

Load Balancer to Redis Server (read-only)

GROUP 7

BI12-008

Nguyen Thien An

BI12-059

Phan Thanh Binh

BA11-093

Tran Minh Trung

BI12-452

Tran The Trung

BI12-263

Chau Phan Phuong Mai

BI12-458

Pham Xuan Trung



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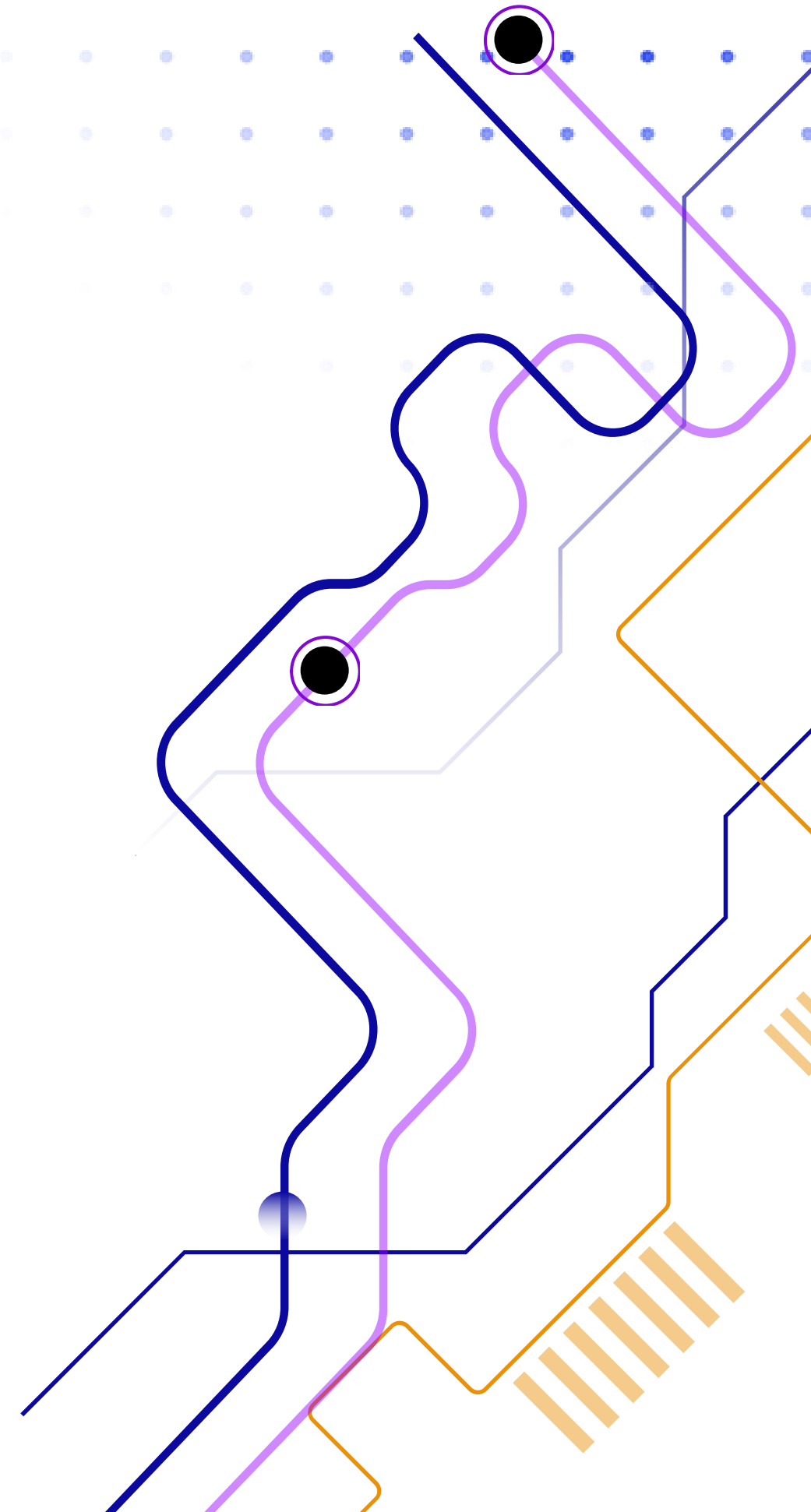
Conclusion



