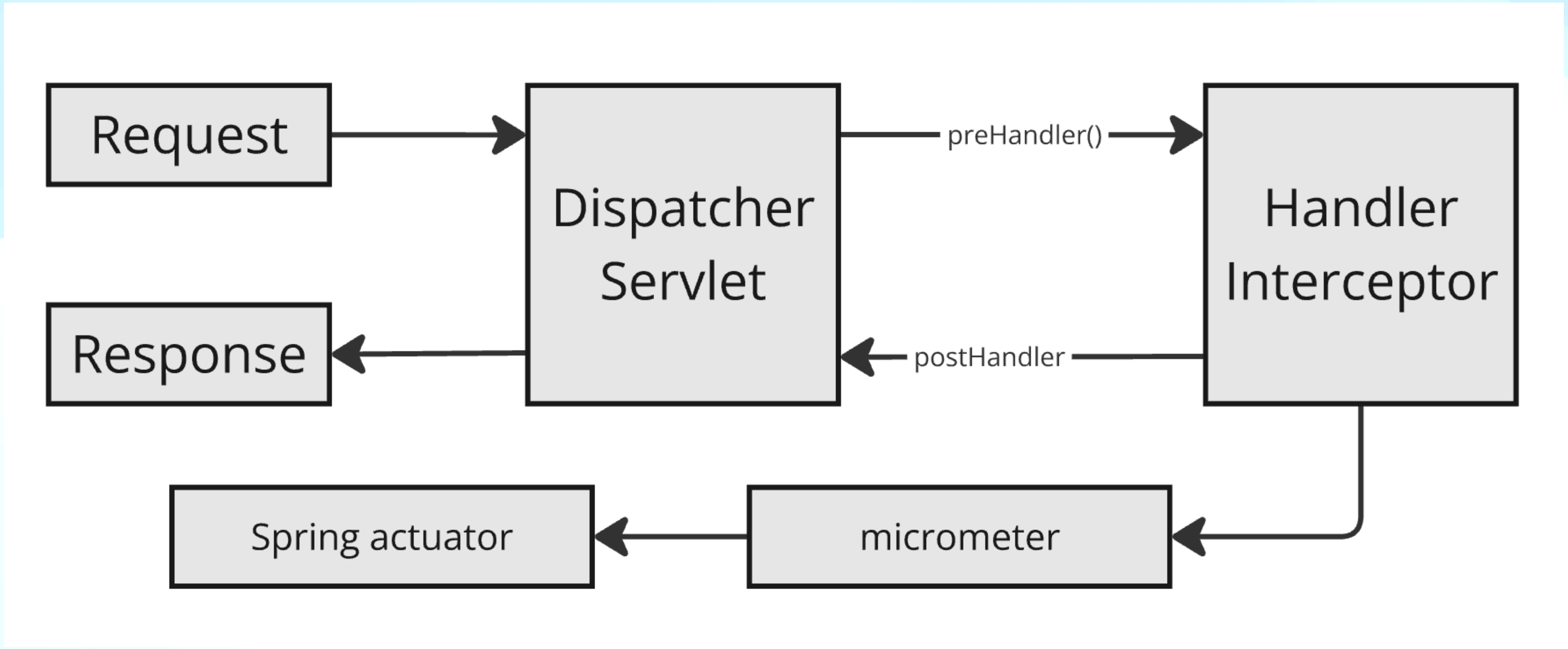
Micrometer is library to collect data of spring projects

- Lots of tools already mentioned are using this two components.



How to implement?

How to get data about each threads?



