



PNSQC

OCTOBER 10-12 2022

Baubak Gandomi
Phased Testing

Introduction



- Adobe Campaign
- Test Automation Architect



Adobe

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Program

- Problems with System Changes
- Phased Testing as a Solution
- Implementation
- Next Steps



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System Changes

- Database changes
- Application upgrades
- Server and Cloud changes



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System Change Validation



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System Change Validation



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Encountered Problems



- Distinguishing between problems related to the system change and those inherent to the product.
- Identifying and Reproducing a problem
- Many issues were missed

Identified Problems

- The Data Problem
- The Time Problem



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The Data Problem



- Mapping data to a specific test scenario
- Mapping data to a specific product/application version
- Updating test data is cumbersome.

The Time Problem



User Transactions are not that atomic.

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A Simple Scenario



The Time Problem



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The Time Problem



User Transactions are not that unique.

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The Time Problem



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Attempted Approach



The Real Span of Cases



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A Solution for Validation System Changes

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Precepts



- A test scenario should be interruptible
- A test scenario is declared only once, but we should be able to execute it with all the possible interruptions it may be subject to.

Nomenclatures



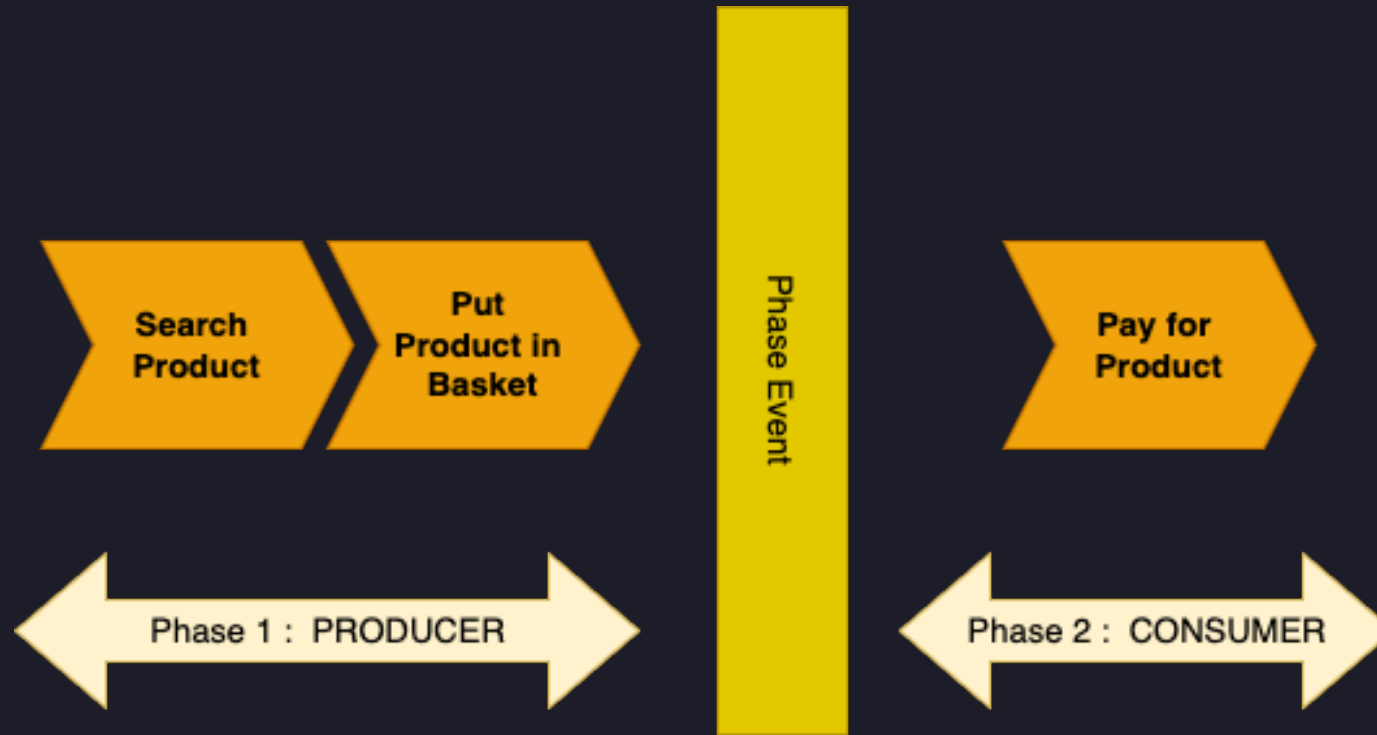
- **Test Scenario** : A set of actions that allow us to validate a functional use case.
- **Test Step** : An action/step within a scenario.