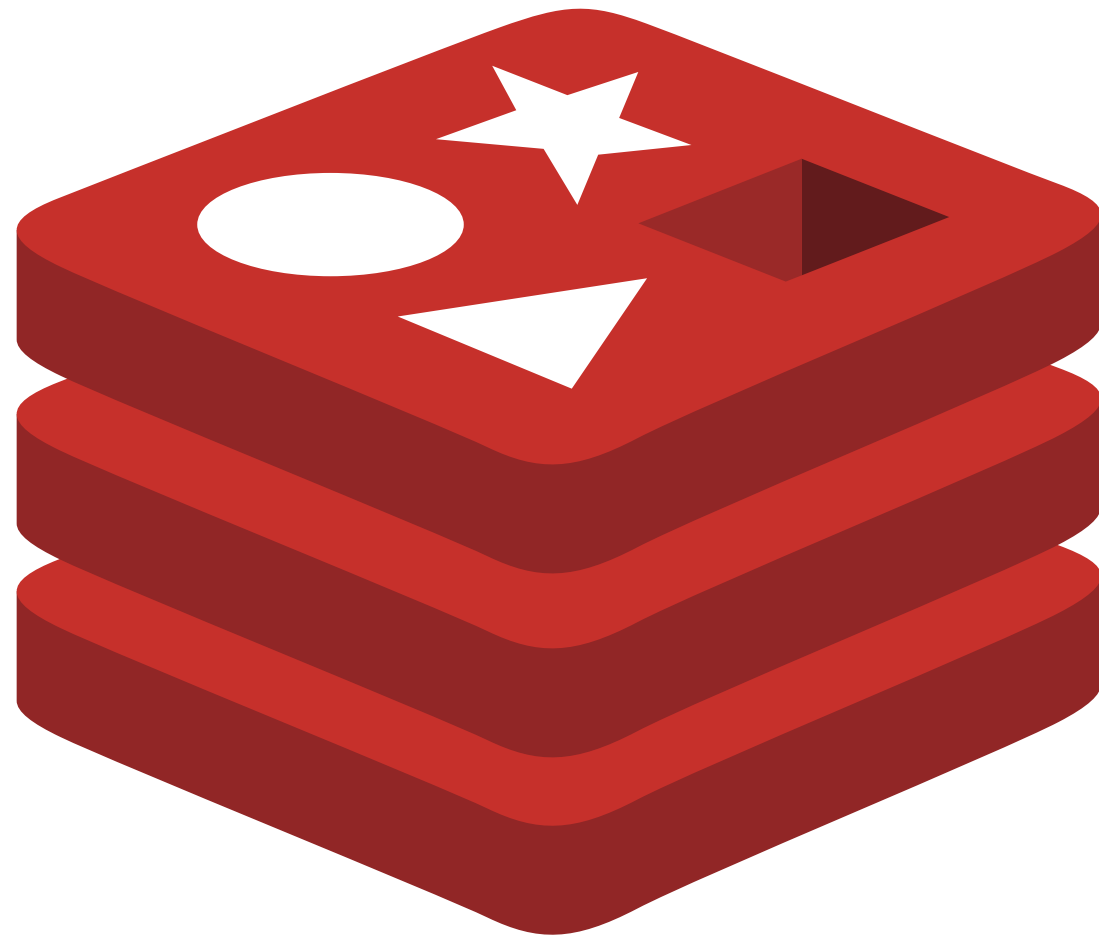


01.

