INFUSE

INTERNSHIP REPORT

JESTON FERNANDES

2015

REPORT OF INTERNSHIP DONE AT INFUSE CONSULTING

SUBMITTED BY

JESTON FERNANDES

2015

UNDER THE GUIDANCE OF

MR. SUBODH BORKAR

(Head of Product Development, useMango, Infuse Consulting)

INFUSE
consulting

Excellence through Quality Assurance

2nd June 2023

INTERNSHIP CERTIFICATE

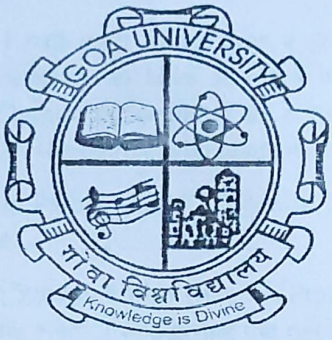
This is to certify that **Jeston Fernandes**, Roll No. 2015, currently pursuing the 6th Semester of the MCA program in the Computer Science and Technology discipline at Goa Business School, Goa University, has been actively engaged as an intern with our organization since January 9th, 2023. During his internship, he has consistently displayed exemplary performance by successfully accomplishing assigned tasks and other related responsibilities.

Jeston exhibits a strong sense of self-motivation and requires minimal supervision to effectively complete his assigned tasks. He has demonstrated remarkable aptitude for swiftly acquiring the required domain knowledge and mastering the necessary technologies. His rapid learning pace has greatly contributed to the overall productivity and successful delivery of the team.

Yours Sincerely,

Subodh Borkar,
Head of Product Development - useMango

GOA UNIVERSITY



GOA BUSINESS SCHOOL

CERTIFICATE OF EVALUATION

This is to certify that Mr. JESTON FERNANDES has been evaluated for the project work titled "**Report of Internship done at Infuse Consulting**" in partial fulfilment for the award of the degree in Master of Computer Application.

Examiner 1

Examiner 2

Place: Goa University

Date: 14 June 2023

Dean, GBS

Acknowledgement

The internship opportunity I had with Infuse was a great chance for learning and professional development, especially to have so many wonderful people leading me throughout this period. The internship wouldn't be complete without expressing my gratitude and appreciation to all the people who made it possible.

I would like to thank Mr. Nalin Parbhu (CEO/CTO, Infuse Consulting) for giving me the opportunity to intern at Infuse.

My sincerest gratitude to Mr. Subodh Borkar (Head of Product Development at Mango, Infuse Consulting) for being my mentor and giving me necessary advice and guidance. I choose this moment to acknowledge his contribution gratefully.

I thank all the faculty and staff at the MCA, Goa University for their constant encouragement and support during the entire course work.

I would like to thank my family and friends for all the love, support and encouragement they provided me during this internship which will never be forgotten.

Finally, I would like to express my gratitude towards the Infuse family, especially my seniors Delroy Martins, Imtiyaz Khan, Vinay Prabhu, Joyrel Vaz, Rochelle Martins, Minaxi Patil, Onkar Parshekar, Preshly Fernandes who were always ready to help me and guide me. Also, I would like to thank my internship colleagues for helping me learn new things and always supporting me during this period.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement.

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Introduction

This report is a short description of my full-time on-site internship at Infuse.

I joined as a team intern at Infuse Consulting on January 9, 2023, and have been here since then. This report contains necessary information about the organization, the projects I worked on, and the other tasks I completed during this internship period.

In the chapters that will follow, I will talk about the company, the work here, the culture, etc. Then, I shall elaborate on the projects I worked on and provide brief information about the projects and the various tasks I worked on.

This report highlights my learning experience and my contributions to the organization as an intern. This will describe the knowledge that I gained by successfully completing the tasks that were assigned to me.

I'll also discuss the tools and technologies that were used, as well as the timeframe for my internship. Finally, I'll talk about my experience and how it has helped me grow both personally and professionally.

Company Profile

About Infuse Consulting

Infuse Consulting is an international company and leverages strategic consulting partners as well as its technology partners to deliver the best solution.

Recognized as the leading provider of Test Automation and Lifecycle Transformation Services for successful, ambitious organizations, Infuse Consulting is headquartered in the UK and since 2002 has helped more than 500 businesses get the most out of their Software Delivery Teams.

Infuse Consulting works hard in the fields of Test Automation and DevOps to reliably deliver several clear benefits for organizations seeking assistance with their Software Delivery.

Infuse is a Gold Partner of Micro Focus and Oracle, and has a partner network including CA, Microsoft, AWS and SAP.

