

Overcoming Gherkin Anti-Patterns for Manageable, Durable, and Valuable Test Code

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About Us



Raj Indugula



George Lively

We are...

Agile Process & Technical Coaches, Practitioners,
Speakers, Trainers

With ...

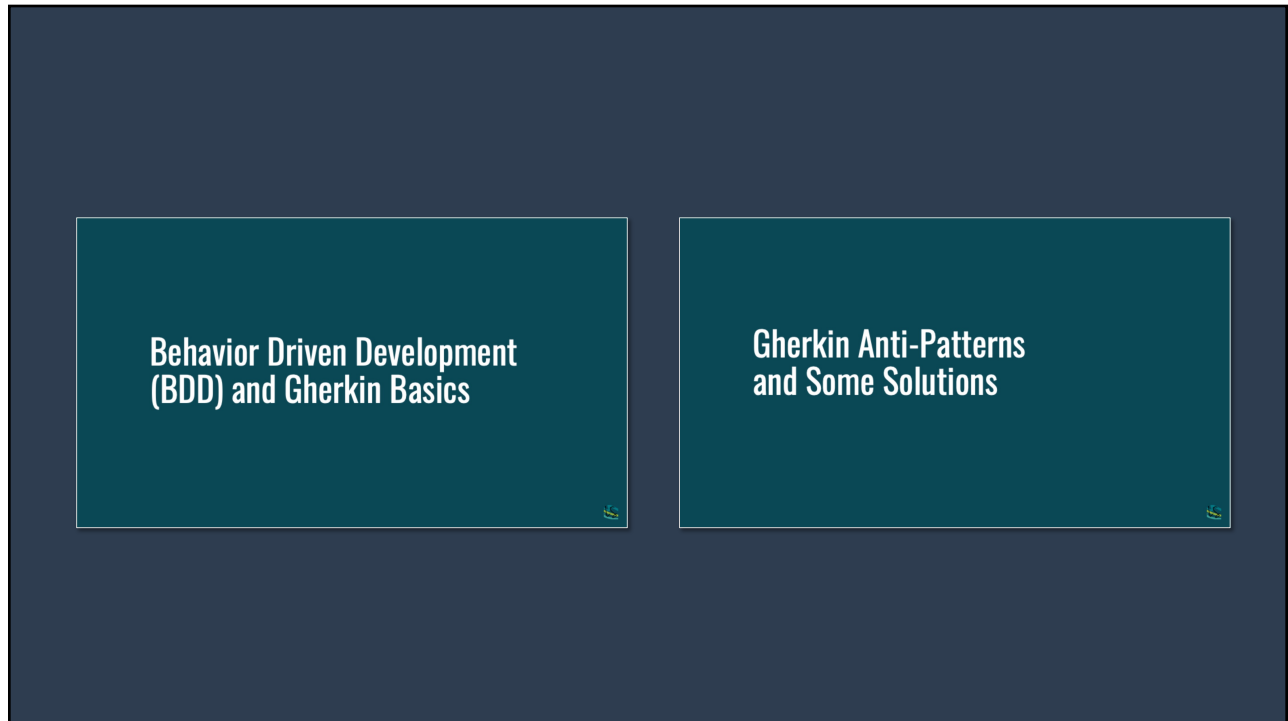
20+ years in the industry; 15 years of Agile

Who are passionate about ...

Transitioning teams to Agile & deepening Agile
adoption with XP-inspired engineering, testing, and
DevOps practices



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What is Behavior Driven Development (BDD)?

Collaboration and conversation to discover essential requirements and identify uncertainty using examples expressed in a common language to build a shared understanding to deliver software that matters