Introduction

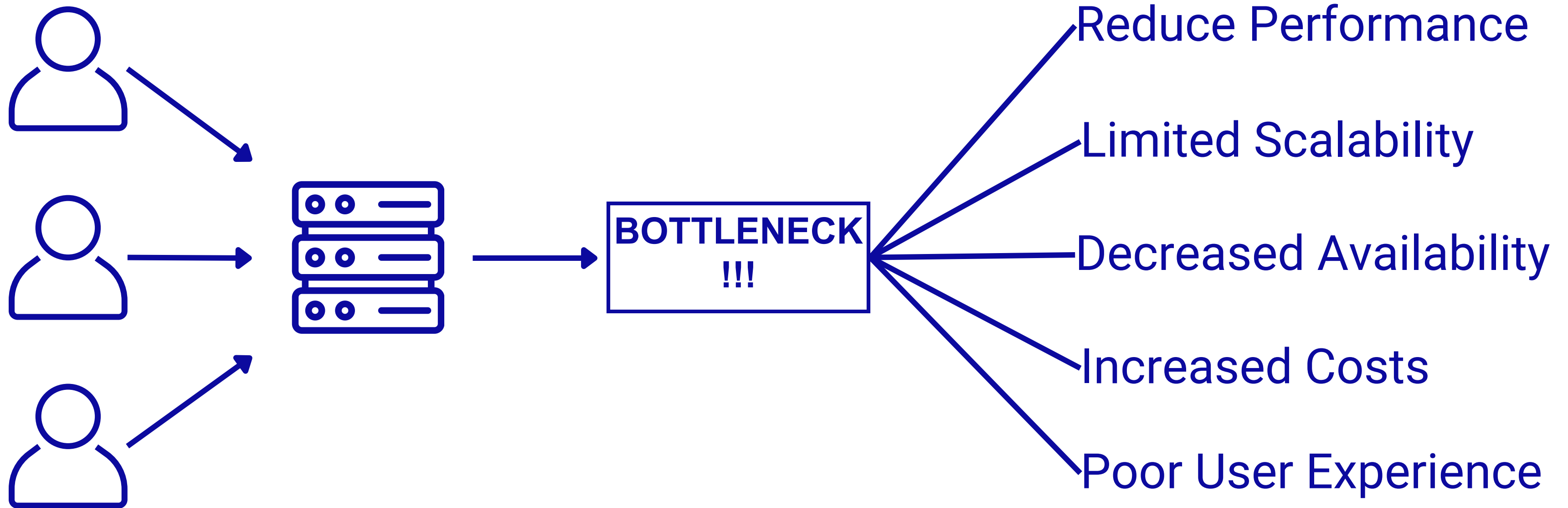


Redis

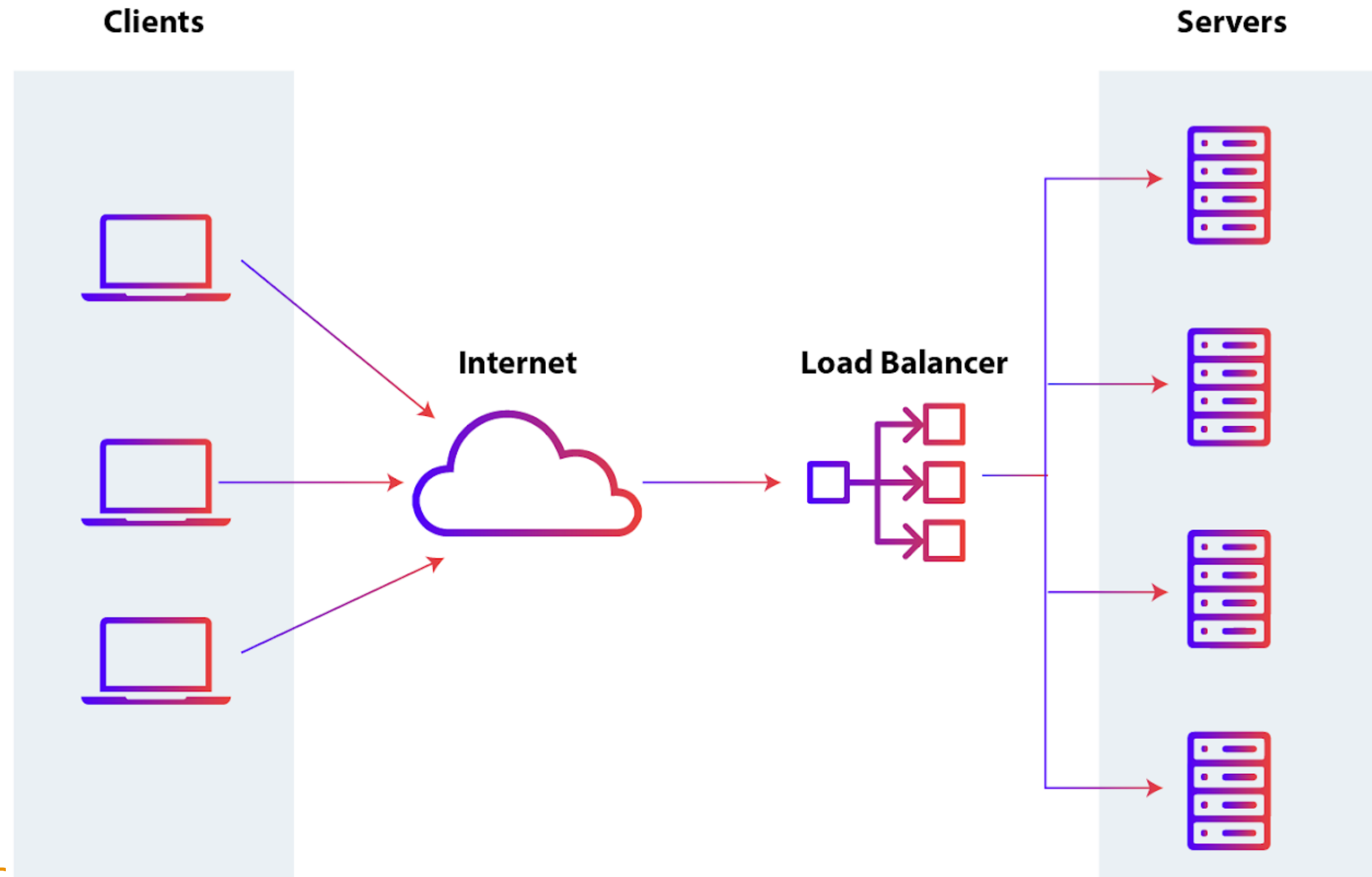


- Most popular NoSQL database
- Source-available
- In-memory storage
- Fast & efficient data retrieval

Bottleneck



Load Balancer



Objectives

- Design a system for loading balancer to Redis server.
- Run a small example to test the system.

