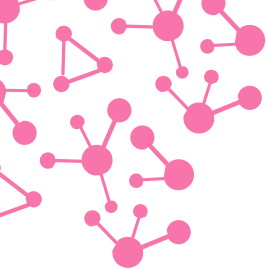
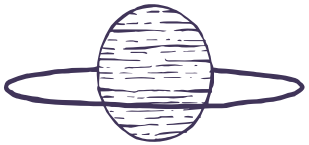
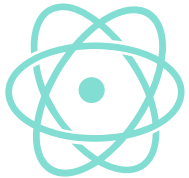






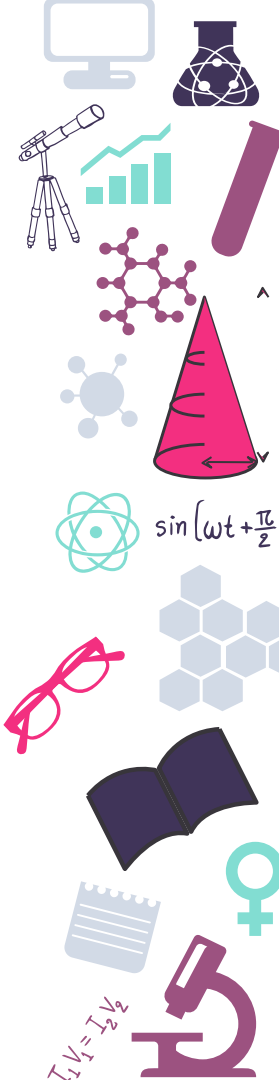
Performance testing

Hien HOANG

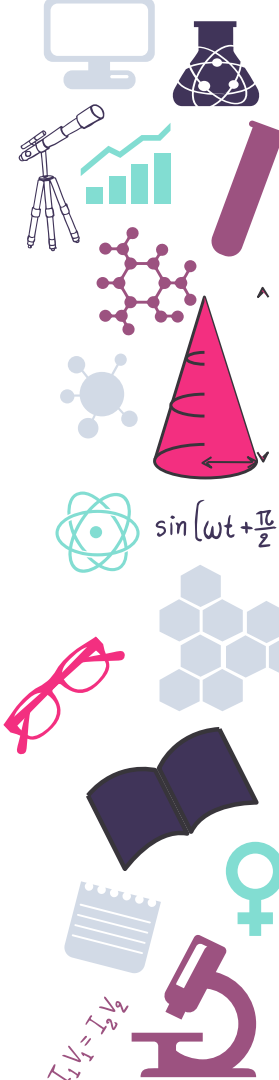
Hello!

I am Hien HOANG

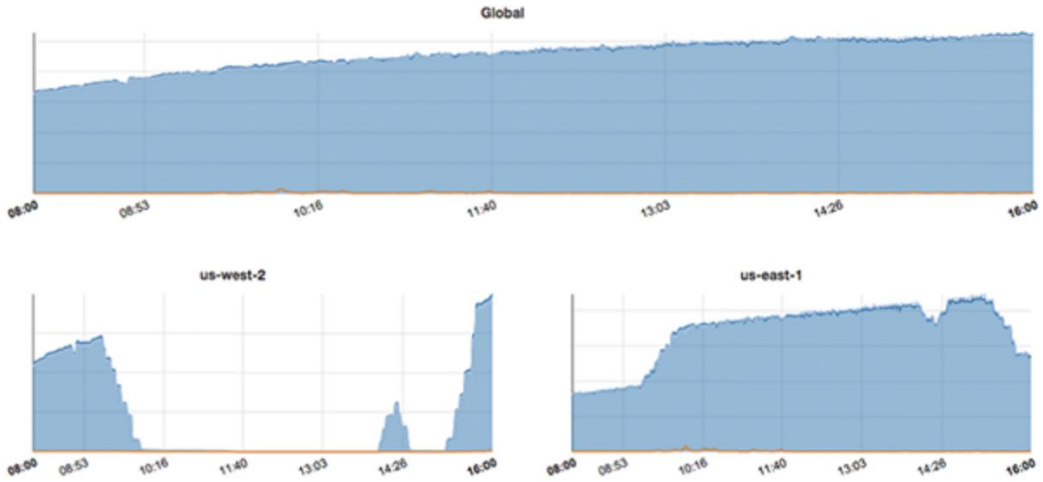
I am here because I love performance testing.



