CS 744 Project Presentation

HTTP Key-Value Server

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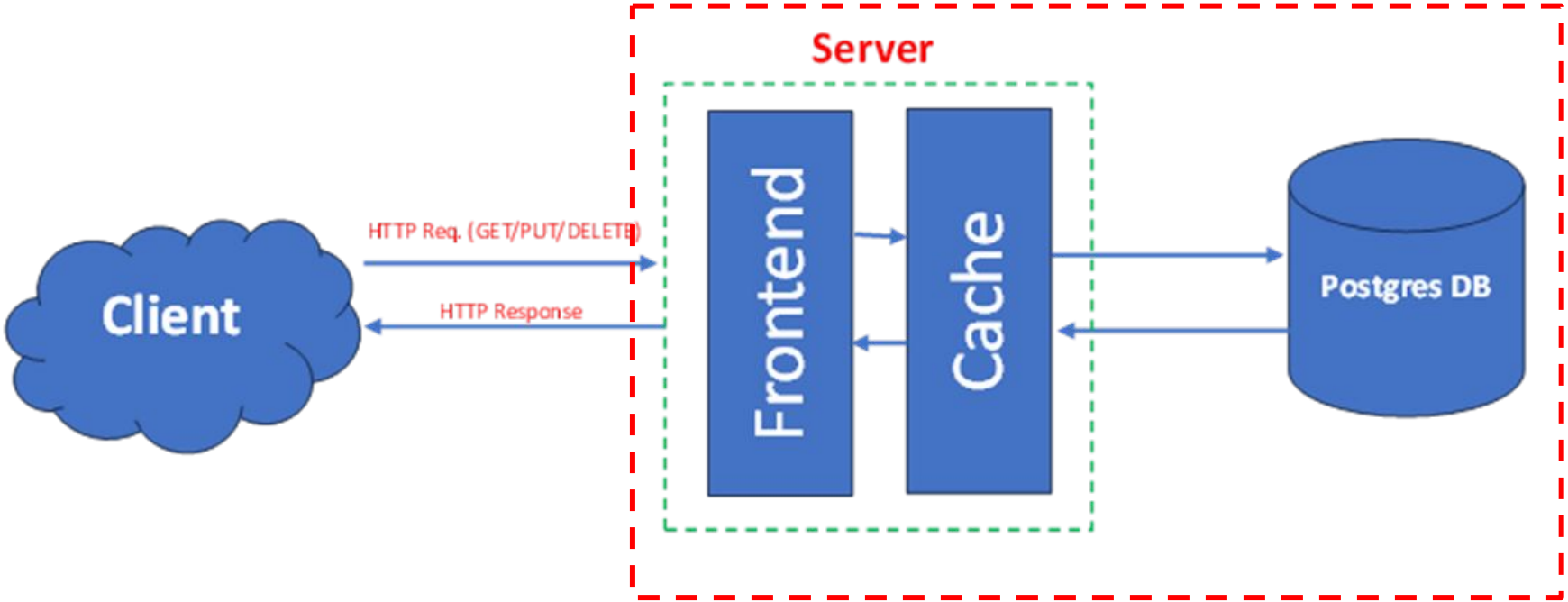
System Architecture