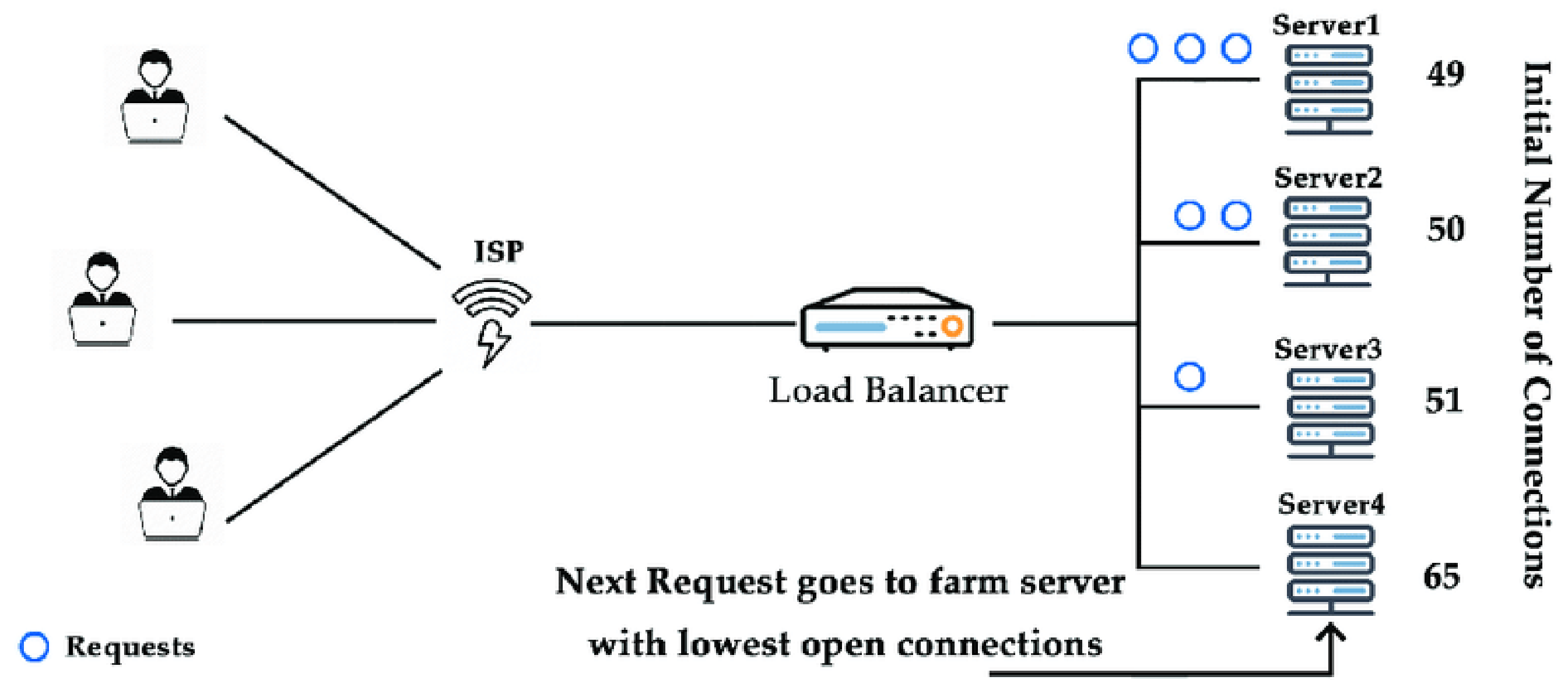


02.