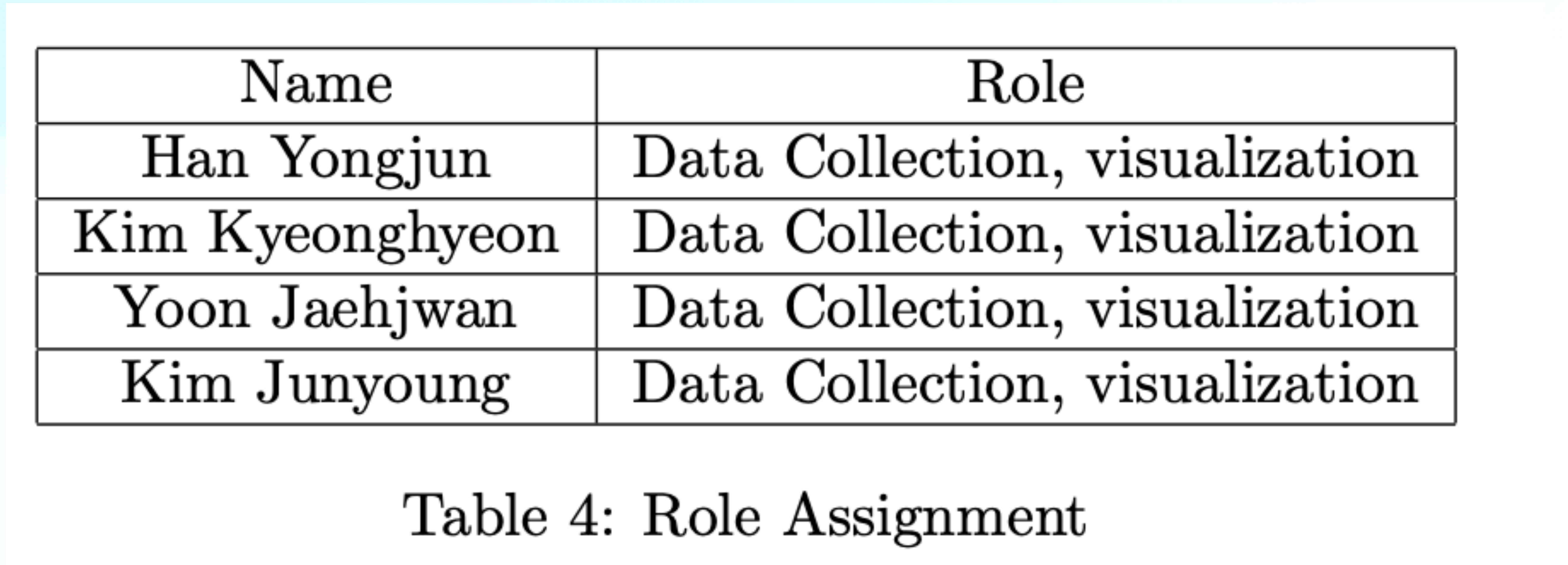
How to implement?

How to visualize?

- Use thyme leaf.
- Get data from endpoint through web socket/polling (not decided yet)

Planning in Detail

Role assignments

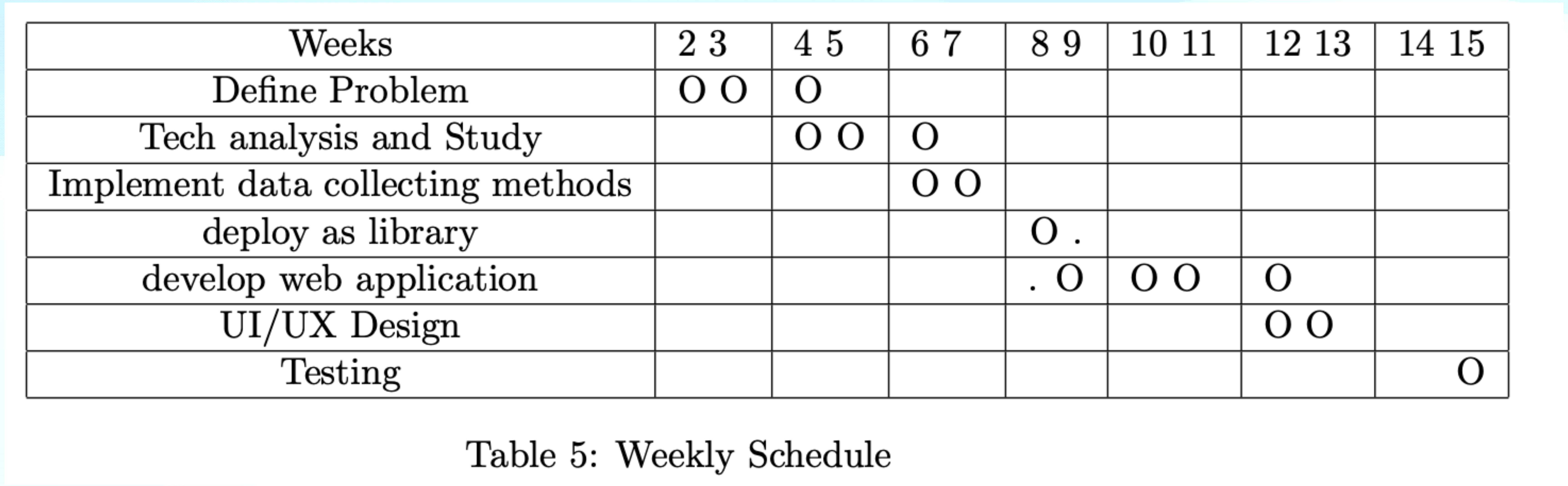


Name	Role
Han Yongjun	Data Collection, visualization
Kim Kyeonghyeon	Data Collection, visualization
Yoon Jaehjwan	Data Collection, visualization
Kim Junyoung	Data Collection, visualization

Table 4: Role Assignment

Planning in Detail

Development plan



Weeks	2 3	4 5	6 7	8 9	10 11	12 13	14 15
Define Problem	O O	O					
Tech analysis and Study		O O	O				
Implement data collecting methods			O O				
deploy as library				O .			
develop web application				. O	O O	O	
UI/UX Design						O O	
Testing							O

Table 5: Weekly Schedule

Thank you