

DATAMATICS



WHITEPAPER

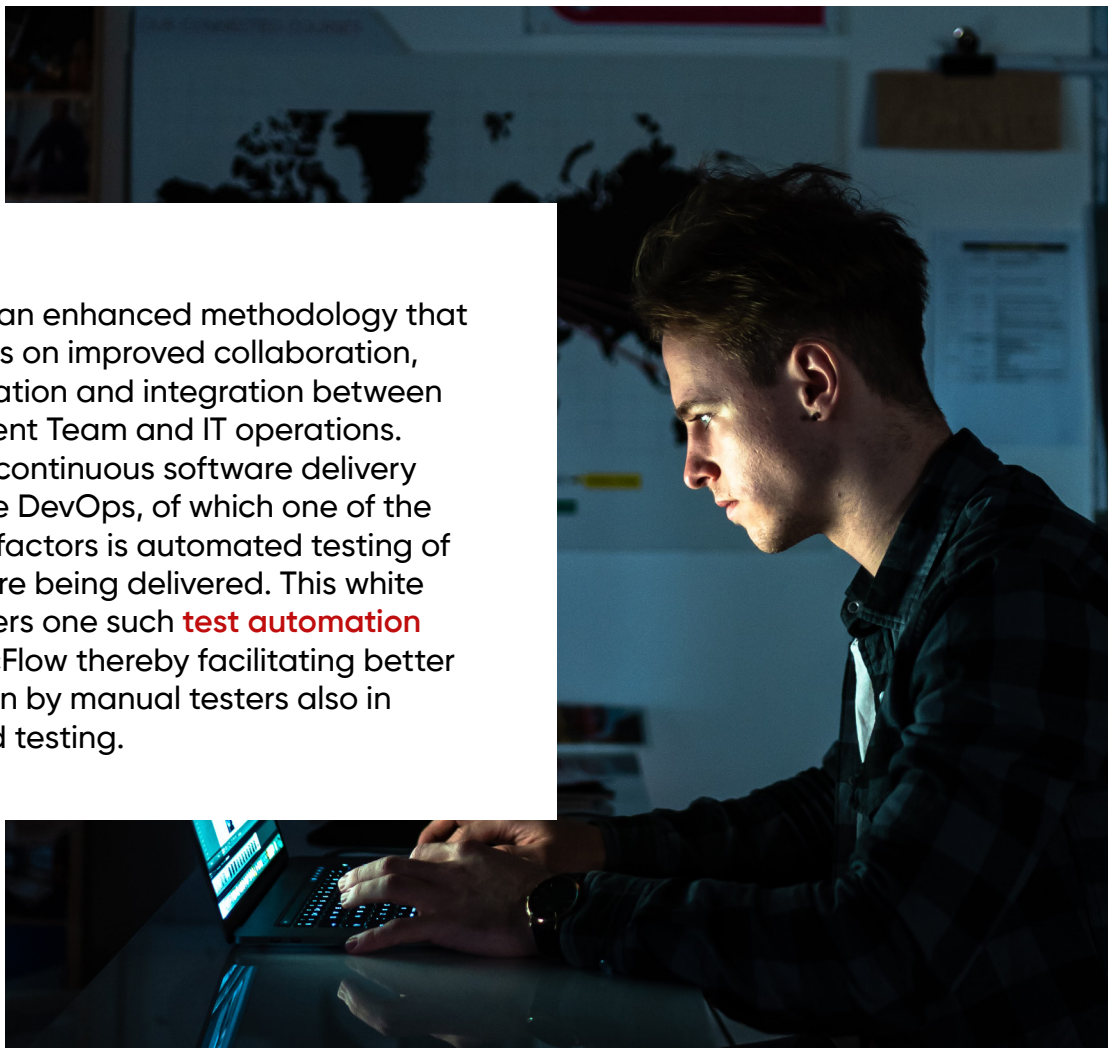
TEST AUTOMATION USING SPECFLOW

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ABSTRACT

DevOps is an enhanced methodology that emphasises on improved collaboration, communication and integration between Development Team and IT operations. It enables continuous software delivery to facilitate DevOps, of which one of the important factors is automated testing of the software being delivered. This white paper covers one such **test automation** using SpecFlow thereby facilitating better contribution by manual testers also in automated testing.