Nomenclatures



- **Phase Event**
- **Phases**
- **Execution Modes**
- **Shuffle Groups**
- **Phased Context**

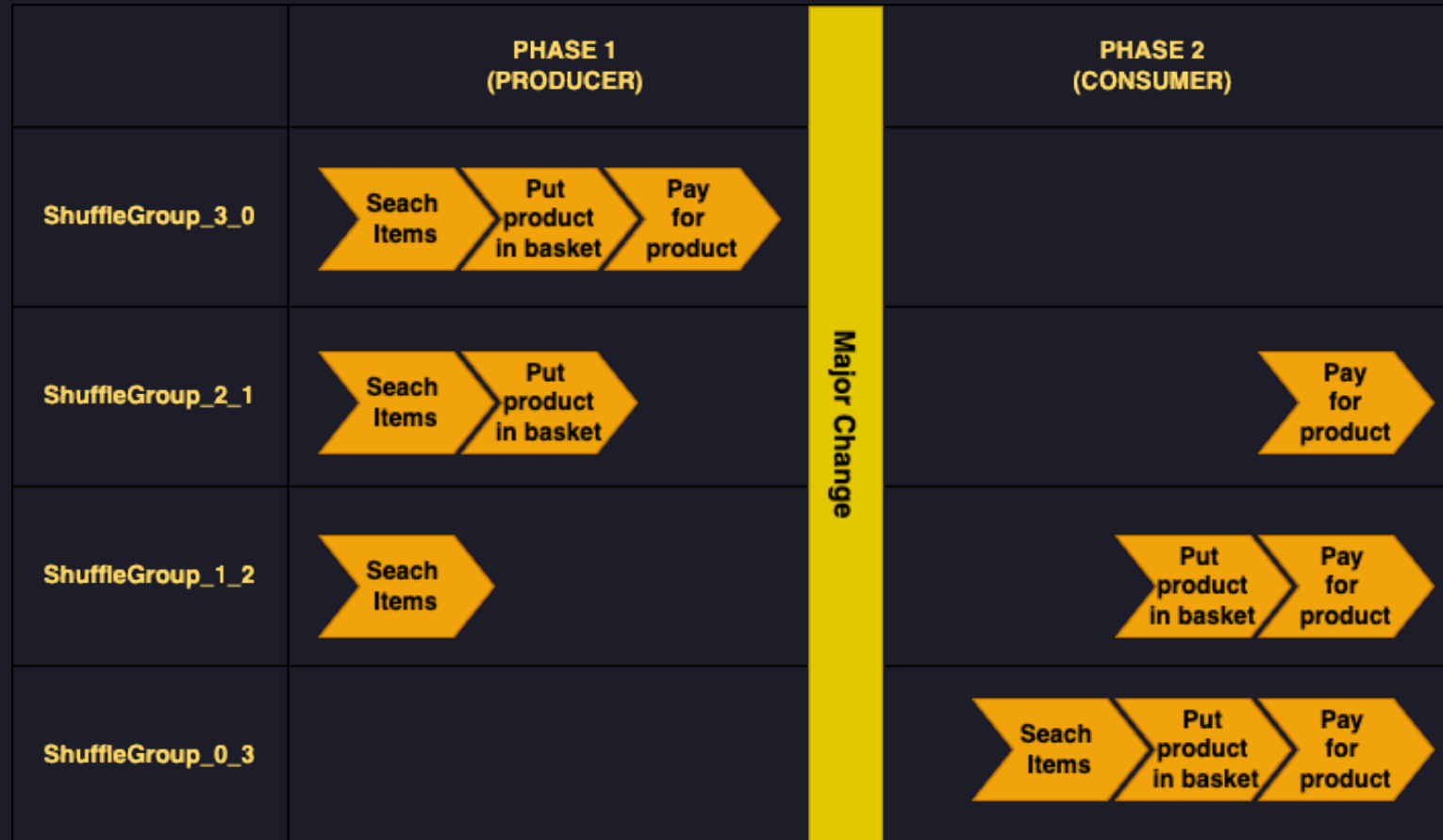
Phases , Events



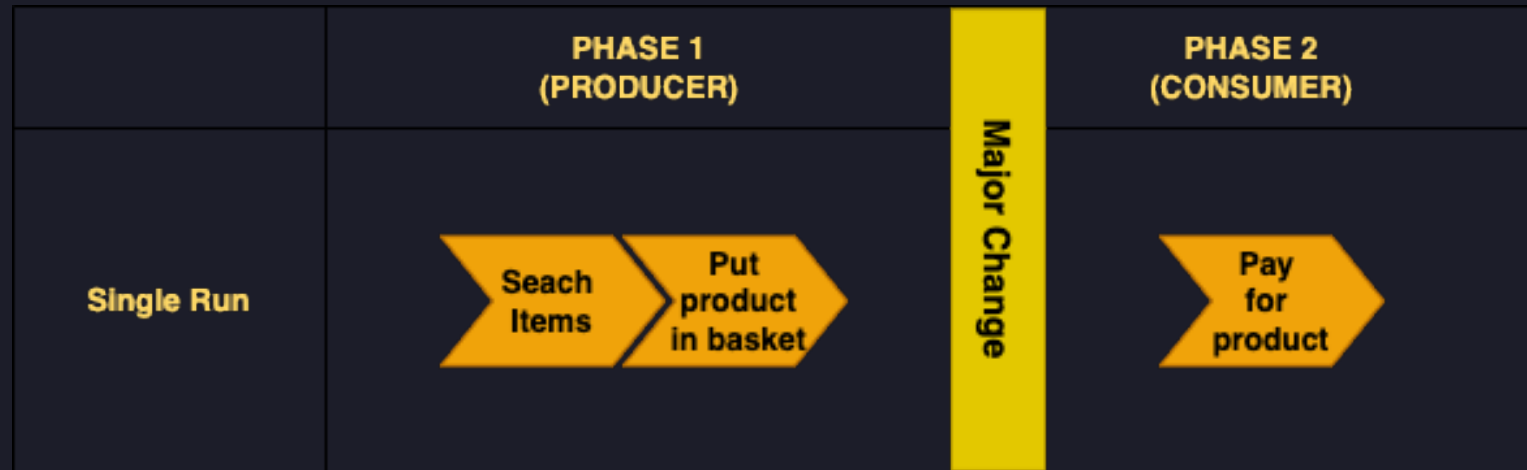
Execution Modes – Non-Phased



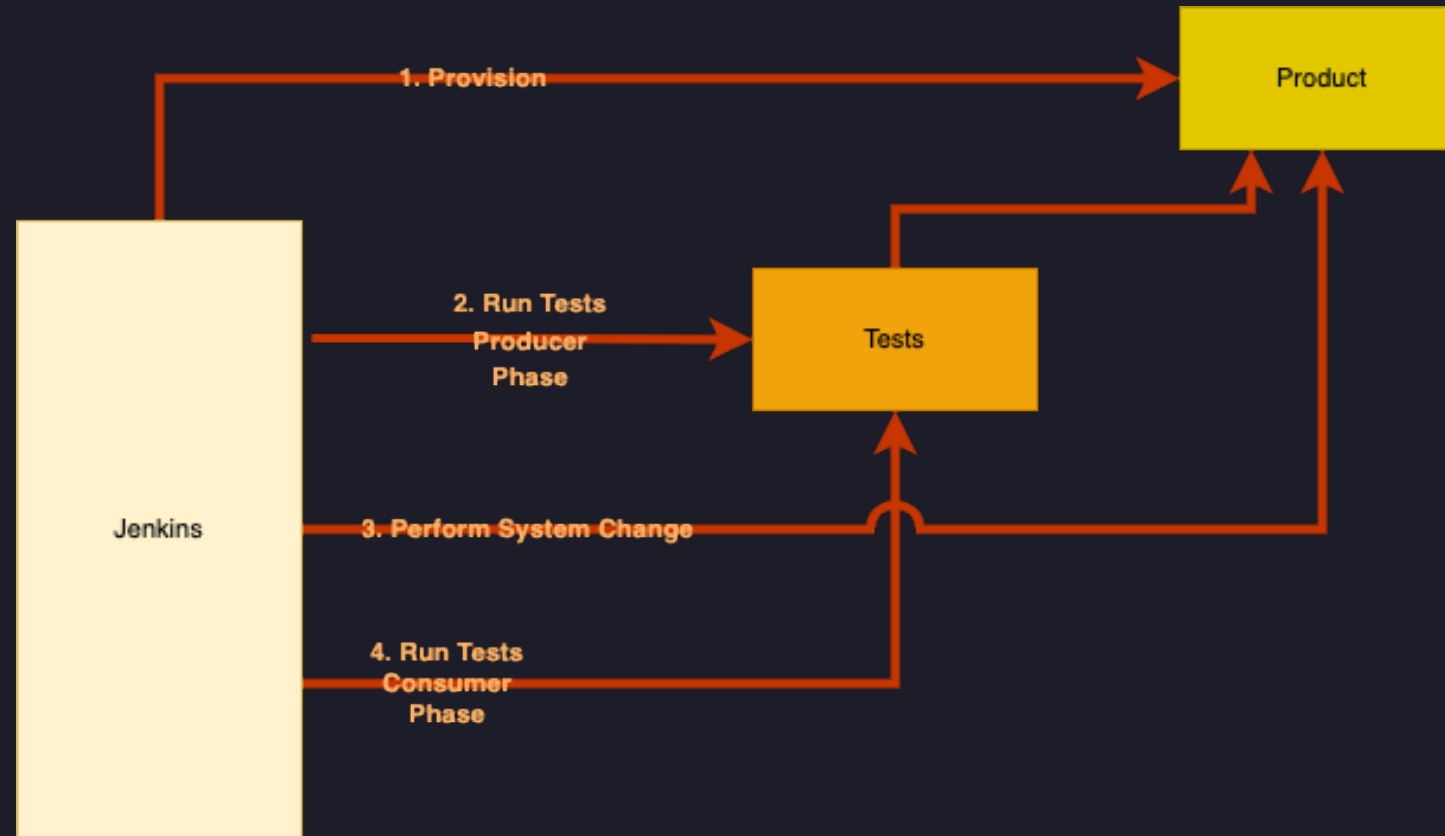
Execution Modes – Shuffle Run



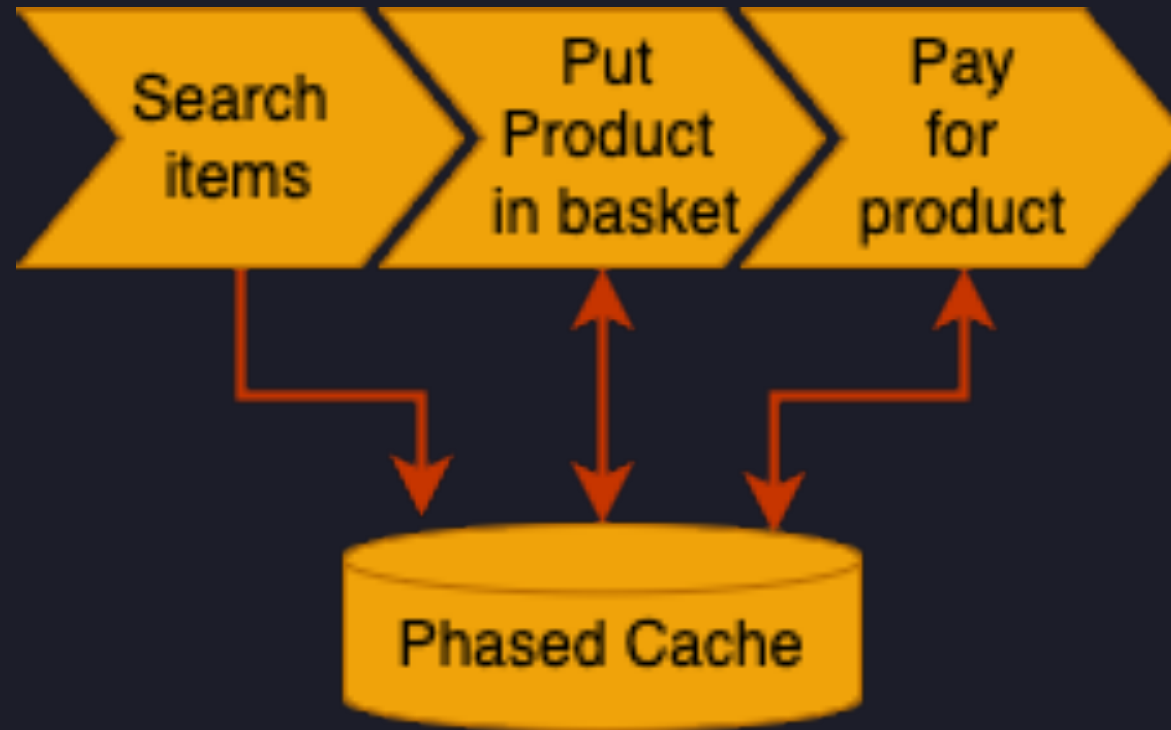
Execution Modes – Single Run



Orchestration



Managing Context – Cross Step

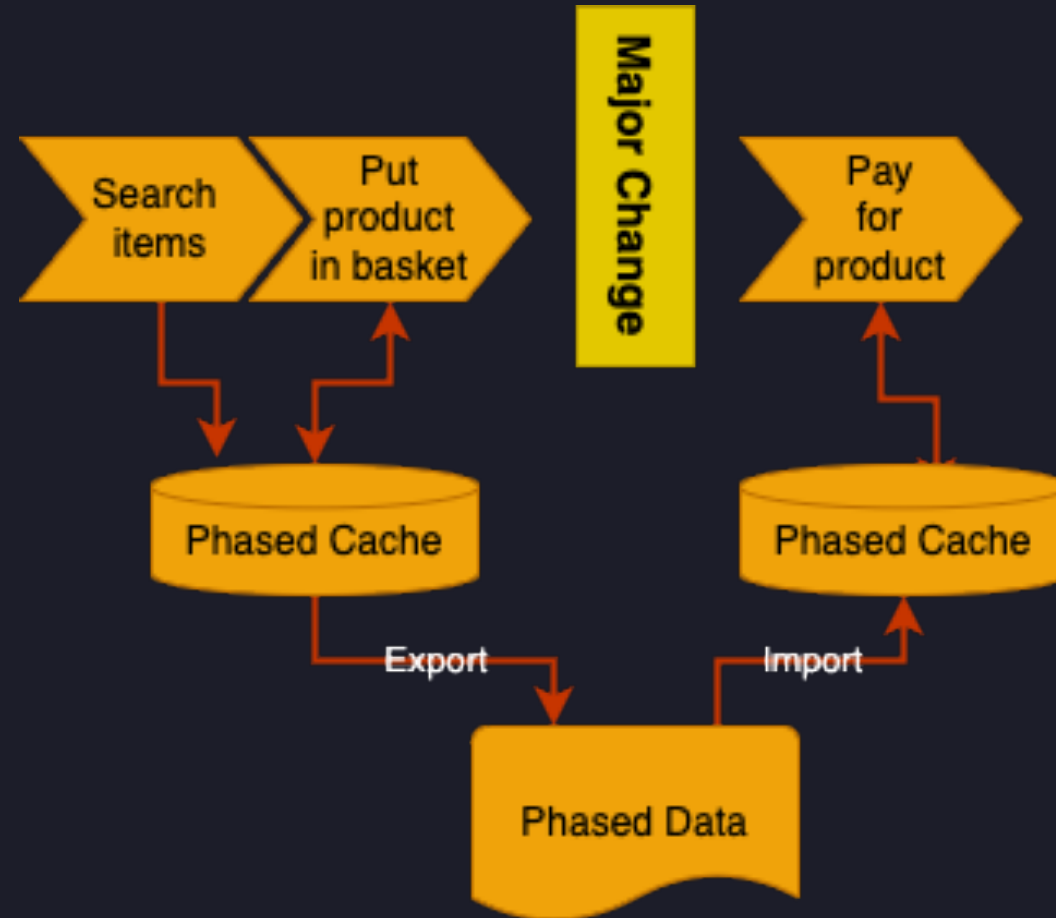


Context API



- **produce**
 - **`com.adobe.campaign.tests.integro.phased.PhasedTestManager.produce(String in_storageKey, String in_storeValue)`**
- **consume**
 - **`com.adobe.campaign.tests.integro.phased.PhasedTestManager.consume(String in_storageKey)`**

Managing Context – Cross Phase



Implementation



How we implemented it

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A TestNG Listener



- Include the listener :
 - `com.adobe.campaign.tests.integro.phased.PhasedTestListener`

Writing a Phased Test



- **1 Scenario - 1 class**
 - Addition of @Test on the class
- **1 step – 1 method**
 - All steps require at least one String argument
- **Predictable Order of steps**

Consequences of Implementing



- **No redundancy with normal scenarios.**
 - Adapt your normal TestNG scenarios.
- **Complexity Rises with the number of Scenario Steps.**
 - Managing context.
 - Need to respect an alphabetical order
- **More classes to manage**
- **Introduce randomness**

DEMO



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Conclusions



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Take-Aways



- Scenarios are not Atomic
- System Changes can easily happen in the lifetime of a scenario
- Important to allow people to continue their work after a system change.
- Our test scripts need to ensure the robustness of our systems during change