Bridging the communication gap



Shared understanding of needs

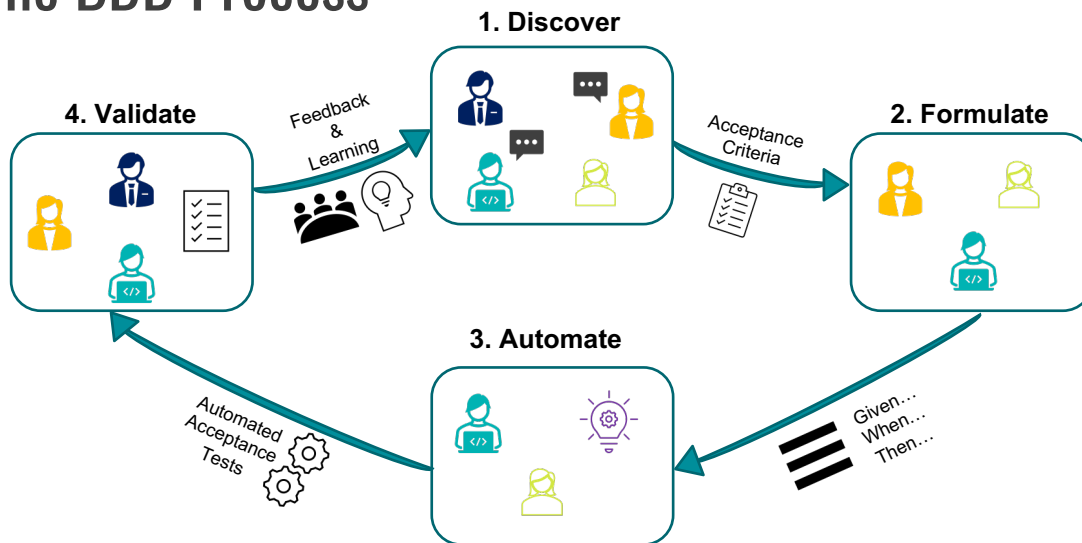


Feedback & Quality



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The BDD Process



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What is Gherkin?

A business-readable notation for specifying behavior.

```

Feature: ATM withdrawals
Our ATM allows depositors to withdraw their funds in cash
Rules:
Withdrawals are limited by amount on deposit
Withdrawals are subject to daily and transaction withdrawal limits
Cash is dispensed in $10 increments with $20 bills favored

Scenario: Sufficient funds allows successful withdrawal
Given a depositor has $2000 on deposit
When the depositor requests $200
Then the ATM dispenses $200
And the depositor's balance is reduced to $1800
...
    
```