INTRODUCTION

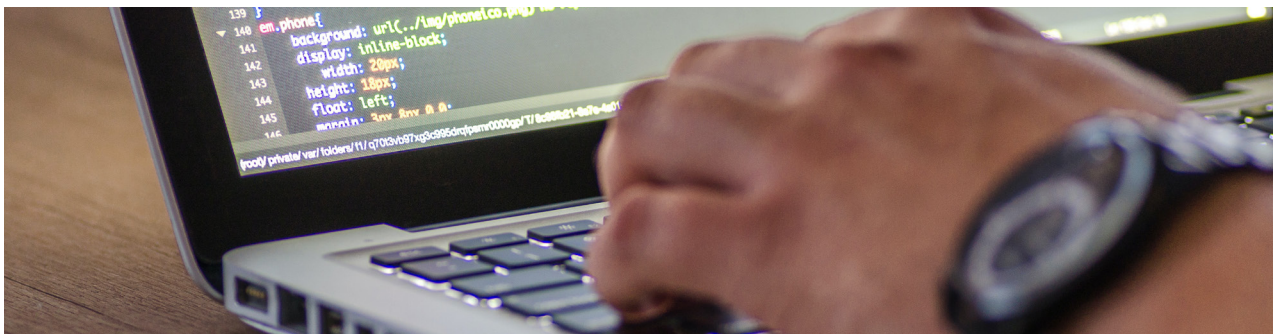
SpecFlow helps to define, manage and automatically execute human-readable tests in .NET projects. Writing easily understandable tests is the cornerstone of the Behaviour Driven Development (BDD) paradigm. BDD helps in developing software through continuous example-based communication among developers, quality analysts (QAs), and business analysts (BAs). It also helps in building up a live documentation of the system. Most importantly, it enables manual testers to write automation test cases in BDD format.

This particular white paper contains the following:

1. Step by Step guide for using SpecFlow in automation testing
2. Information about how SpecFlow enables manual testers to write automation scripts

This white paper is designed to overcome the following issues:

1. Automation test scripts are only understood by automation testers and not by manual testers
2. Manual testers don't contribute to automation testing
3. Inherent difficulties in relating automation scripts with acceptance criteria



WHAT IS SPECFLOW?

SpecFlow is inspired by Cucumber framework in the Ruby on Rails environment. Cucumber uses plain English in Gherkin format to express user stories. Once the user stories and their expectations are written down, the Cucumber gem is used to execute those stores. SpecFlow brings the same concept to .NET environment and allows the tester to express the feature in plain English language. It also allows writing specifications in human readable Gherkin format.

SpecFlow integrates with Visual Studio, but can also be used from the command line (for example, on a build server). SpecFlow supports popular testing frameworks, such as MSTest, NUnit (2 and 3), xUnit 2 and MbUnit.





SPECFLOW IN THREE EASY STEPS

Step 1

- Describe the behaviour of your system using human-readable syntax.
- Define specification in the problem domain using the language of your stakeholders and build up a documentation of your system.

Step 2

- Bind your test specification to your application code to automate the testing of your system. Ensure that all your tests pass successfully.

Step 3

- Relax in the knowledge that SpecFlow will automatically identify breaking changes by your tests. Cut down the time that is required for forensic development and enjoy the peace of mind that comes from the knowledge about exactly what your software does and is supposed to do.
-

FEATURES SPECFLOW?

