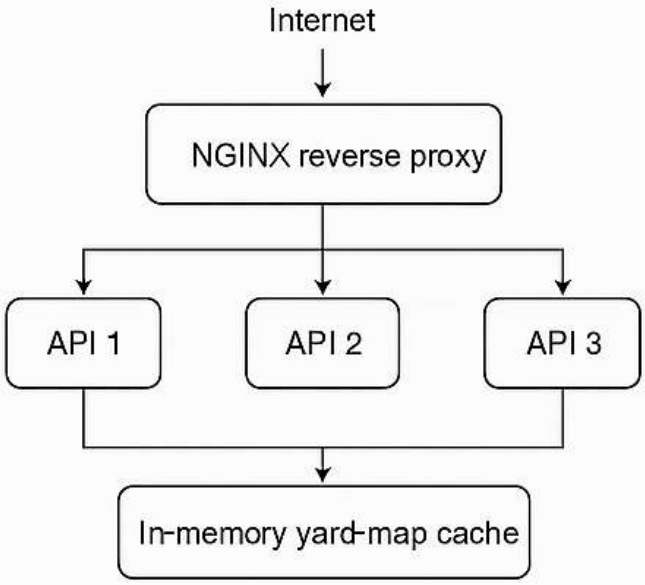
System Design

Design a System That Stays Fast Under Heavy Traffic

Traffic Profile

Requests per secomprond	≤ 100 rps
Peak Hour (monsoon bacbacklog)	≤ 500 ms



1. How It He Handles Traffic

- Three servers x̀ =400 rps:̇ 3 sers/S˙ON; no thing stored befween calls
- 55th more if˙traffic ›

2. Keeping It Fast

- Stateless — each request carrys its owne JSON; no thing stored call info.
- Local caching — yard-maps stored in a Hash Map; total 5 T̄bȯ\.
- No database in in hot path: avoid$ extra latency

3. Simple Monitoring

- Shell script pinging /healthz every 30 seconds; send alert if >300 ms.
- NGINX accest logs feed visual reports showing P95 latency, 4xx. 4xx error:ates

4. Failure Story

- If an API crashes, NGINX stops forwarding traffic to its port, remaining APIs handle traffic.

5. Blue-Green (Manual)

- Run new jars on port 9000 › hit /pick 6poc t locally, add the now jar