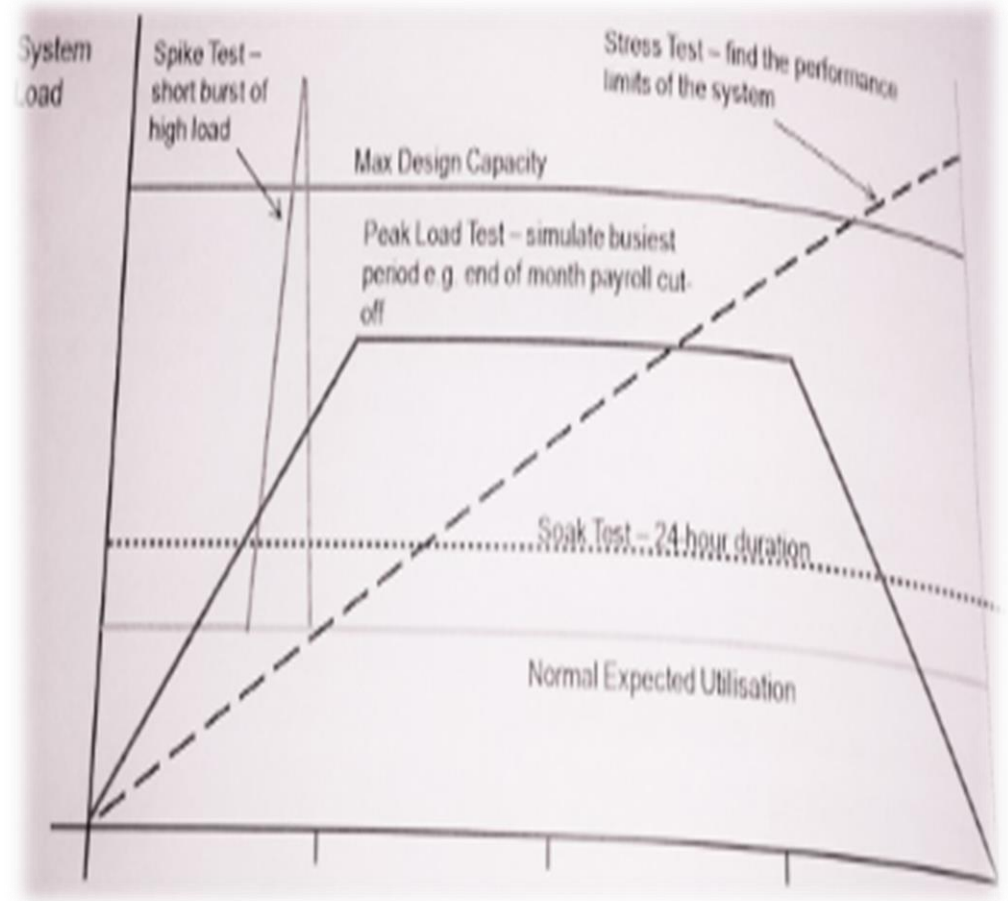# Performance Testing

Prepared by: Adrian Bala
24 November 2016

- Introduction

- Apache JMeter™ 3.0

- Summary

http://media.nbcchicago.com/images/1200*676/messy-desk+2.jpg

- Load testing

- Stress testing

- Endurance testing

- Spike testing

Advanced Software Testing – ISTQB®