Why performance testing



NETFLIX



Chaos Kong exercise in progress

September 20th, 2015

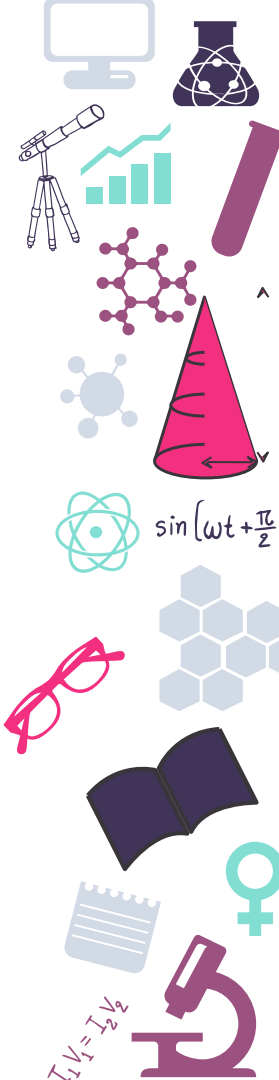
“If an e-commerce site is making $100,000 per day, 1-second page delay could cost $2.5 million in lost sales a year ”

“Front-end performance”
Link:
https://www.smashingmagazine.com/2019/01/front-end-performance-checklist-2019-pdf-pages/

“Back-end performance”

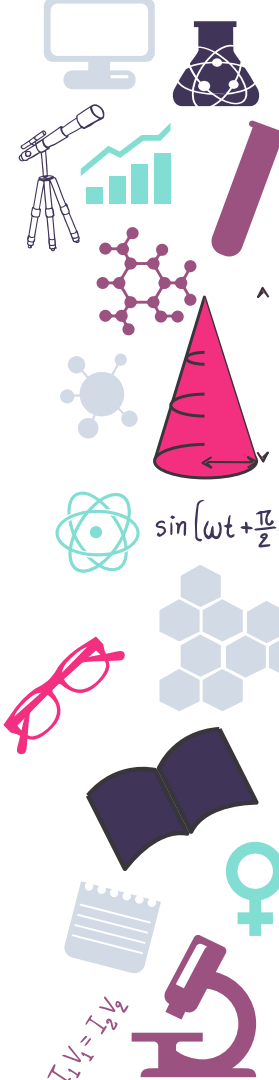
Performance criteria

- Response time: absolute response time, perceived response time,server processing time,rendering time,network latency
- Throughput
- Utilization
- Scalability: horizontal scalability vs vertical scalability



Testing type

- Load Tests
- Peak Load Tests
- Stress Tests
- Endurance Tests
- Scalability Tests
- Spike Tests
- Scalability Tests



STRATEGY

- Performance requirements : SLA
- Performance goals
- Performance test suite
- Performance reporting & analysis
- Performance tuning

Demo: Digital Toys

Performance goals

	Min time	Avg. time	Max time
Web	2s	4s	6s
Use-cases	60s	90s	120s

Resource	Utilization
CPU	60
Memory	50
Network	10

Performance requirements

Landing page

1. Home page
2. Browse product

User registration

1. Home Page
2. Sign Up
3. Submit form
4. Logout

Ordering

1. Home page
2. Login
3. Product catalog
4. Details
5. Add to cart
6. Check out
7. Fill ship address
8. Credit card
9. Place order
10. Order history
11. Sign out

Performance requirements(con.)

Order 2nd. time

1. Home page
2. Login page
3. Product catalog
4. Details
5. Add to cart
6. Checkout
7. Place order
8. Order history
9. Log out

Edit shipping address

1. Home Page
2. Login page
3. Product catalog
4. Shipping address
5. Logout

Edit payment info

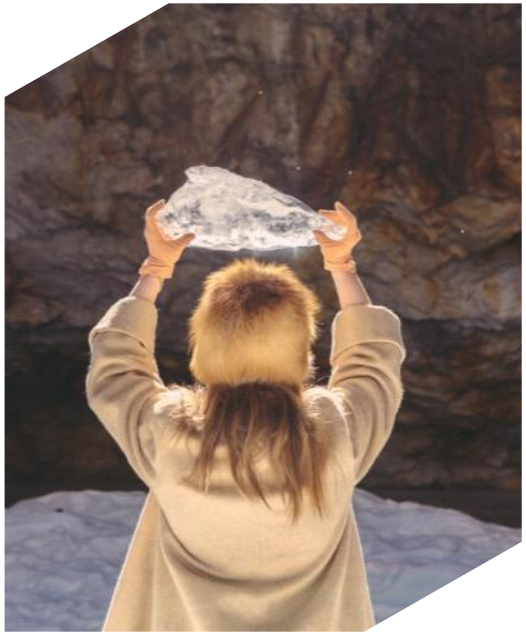
1. Home page
2. Login
3. Product catalog
4. Add credit details
5. Sign out

Performance requirements(con.)

Using the continue shopping option

1. Home page
2. Login page
3. Product catalog
4. Details
5. Add to cart
6. Continue shopping
7. Checkout
8. Billing address
9. Credit card details
10. Place order
11. Order history
12. Sign out

Error rate: <0,1%



Test Environment

Time-consuming for setup new hardware & have no budget

=> Repurpose existing functional testing infrastructure.