System Design

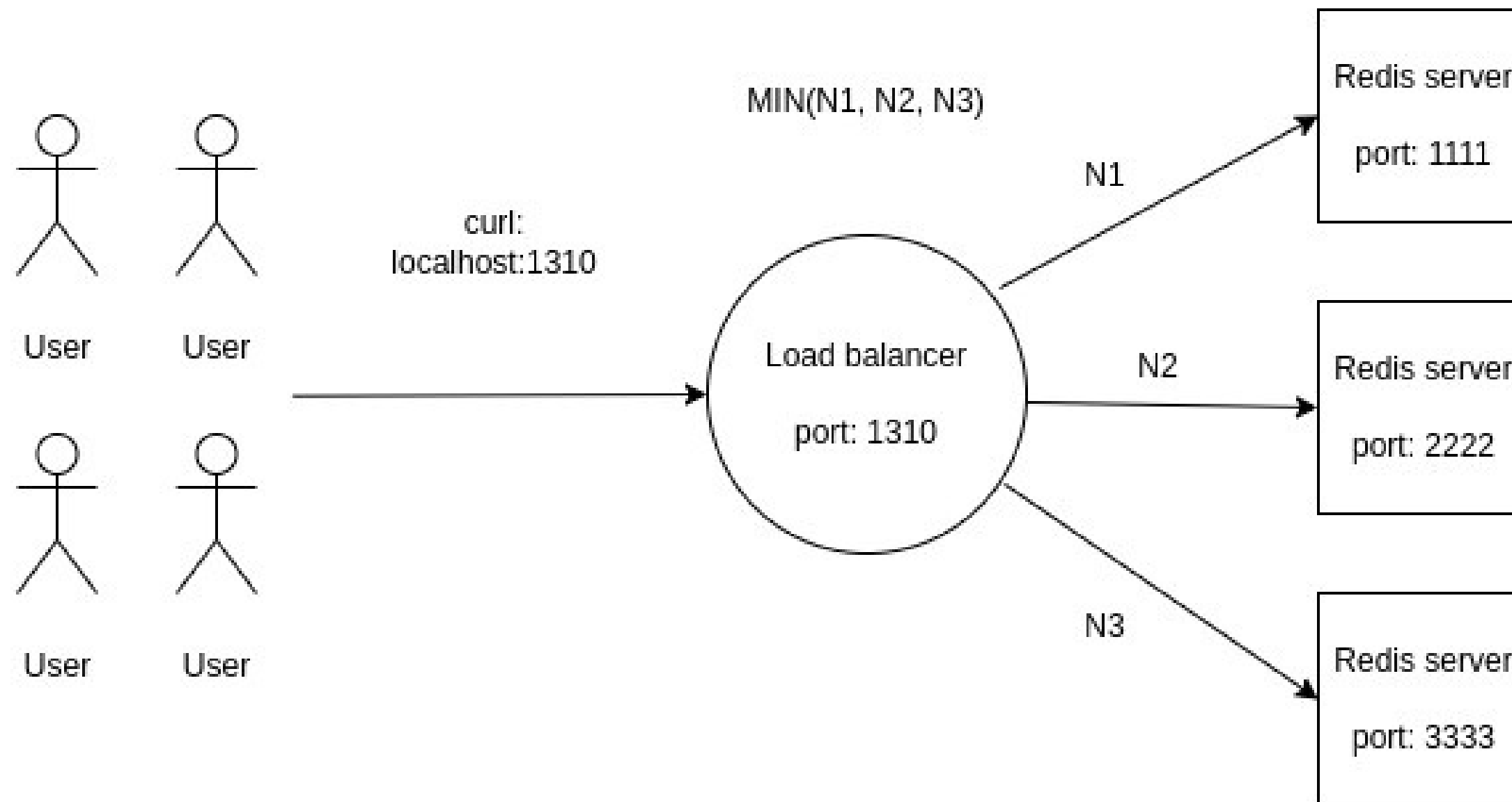


Least Connection Methods

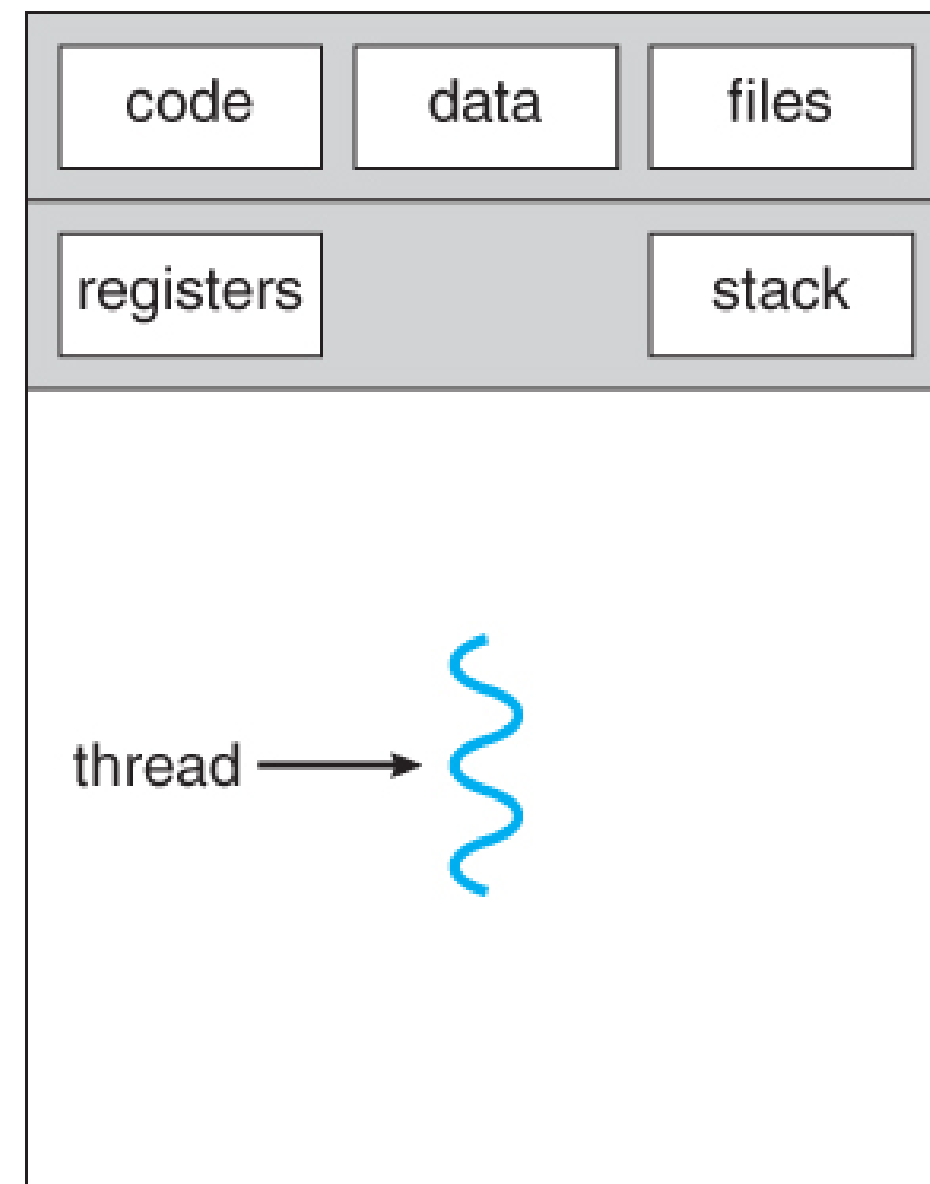


How it works?

