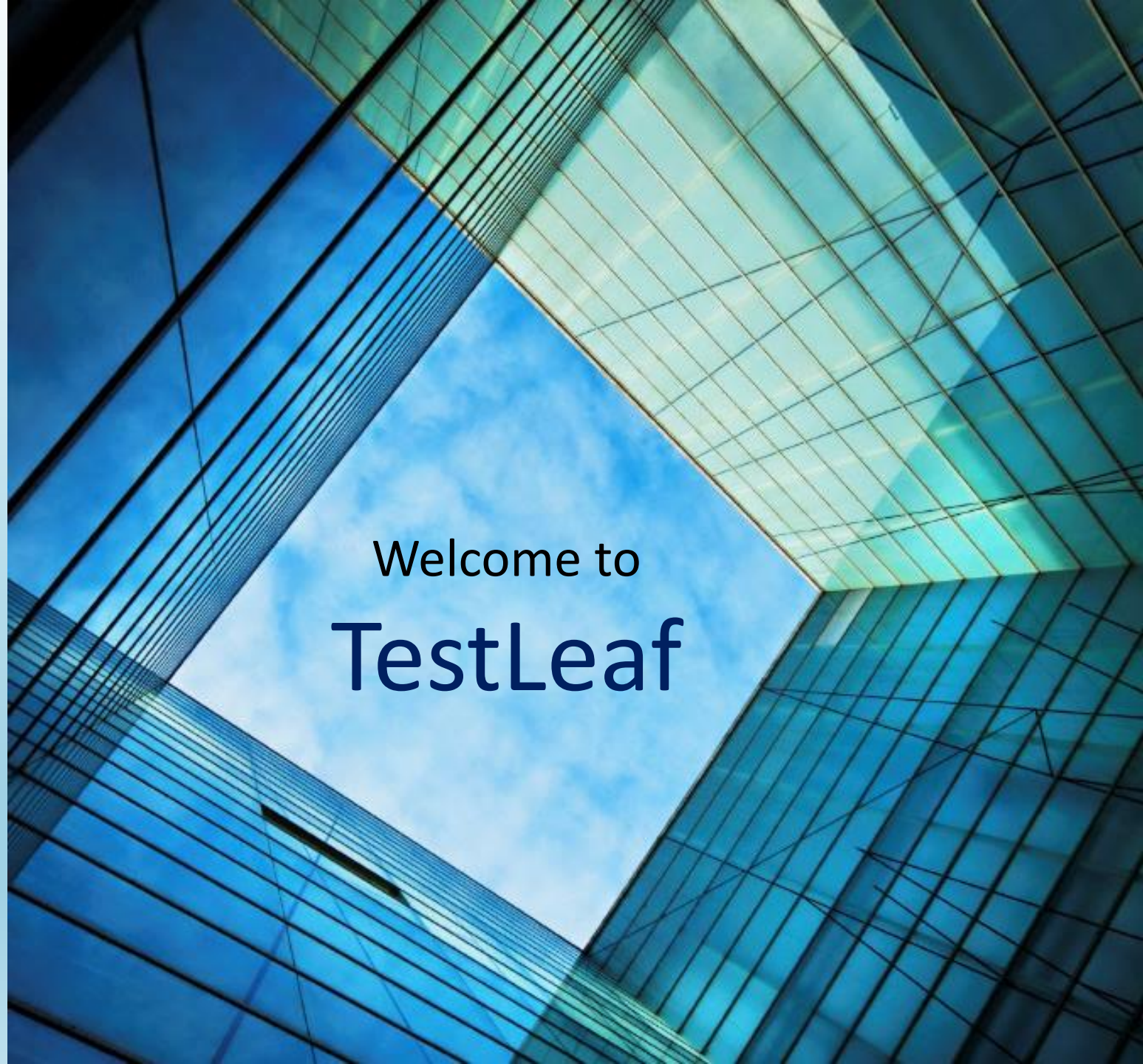
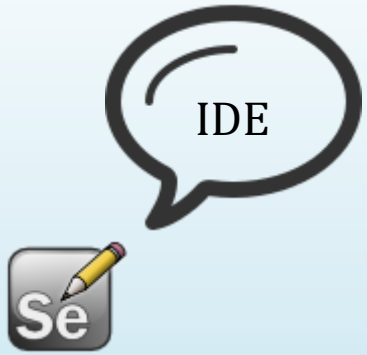
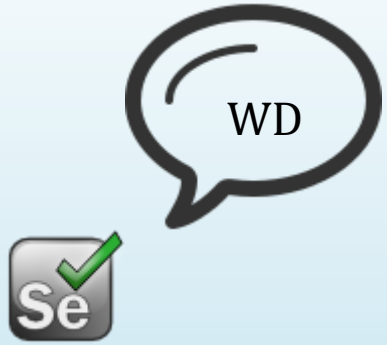
Remote, Parallel Test Execution –