Considerations



- Transform a subset of your tests to Phased Tests
 - Smoke/Sanity Tests
- Avoid too many steps
- Ensure that the phased tests are run as normal tests

In The Future

- Step Re-Ordering
- Non-interruptive Events
- Parallel Events
- Multiple Events

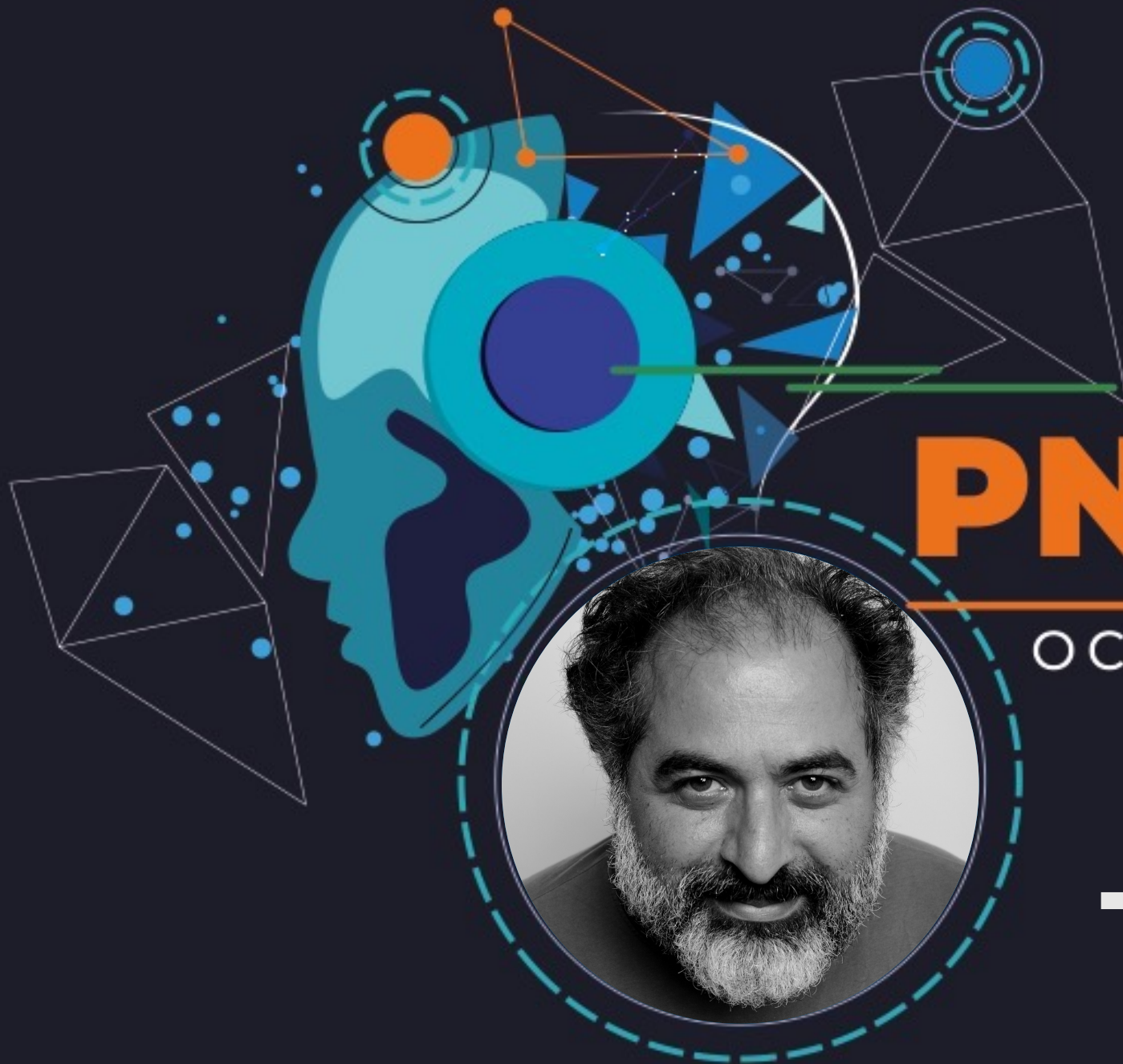


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The Code



- <https://github.com/adobe/phased-testing>
- The demo
 - <https://github.com/baubakg/phased-test-demo>



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THANK YOU