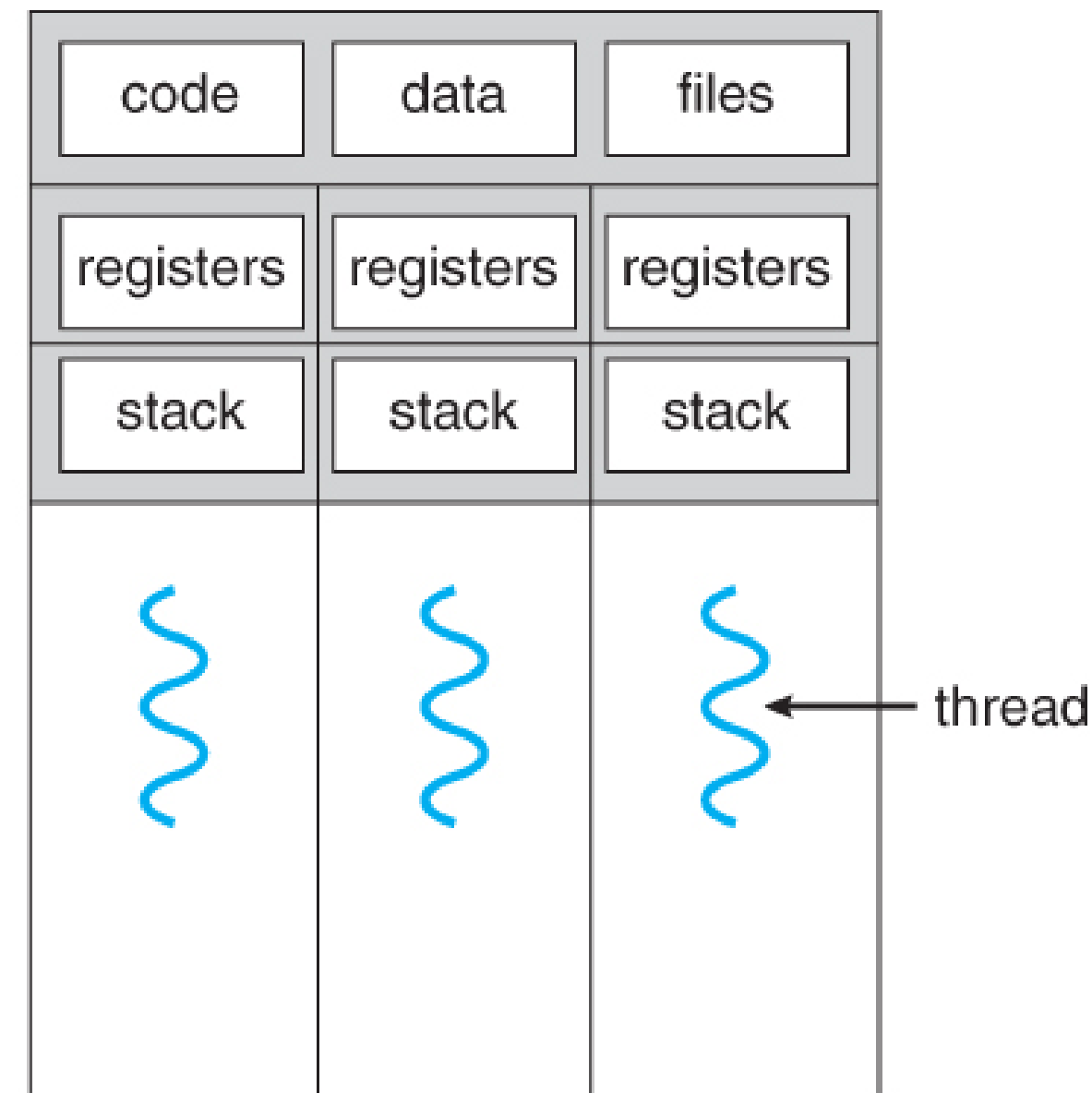
- The load balancer listens to the requests.
- The binding is done through the socket.