Test data preparation

Step 01

Use production data

Step 02

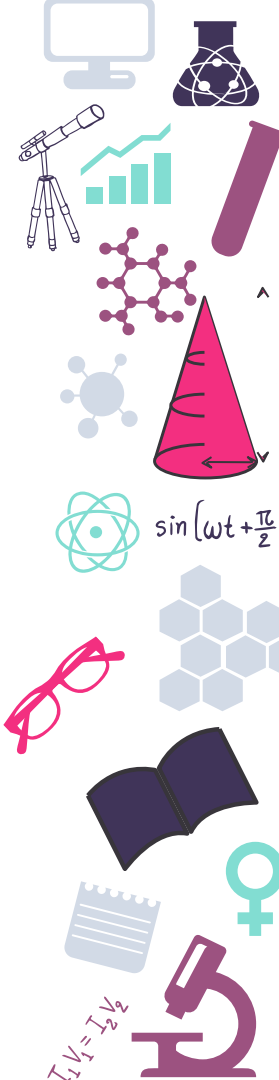
Obfuscate critical & personal identifying data

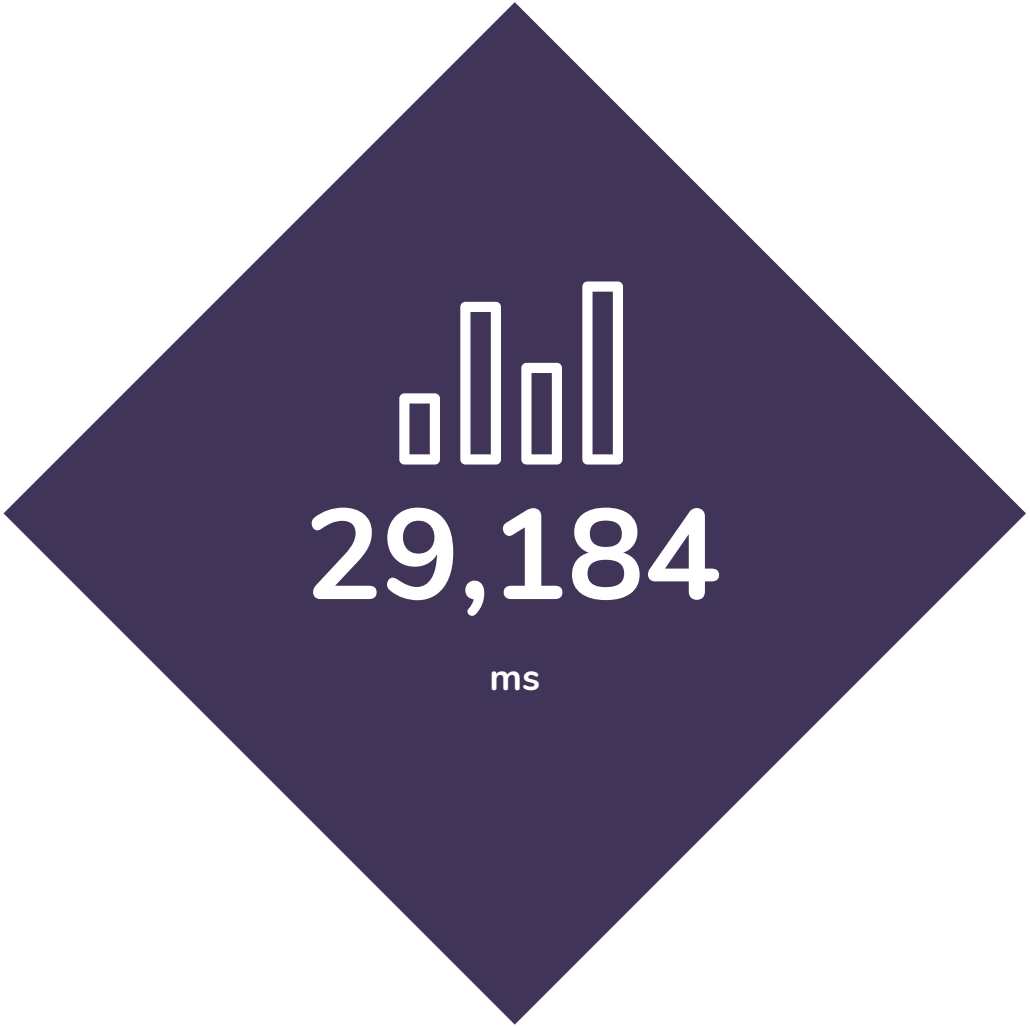
Step 03

Test data

User Load Pattern

Variable	Result
The count of users who are logged in at one point in time.	100,000
User-case and percentage of users(Workload)	Browsing catalog: 10% Ordering first time: 60% Ordering second time: 10% Changing address: 5% Changing payment info: 5% Continue shopping: 10%
Load duration	1 -> 2 hours

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Thanks!

Any questions?