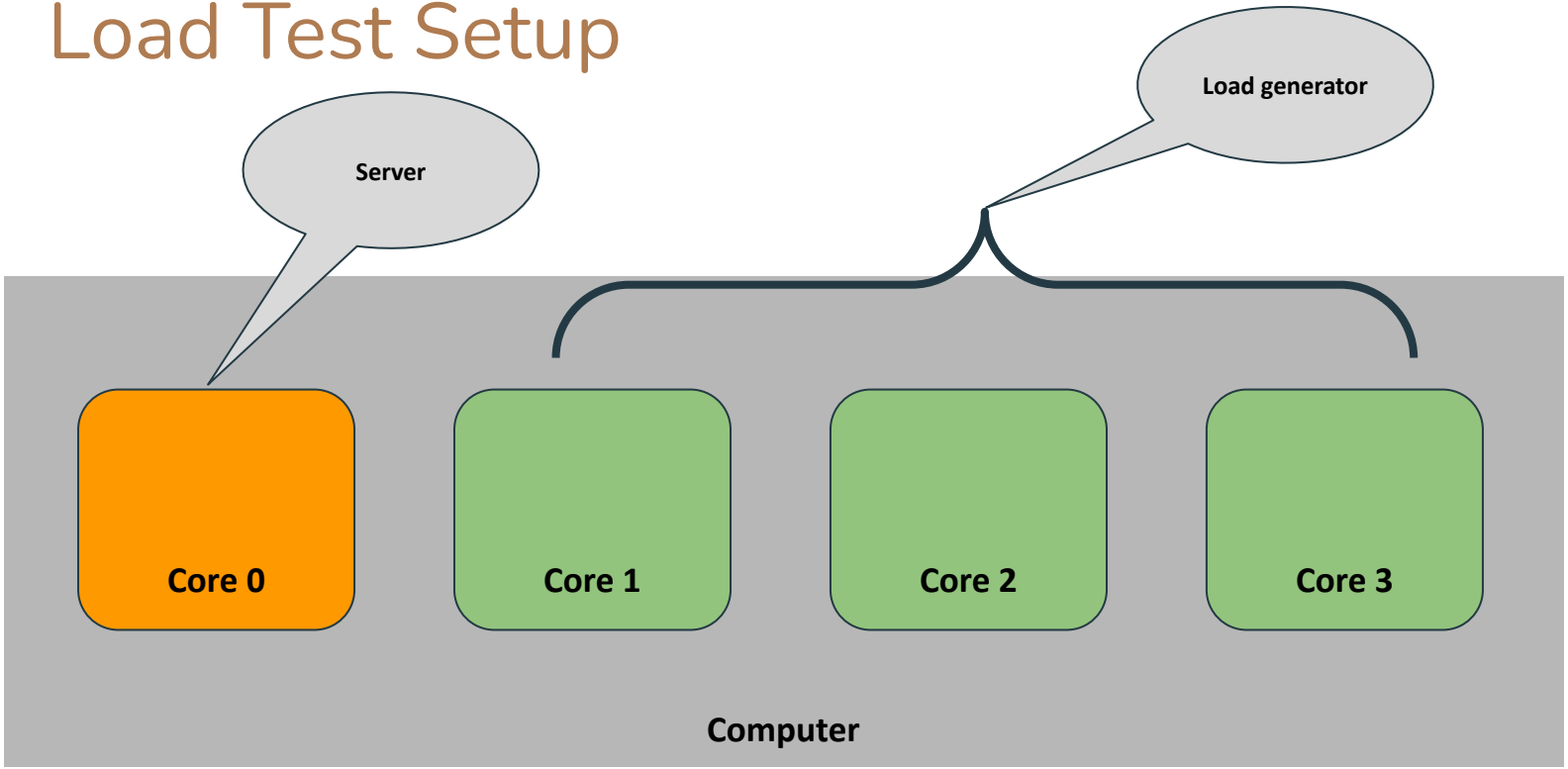
System Development

- **Code: 500 LoC**
- **Third Party Libraries: cpp-httplib , libpqxx-dev, matplotlib**
- **Github Link: https://github.com/silent-learner/Key-Value-Store--DECS-Project-**