Multi-thread (to handle multiple clients at the same time)



single-threaded process

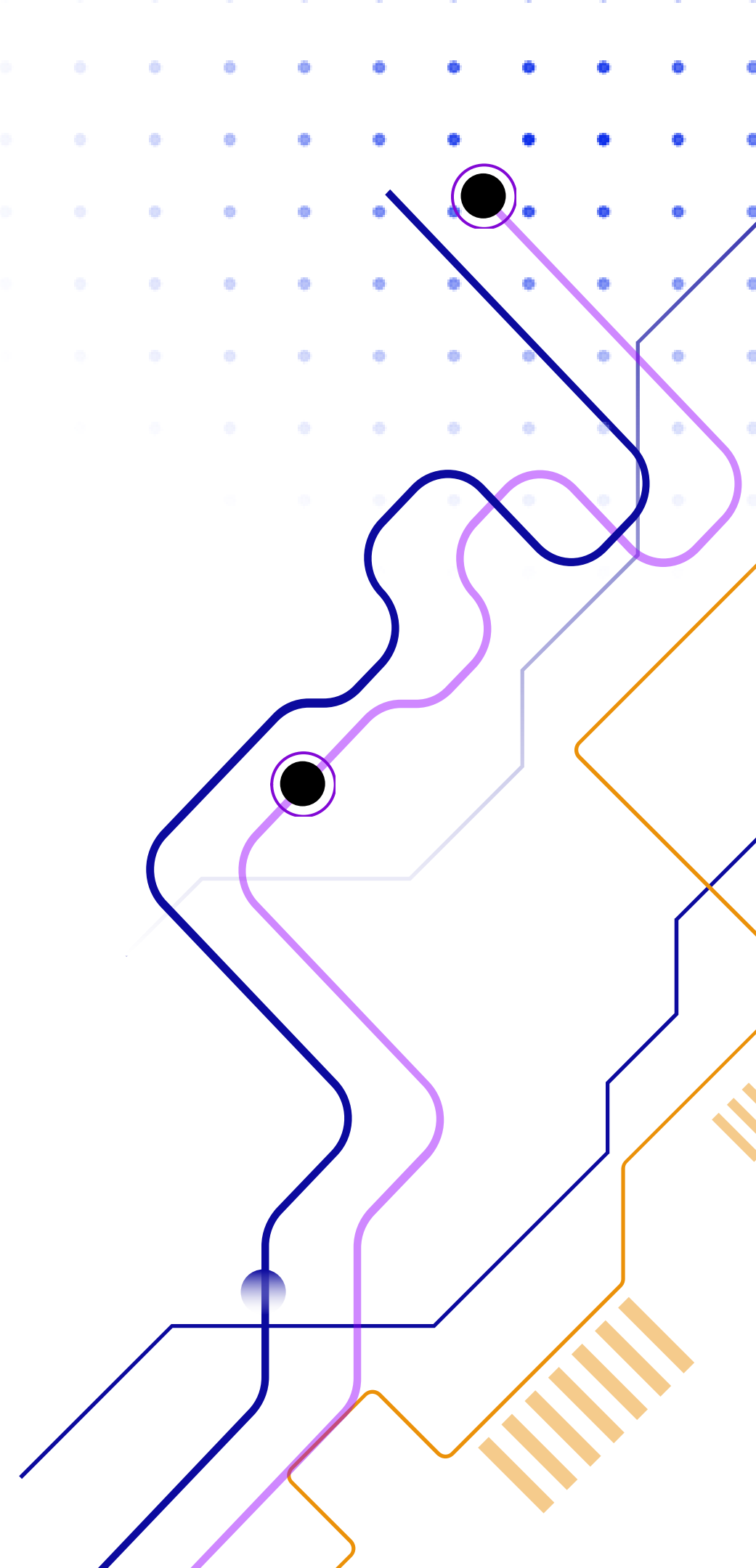


multithreaded process



03.