PLAIN ENGLISH

BUSINESS-READABLE

EXECUTABLE



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Gherkin: Feature-Scenario-Steps

```

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```



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Rules for Writing Good Gherkin



The Golden Rule

Write feature files so that everyone can intuitively understand them. Good Gherkin should improve team collaboration by clarifying behaviors you want to develop.



The Cardinal Rule

One scenario should cover exactly one single, independent behavior.



The Unique Example Rule

Don't include unnecessary examples. Focus on unique equivalence. Don't waste time testing "all the things." Instead, test the most important things, and avoid test duplication.

Source: <https://techbeacon.com/app-dev-testing/better-behavior-driven-development-4-rules-writing-good-gherkin>



Gherkin Anti-Patterns and Some Solutions



Our Top Gherkin Anti-Patterns

1. Scripty with Implementation Details
2. Unclear test intent
3. Lack of reusability
4. Too long, testing multiple scenarios at once
5. File organization



What do you do with too many Cucumbers?

1. Scripty with Implementation Details

Scenario: Basic search happy path; search for tubs and showers and find related results

Given I navigate to "<https://www.bighardwarestore.com>"

← **Hardcoded URL**

And the following fixtures are stored

id	Fixture	Heavy
1	bathtub	Y
2	shower	Y
3	refrigerator	Y
4	ceiling fan	N

← **Unnecessary detail in data setup**

And I type "bathroom tub and shower" in the search field

When I click the "#searchButton"

← **Scripty detail**

Then the page contains bathtub and shower only

← **Implementation detail**

2. Unclear Test Intent

Scenario: Test search functionality ← Scenario description is too broad

Given the user goes to our website

And the following fixtures are stored

id	Fixture	Heavy
1	bathtub	Y
2	shower	Y
3	refrigerator	Y
4	ceiling fan	N

~~**And** the user searches for "bathroom tub and shower"~~ ← Misused Gherkin keywords

And the page contains bathtub and shower only



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Remedy to 1 & 2: Improved Gherkin

Scenario: Basic search happy path; search for tubs and showers and find related results ← Clear, concise scenario description

Given the DIYer goes to our store ← No hardcoded URL

And the following fixtures are stored

Fixture	Room
bathtub	bathroom
shower	bathroom
refrigerator	kitchen
wash basin	outside

← Only necessary data in data setup

~~**When** the DIYer searches for "bathroom tub and shower"~~ ← Proper use of Gherkin keywords

Then the results contain bathtub and shower only ← No implementation or scripty details

Scenario is focused on *behavior* not *implementation*.



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3. Lack of Reusability

BEFORE

Scenario: Filtering on multiple categories in one search

Given the user searches for bathroom tub and shower

And the user sees search results that include tubs and showers

When the user filters on Blue under Color

And the user filters on Shower under Type

Then the user sees results that include tubs and showers with only filtered values

Should use quoted strings

AFTER

Scenario: Filtering on multiple categories in one search

Given the user searches for "bathroom tub and shower"

And the user sees search results that include tubs and showers

When the user filters on "Blue" under "Color"

And the user filters on "Shower" under "Type"

Then the user sees results that include tubs and showers with only filtered values

Now with quoted strings!



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4. Too Long, Multiple Scenarios – all in one

Scenario: Advanced search using multiple categories

Given the user goes to our website

When the user searches for "bathroom tub and shower"

Then the user sees results that include tubs and showers

And the user sees advanced search filters on the left of the page

When the user filters on "Blue" under "Color"

Then the user sees results that include tubs and showers with "Multiple colors/finishes"

Then the user deselects "Multiple colors/finishes" under "Color/Finish Family"

When the user filters on "Shower" under "Type"

Then the user sees results that include tubs and showers with "Shower"

Then the user deselects "Shower" under "Type"

When the user filters on "Solid surface" under "Material"

Then the user sees results that include tubs and showers with "Solid surface"

Multiple scenarios

Multiple scenarios

Multiple scenarios

Multiple scenarios

Misuse of keywords



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Remedy to 4: Improved Readability

Scenario Outline: The DIYer can filter their search results using many different categories Scenario Outline

Given the DIYer searches for "bathroom tub and shower"
And the DIYer sees search results that include tubs and showers
When the DIYer narrows their search to <search_value> under <category>
Then the DIYer sees results that include tubs and showers with <search_value>

Examples:

category	search_value
Color	Blue
Type	Shower
Material	Solid surface

Places for substitution values

Substitution values

Another Remedy...

Background: Common setup

Given the DIYer searches for "bathroom tub and shower"
And the DIYer sees search results that include tubs and showers

Scenario: Narrow their search results using the Color/Finish Family category

When the DIYer narrows their search to "Blue" under "Color"

Then the DIYer sees results that include tubs and showers with "Multiple colors/finishes"

Scenario: Narrow their search results using the Type category

When the DIYer narrows their search to "Shower" under "Type"

Then the DIYer sees results that include tubs and showers with "Shower"

Scenario: Narrow their search results using the Material category

When the DIYer narrows their search to "Solid surface" under "Material"

Then the DIYer sees results that include tubs and showers with "Solid surface"

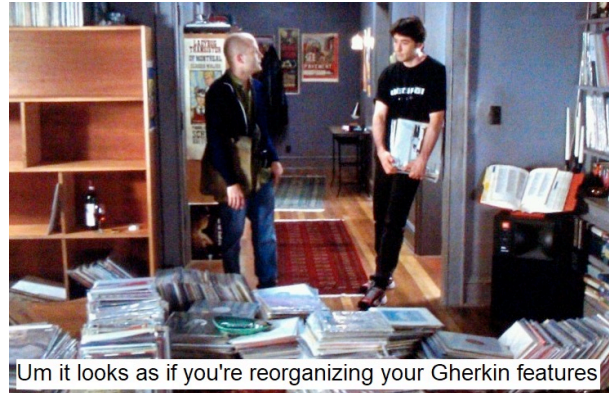
5. File Organization

Anti-pattern:

- No organization, everything goes in one folder
- Organizing by sprints or some other time-based mechanism

Instead:

- Organize your feature files in a folder structure by business functionality
 - Doing so will make it easier to find scenarios that have already been written, eliminating unnecessary duplication



Menti Time!

Go to www.menti.com and use the code supplied

Can you spot the anti-pattern(s)?

Scenario: Test Past Purchases functionality

Given I navigate to the customer portal to view my profile

And the user clicks the “View Past Purchases” link

When I click the “Time Period” dropdown

And the user selects “Last 90 Days”

And the user clicks “Find” button

Then the page displays all purchases for the last 90 days

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Can you spot the anti-pattern(s)?

Scenario: Past Purchases functionality and retrieval of data related to past purchase

Given a customer navigates to view past purchases

When the customer chooses “Last 90 Days”

Then the results for the “Last 90 Days” are returned

When the customer selects “refrigerator” from past purchases

Then the “refrigerator” they purchased is displayed

When the customer selects “My Review” from their “refrigerator” purchase

Then they are shown their review

The “If You Give a Mouse a Cookie” Anti-Pattern

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The Gherkin Checklist

- Feature file should be limited to scenarios of related functionality.
- Limit the number of scenarios per feature. There's no absolute limit. Be reasonable.
- Limit the number of steps per scenario to something readable and reasonable.
- Use consistent spelling, grammar, spacing.
- Do not use punctuation at the end of step phrases.



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Collaboration

- Ensure collaboration happens across perspectives throughout the process
- Ways collaboration can benefit:
 - Bridge the communication gap; scenarios remain focused on expected behavior
 - Establish a shared understanding of needs
 - Improved feedback and quality
 - Better maintainability, readability, durability



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There is no *perfect* Gherkin,
there is only *better* Gherkin.

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Additional Reading

- <https://cucumber.io/docs/gherkin/reference/>
- <https://cucumber.io/docs/bdd/>
- <https://cucumber.io/docs/bdd/better-gherkin/>
- <https://dzone.com/articles/a-guide-to-good-cucumber-practices>
- <https://blog.avenuencode.com/gherkin-best-practices>

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