Performance Testing – Why?
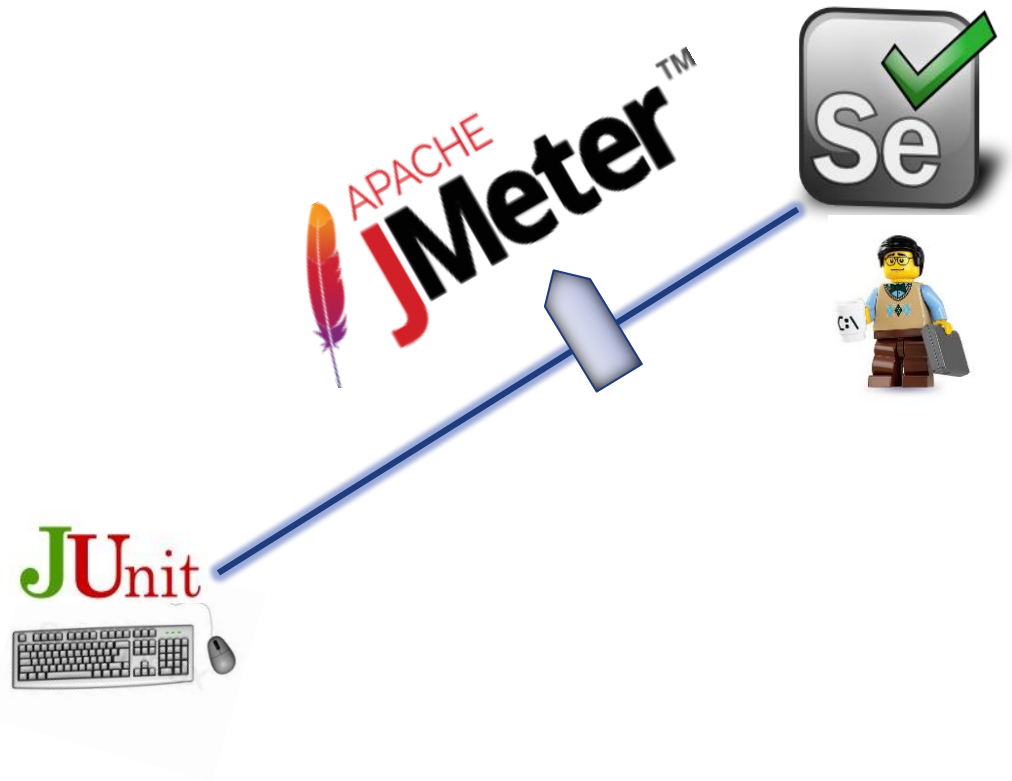
- Make sure it will work

- To SAVE

- To compare

HAVE YOU TESTED YOUR CODE UNDER STRESS?

NO, BUT I'VE WRITTEN IT UNDER STRESS

geek & poke

http://www.techbrother.com/wp-content/uploads/2013/09/geek_and_poke_coders-test-s.jpeg