Load Generator Design

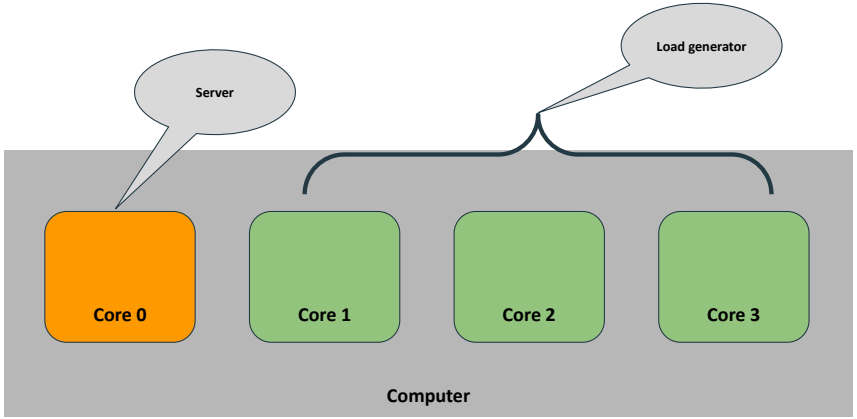
- **Closed Loop Load Generator**
- **Pinned on 3 cpu cores, while server running on 1 core.**

Load Test Setup



Load Test Setup

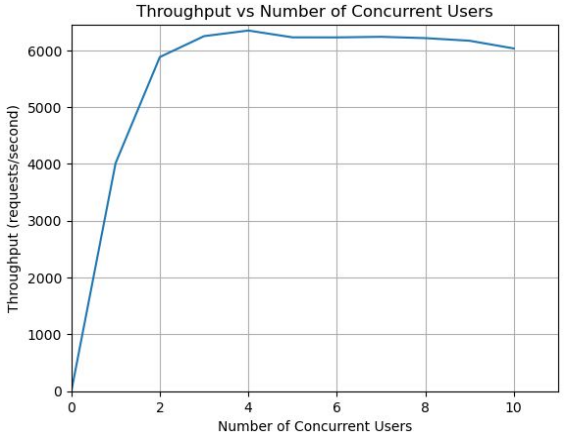
- Types of workload:
  - Get_popular (CPU bound)
  - Put_all (I/O bound)
- Metrics
  - Throughput
  - Response Time
  - CPU utilization
  - Disk I/O utilization
- For each experiment we measure metrics after running the system for 2 min.

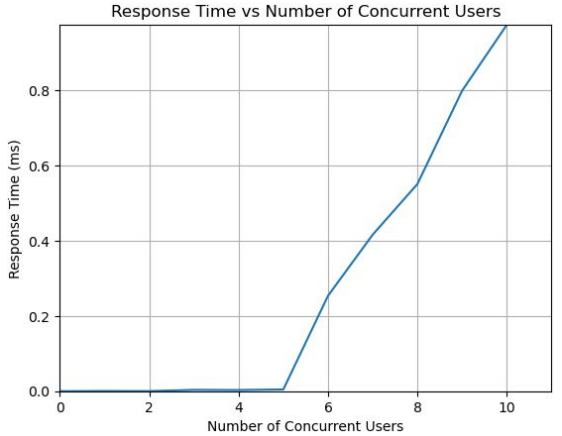


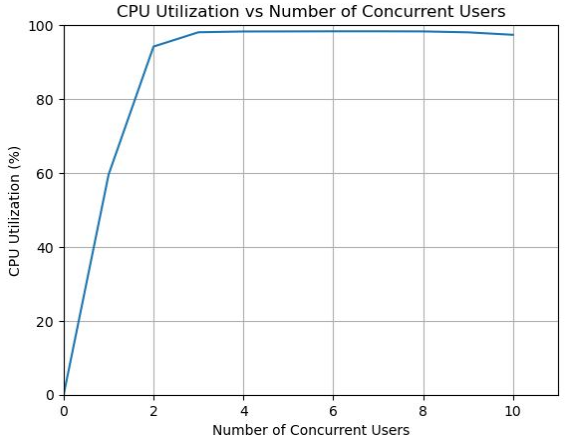
Machine specs:

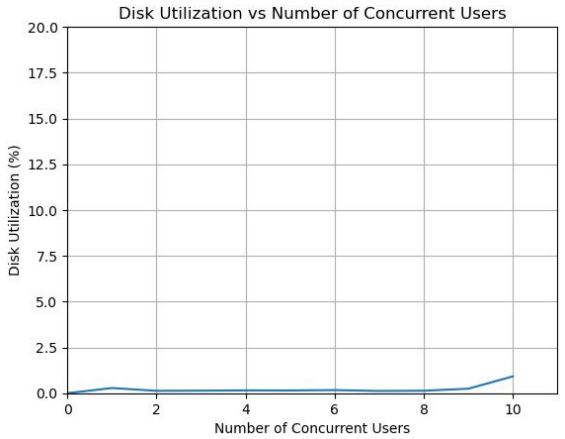
- **Ubuntu 24.04.2 LTS**
- **Intel i5@2GHz**
  - **4 cores**
- **8GB RAM**
- **1TB SSD**

Load Test Results (CPU Bound Workload)

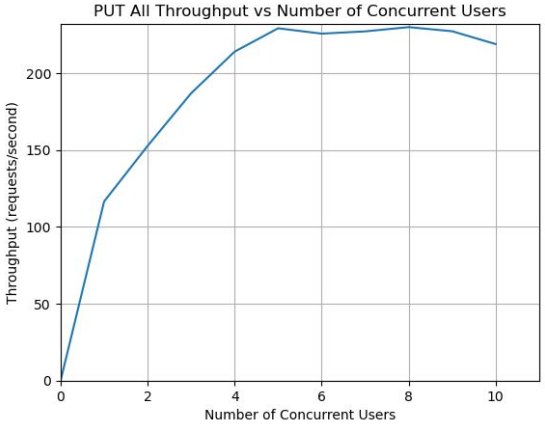


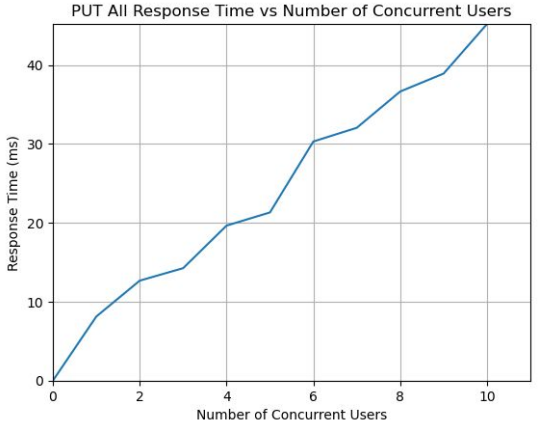


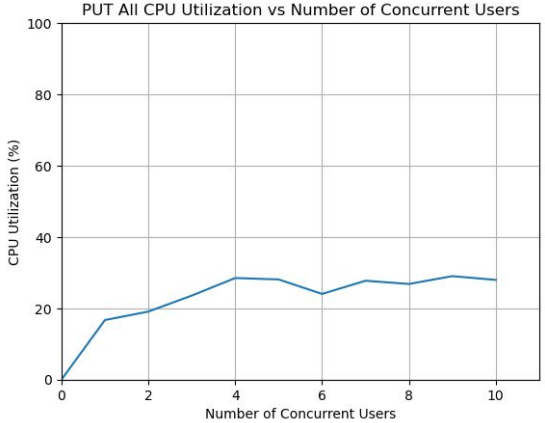


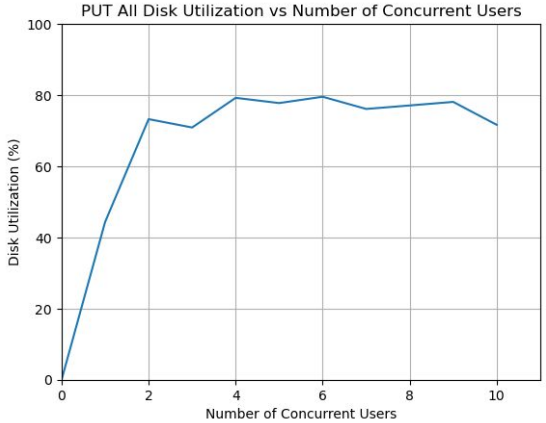


Load Test Results (I/O Bound Workload)









Thank you