Using Selenium Grid, TestNG





- Record and Playback tool
- Only Firefox add in
- Create quick bug reproduction scripts



- Create robust java based script
- Run with any browser
- Only in local machine
- Can Parameterize, handle exception, take snapshot

- Can execute remotely
- Scale and distribute scripts across many environments

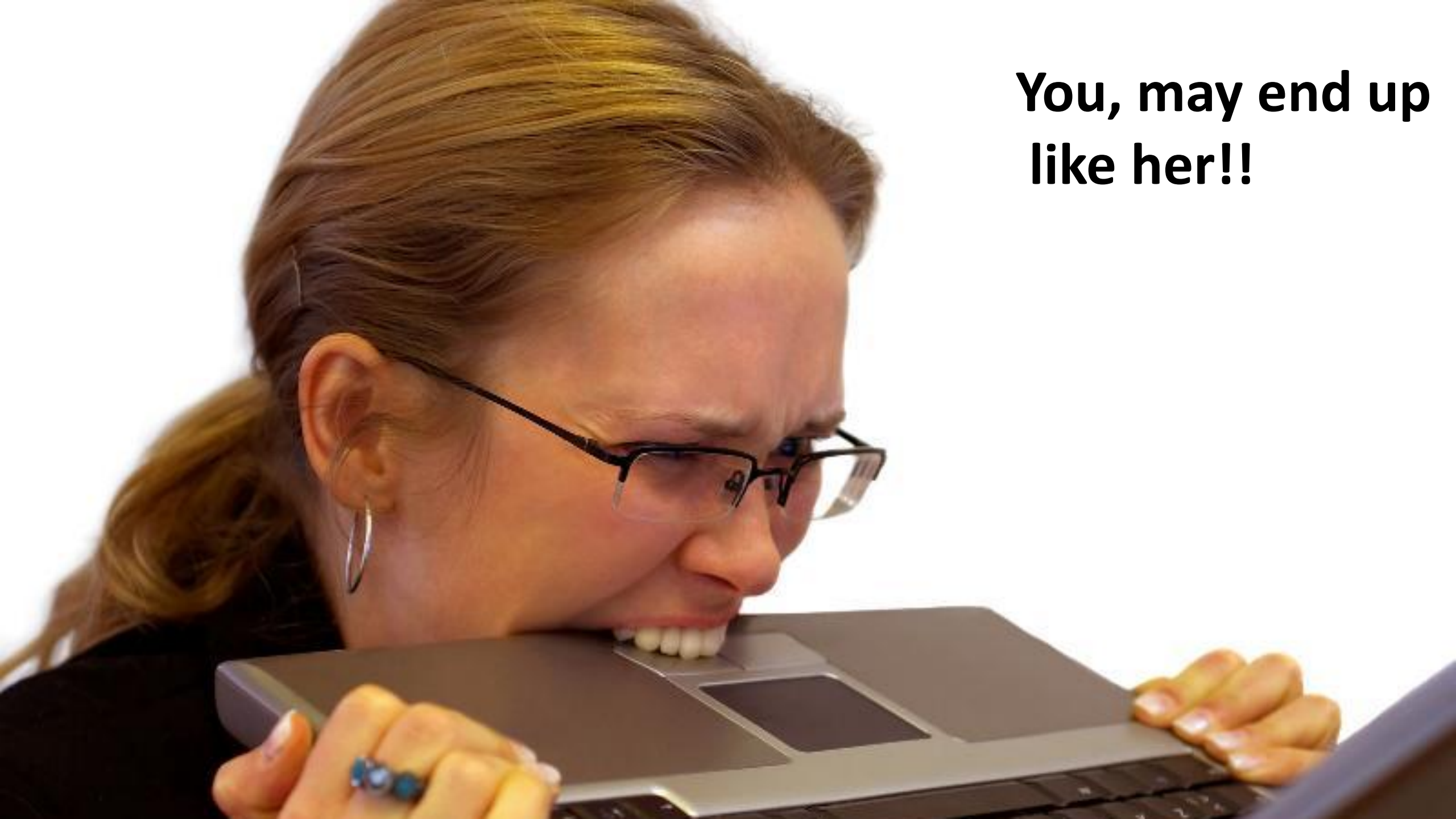
Selenium Components

1. Every OS version that your application supports
2. Every browser supported by your app
3. Every browser version

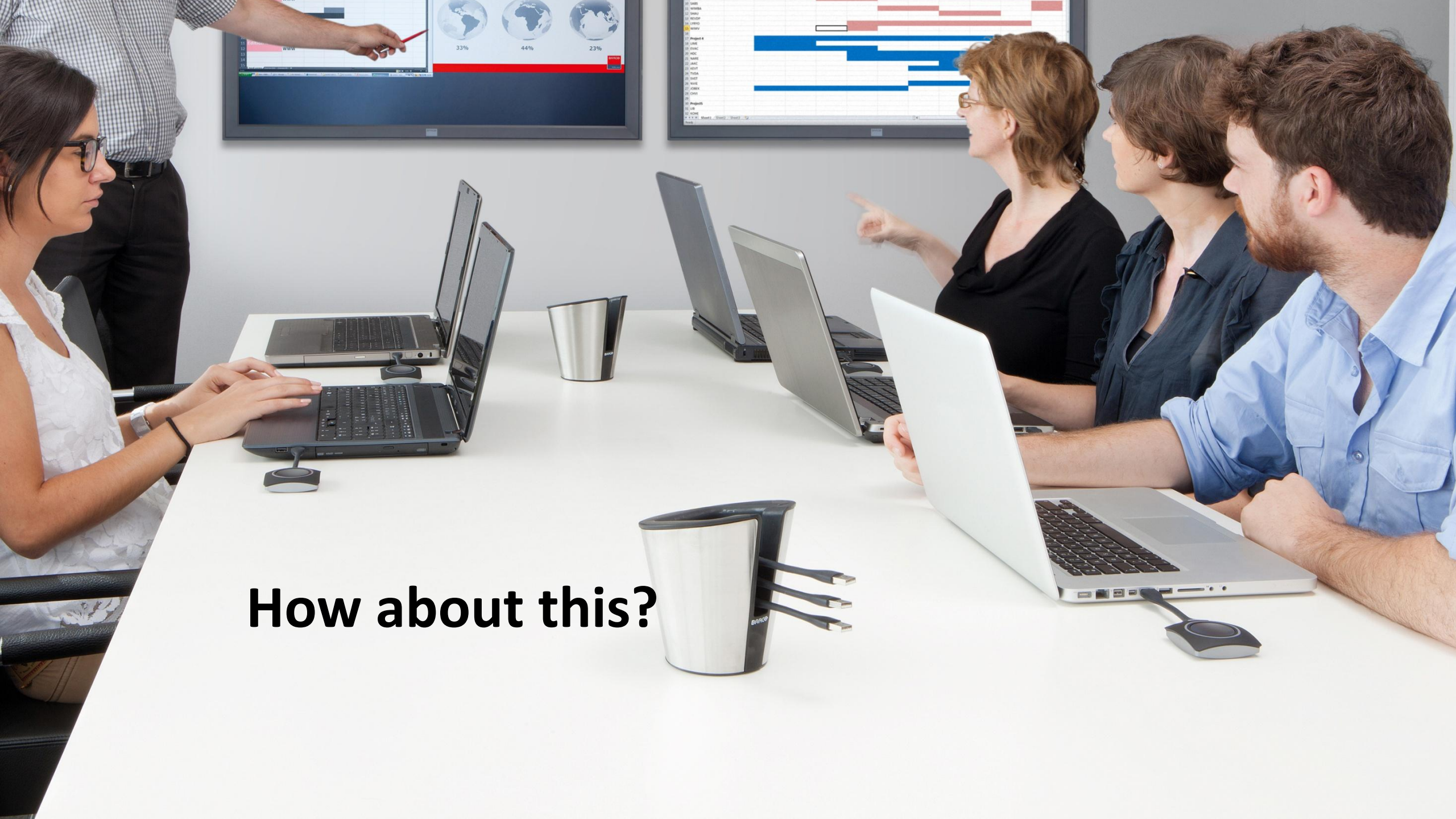
What to test?