GFT ■

The **Apache JMeter™**

application is open source

software, a 100% pure

Java application designed

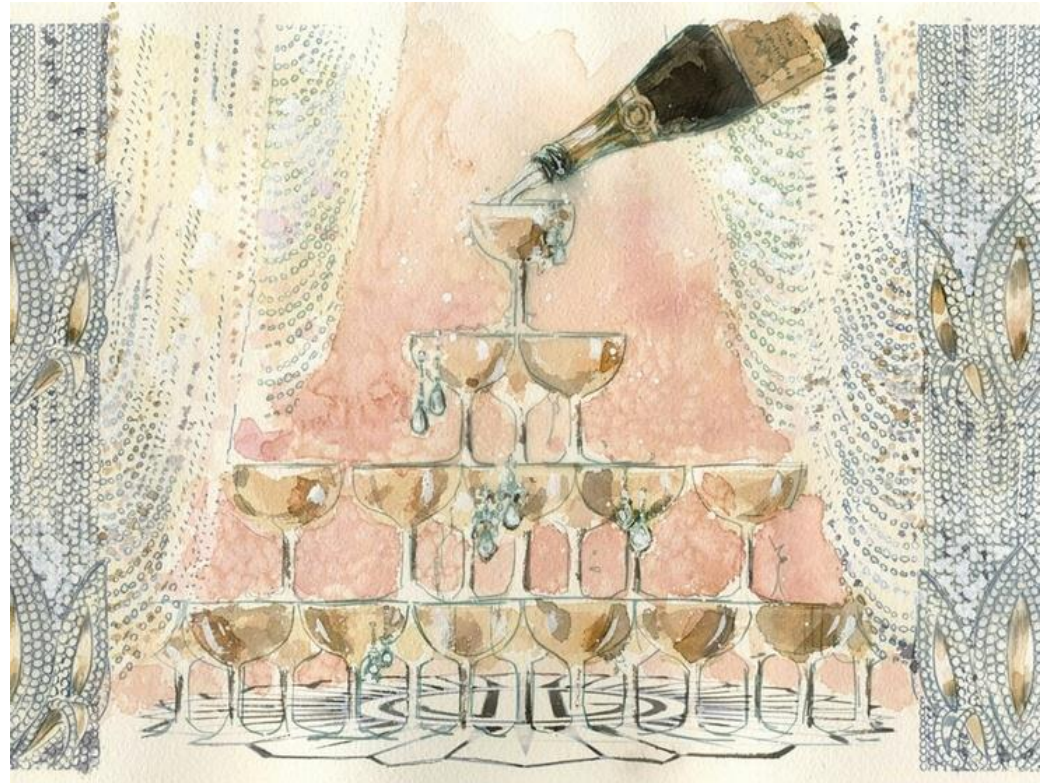to load test functional

behavior and **measure**

performance.

http://jmeter.apache.org/

http://www.testwarez.pl/apache-jmeter-3-0/

Performance Testing – Why?

- ○ Test Plan
  - • Thread Group
  - • Variables – Native, User Defined
  - • Managers – Cookie, Header
  - • Timers – Constant, Random
  - • Conditions – IF, WHILE
  - • Loops – LOOP, FOREACH
  - • Listeners – Results Tree, Summary
  - • Requests – HTTP(S), JDBC
    - • Assertions – Response, Size
    - • Extractors – Regular Expressions
  - • (…)

https://s-media-cache-
ak0.pinimg.com/736x/8b/03/44/8b03446af10afd99ce1d259d26c4af76.jpg

GFT ◼

Performance Testing – Workshop

Molar Mass Calculator

Formula:	
MM [g/mol]:	
Instance:	
Info:	

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Uut	Uuq	Uup	Uuh	Uus	Uuo
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

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Backspace   Clear   Calculate

Example:

http://chem-calc.appspot.com/

Performance Testing – Exercises

level / exercise	E1	E2	E3	E4	E5	Extras
basic	**hello-world**	**multi-hello-world**	**multi-function-hello-world**	**setup-multi-function-hello-world**	**assert-setup-multi-function-hello-world**	**rec-play**
medium	**simple-get-post**	firebase-rest-api	google-translate-api	config-google-maps-api	regression-suite	JSR223
advanced	sqlite-jdbc	**stress-test**	ftp-test	jms-queue	chess-game	**blaze-meter**

https://github.com/AdBj/tw16-jmeter-workshop

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uam-start.bat

jmeter -n -t .\uam-start.jmx -l .\uam-start-results.jtl

https://github.com/AdBj/tw16-jmeter-workshop

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Performance Testing – Tasks

uam-performance.bat

jmeter -n -t .\uam-performance.jmx -l .\uam-performance-results.jtl

https://github.com/AdBj/uam-performance

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Performance Testing – Summary

Apache JMeter™ 3.0 qualities:

- ✓ speed
- ✓ portability
- ✓ multithreading
- ✓ usability
- ✓ configurability
- ✓ upgradability
- ✓ automation
- ✓ free

https://www.knife-depot.com/images/articles/best-pocket-knife-victorinox-swisschamp.jpg

Performance Testing – References

- Bayo Erinle – JMeter Cookbook

- Bayo Erinle – Performance Testing with JMeter

- Adam Roman – Testowanie i jakość oprogramowania. Metody, narzędzia, techniki

- Adam Roman, Karolina Zmitrowicz – Testowanie oprogramowania w praktyce. Studium przypadków

- Apache JMeter™ 3.0 – http://jmeter.apache.org/index.html

- Custom Plugins for Apache JMeter™ 3.0 – http://jmeter-plugins.org/

- GitHub API – https://developer.github.com/v3/

- REST – https://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm

- Firebase RESTful API – https://firebase.google.com/docs/reference/rest/database/

- Google Maps API – https://developers.google.com/maps/documentation/distance-matrix/

- BlazeMeter – https://www.blazemeter.com/

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Thank you!

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