Application



Movie-database

- Data Source: <https://github.com/redis-developer/redis-datasets/tree/master/movie-database>
- Contains 1319 actors as Redis Hash
- 4 features:

actor.id: the key of the hash

first_name: First Name

last_name: Last Name

date_of_birth: Year of birth

```
HMSET "actor:1" first_name "Chris" last_name "Pratt" date_of_birth 1979
HMSET "actor:2" first_name "Zoe" last_name "Saldana" date_of_birth 1978
HMSET "actor:3" first_name "Dave" last_name "Bautista" date_of_birth 1969
HMSET "actor:4" first_name "Vin" last_name "Diesel" date_of_birth 1967
HMSET "actor:5" first_name "Bradley" last_name "Cooper" date_of_birth 1975
```

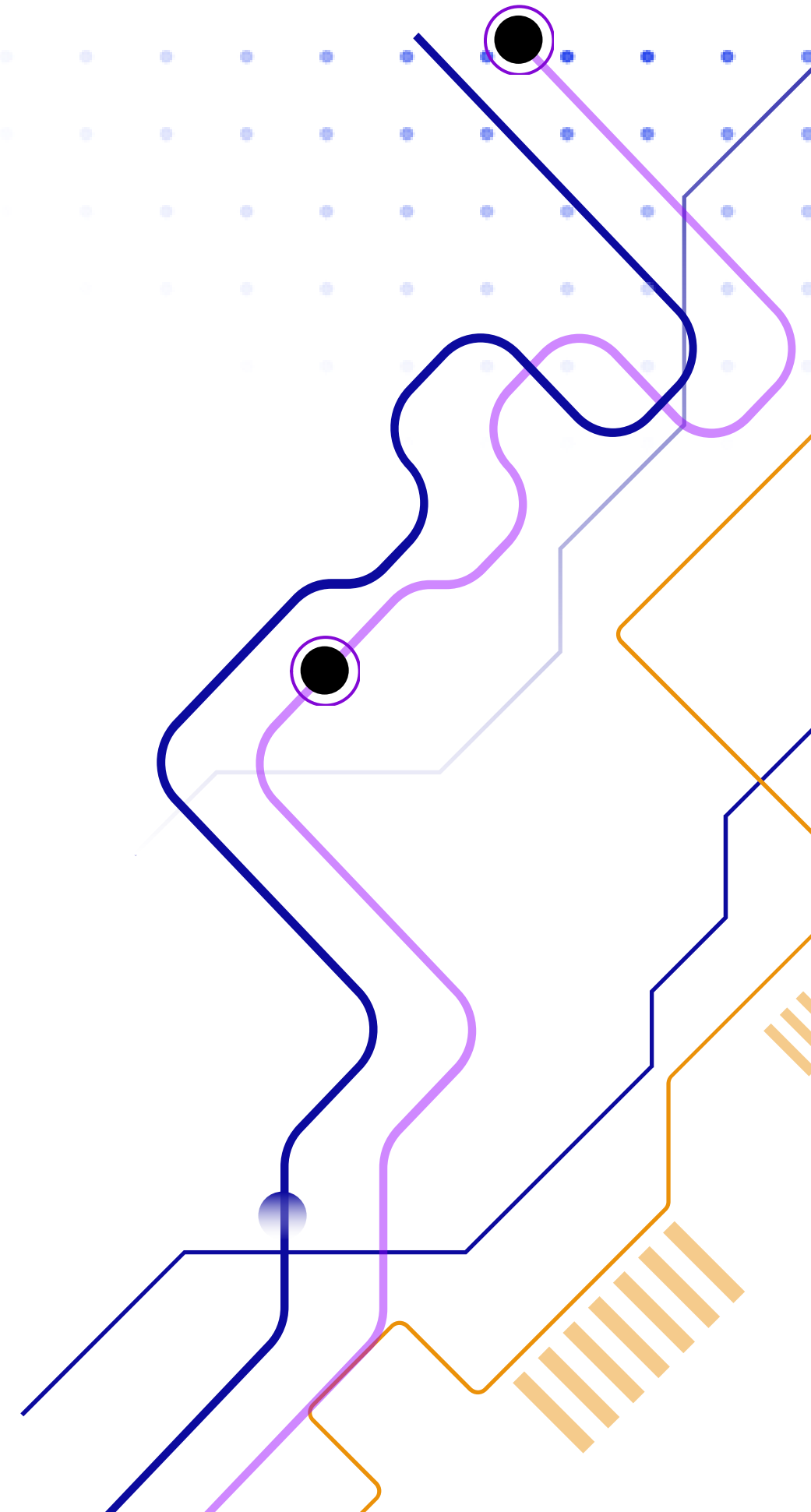
Example of dataset.

Demo Video





04. Conclusion



What we did?

Successfully build a load balancer system

Future Works

- Fault-tolerance
- Test on multiple machines with different environments

Problems

- Inefficient Connection Management
- Blocking Operations





Thanks!

Do you have any questions?