- 1 A paradigm shift in thinking in terms of "tests" to thinking in terms of "behaviour"
 - 2 Collaboration between business stakeholders, BAs, QA teams and developers
 - 3 Use of simple English language as it is easy to describe and understand
 - 4 Test execution, which is driven by business value
 - 5 Natural extension of the Test Driven Development (TDD) by utilizing natural language that non-technical stakeholders can understand
 - 6 Acts like a "bridge" between business and technical languages
-

EXAMPLE

The main feature of the SpecFlow is that it focuses on Acceptance Testing. SpecFlow makes it easy for anyone in the team to read and write tests. This feature pulls in the business users in the test process, thus helping the teams to explore and understand requirements.

Example:

```
Feature: SpecFlowFeature1
    In order to avoid silly mistakes
    As a math idiot
    I want to be told the sum of two numbers

@mytag
- Scenario: Add two numbers
    Given I have entered 50 into the calculator
    And I have entered 70 into the calculator
    When I press add
    Then the result should be 120 on the screen
```

The above example code indicates that anybody can understand the working of the test and what it is intended to execute. It gives an unexpected powerful impact by enabling people to visualize the system before it has been built. Any of the business users can read and understand the test and provide feedback whether it reflects their understanding of what the system should do. It even brings forth other scenarios that need to be considered too while testing.

MANUAL TESTER WRITING AUTOMATION SCRIPTS

Once the initial framework development and the background code is developed, linking to simple English statements by automation testers and manual testers can easily automate the test case by simply writing the steps in the order that they require.

Manual testers just need to read the test case and type it in same simple English text sentences one by one, which are linked to the functions. This function performs the operations on the application.





SPECFLOW SUCCESS STORY FOR A CLIENT

SpecFlow tests have been successfully implemented for one of our clients and till now around 250 test cases have been scripted in BDD format. The initial effort was to create the framework to handle the BDD format along with development of the reusable components for the applications under test. The actual automation was done by building the statements in simple English, which internally used this SpecFlow code. This, in turn, saved a significant amount of effort and time in the development of the automated tests.

Manual testers were able to write automation test scripts in plain English statements step by step. These plain English statements enable to pass appropriate parameters to make them dynamic and reusable. The testers just need to understand and pass parameters to the statement if it is necessary or not as per the test case steps.

SpecFlow allowed more automation coverage as now each team member was contributing towards it. Additional coverage and better utilization of efforts can be planned well in advance and therefore the concept and the automated tests supplement the quality by design idea.

ABOUT THE AUTHOR

KISHOR AMBADE

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Kishore is a certified .Net technology and testing professional. As Consultant, he has worked in various phases of SDLC, such as Requirement Analysis, Design, Development and Testing.

Kishore has experience in Automation Test Framework development. He has completed Bachelor of Computer Science from Mumbai University and has sound knowledge and expertise in different domains such as Healthcare and Fund Administration.

MUKUND PRASAD

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Mukund is an experienced Testing professional with experience in Automation Testing as well as Development. As Consultant, he has worked in various phases of SDLC, such as Requirement Analysis, Design, Development, and Testing.

Mukund has completed Bachelor of Computer Science from Pune University. He has sound knowledge and expertise in different domains such as Healthcare and Payrolls (ERP) as well as experience in leading enterprise-level Manual and Automation Test projects.

ABOUT DATAMATICS

Datamatics provides intelligent solutions for data-driven businesses to increase productivity and enhance the customer experience. With a complete digital approach, Datamatics portfolio spans across Information Technology Services, Business Process Management, Engineering Services and Big Data & Analytics all powered by Artificial Intelligence.

It has established products in Robotic Process Automation, Intelligent Document Processing, Business Intelligence and Automated Fare Collection.

Datamatics services global customers across Banking, Financial Services, Insurance, Healthcare, Manufacturing, International Organizations, and Media & Publishing.

The Company has presence across 4 continents with major delivery centers in the USA, India, and Philippines. To know more about Datamatics, visit www.datamatics.com

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