Single – Sequential Test Approach ?


Multi threaded
approach?


You, may end up
like her!!


or, may end up
like him!!


How about this?


Do you want
to hire this
team?

Automate the tests using Selenium

- Should it be sequential?

Then, what are the options?


Sequential??
Keep watching
It may end in
a week time !!


Run them Parallel in multiple machine

Remember !!

SAUCELABS

BrowserStack

keynote

How about Cloud?

1. Start the GRID hub
2. Start Nodes – Each one with expected browsers.
3. Verify in the Console
4. Change your test script to point to Hub.
5. Running in Single thread and followed by distributed and finally parallel distribution
6. Look at the extent reports.

What will you see?

Central point that will receive all the test request and distribute them the right nodes

Individual machine (physical / virtual) that registers to the hub for test execution

Grid Components

The Hub is the central point that will receive all the test request and distribute them the right nodes.

- Each node gets itself registered
- Console will show the registered nodes and its capabilities

Hub – What that means?

Console shows –

- The connected nodes and their
  - IP Address
  - Browser and its maximum instances
  - Execution status

Hub Console

Syntax to start in command prompt:

java -jar selenium-server-standalone-3.0.1.jar -role hub

URL to see the console:

http://<Hub IP Address / Server Name>:<port>/grid/console

Let us start a Hub and see the console

What can be capabilities for a train?

- Destination – Madurai
- Class – Third AC
- Scheduled Time – 09.20 PM

Capabilities

Syntax to start in command prompt:

// Default settings

java -jar selenium-server-standalone-3.0.1.jar -role wd –hub http://<Hub IP Address or Server Name>:<port>/grid/register

// Specific capabilities settings

-browser "browserName=<browser>,platform=<PLATFORM>,maxInstances=<number>"

Let us start a Node and see the console

- The capabilities at which - you wish the script should run with – like :
  - Browser as Chrome
  - Platform as WINDOWS
  - Version as “ANY” [Hence it can be optional]

Syntax:

```
DesiredCapabilities dc = new DesiredCapabilities();
dc.setBrowserName(“chrome");
dc.setPlatform(Platform.WINDOWS);
```

DesiredCapabilities

- Separates where the tests are running from where the browser is.
- Allows tests to be run with browsers not available on the current OS (because the browser can be elsewhere)

Syntax:

new RemoteWebDriver(java.net.URL remoteAddress,
Capabilities desiredCapabilities)

RemoteWebDriver

Let us see a demo in local

Let us run them in Parallel using TestNG

So, when the desired capabilities meets the actual capabilities at the hub, the node is allocated and you are ready to run the script!

You Board!!

If you find a train that matches your wish.

So, when the desired capabilities does not have the matching actual capabilities at the hub, it throws the exception.

Throws Exception!!

If you do not find a train that matches your wish.

So, when the desired capabilities have more than one node with matching actual capabilities, it assigns the first node.

You take on the first train!

If there are more than one match?

So, when all browsers of all nodes with matching capabilities are busy, it queues the request.

You will be waitlisted!

If all nodes are busy, then?

- It is always preferred to use Grid

  - ✓ run in remote
  - ✓ run in parallel more than a machine (Using TestNG)
  - ✓ run for several combinations

- Steps to work

  - Start the Hub, Node
  - Verify using console
  - Change webdriver code to RemoteWebDriver
  - Monitor the execution using console

Summary

Q&A

Thank you

TestLeaf
Always Ahead