Infuse prides itself on its ability to provide innovative solutions, especially in test automation. They have been automating mobile testing since 2003 and developed a functional scriptless test automation tool, useMango™.

What is useMango?

- Easy to use Test Automation Tool.
- Designed so non-technical individuals can build robust automation scripts.
- Flexible framework functionality that can be adapted to match your testing ability.
- Avoids the costs of engineering your own high maintenance frameworks.
- You can use useMango to create automated tests for web and packaged applications such as Oracle and SAP.

What are the key benefits of using useMango?

- Component based test building removes the need for technical developers.
- Reduce months of manual testing into minutes.
- Fast ROI, allowing you to focus on business-critical issues.
- Increase confidence in your continuous delivery output with automated end to end testing.
- Enable Continuous Delivery by adding automated end-to-end testing of your build pipelines

About useMango

With useMango tests are quicker and more efficient, saving businesses time and money. With useMango you can build a test by selecting from 200+ pre-built components, just add data and it is ready to run. If you have problems with forms, or complicated pages useMango provides an easy solution, you can activate the useMango scanner to scan your application, with a single click, this will identify all the testable objects on any UI and create a new component. If you need to create a custom component, useMango provides you the means to do so. A software tester can complement the useMango generated scripts with custom code, using in-built frameworks made with Ruby, VBScript, Python etc.

Other Key Features

● Works on modern web & desktop applications.

● Codeless test tool & framework.

● Extended to support Package Applications SAP (GUI and Web Variants),

Oracle E-Business, Oracle Fusion.

● Ensure application quality with fast and frequent testing.

● Test processes from end-to-end across multiple platforms and technologies.

● Business users and manual testers can automate tests without coding.

● Easily keep hundreds of tests up to date as your application changes over

time.

● Expand the scope of your testing with data-driven tests.

● Meet exceptional automation requirements with simple scripted components.

● A scalable cloud-based test service which meets your growing needs.

● Get automated test outcomes directly in your continuous integration

pipelines.

● Integrates with your modern continuous integration tooling.

Tools and Technologies

C#

C# is a general-purpose, modern and object-oriented programming language. It was developed by Microsoft led by Anders Hejlsberg and his team within the .Net initiative.

.NET framework

The .NET Framework is a software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library called Framework Class Library and provides language interoperability across several programming languages.

WPF

Windows Presentation Foundation is a UI framework that creates desktop client applications. WPF uses the Extensible Application Markup Language (XAML) to provide a declarative model for application programming.

Ruby

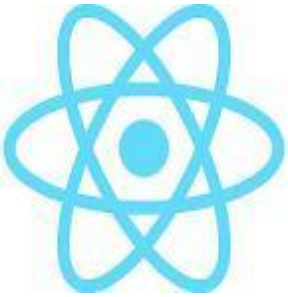
Ruby is an interpreted, high-level, general-purpose programming language. It was designed and developed in the mid-1990s by Yukihiro "Matz" Matsumoto in Japan.

Python

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its built-in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting language.

JavaScript

JavaScript is a lightweight, interpreted, object-oriented language with first-class functions, and is best known as the scripting language for Web pages, but it's used in many non-browser environments as well.



React JS

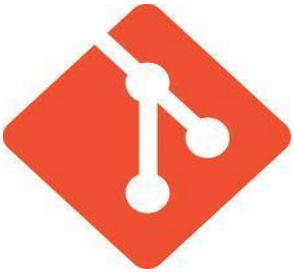
React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta (formerly Facebook). Although React is a library, it is widely used in web development. React makes it painless to create interactive UIs.

AWS

Amazon Web Services is a subsidiary of Amazon providing on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis.

Postman

Postman is an API platform for building and using APIs. Postman simplifies each step of the API lifecycle and streamlines collaboration so you can create better APIs—faster



Git

Git is a distributed version-control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files.

MongoDB

MongoDB is a non-relational document database that provides support for JSON-like storage. The MongoDB database has a flexible data model that enables you to store unstructured data.

Jira

Jira is a powerful work management tool designed for software teams that want to organize and track their projects. It is an extremely flexible tool that can be customized to suit your team's unique workflows.

SAP

SAP is the most-used ERP software in the market and contains hundreds of fully integrated modules covering nearly every aspect of business management.

My Contributions

During my internship at Infuse, I was able to learn about and contribute to a variety of the company's projects. In this section, I will discuss my significant contributions to the research and development team, as well as the delivery team, specifically in the areas of self-driven testing and test automation.

Training and Preparation:

The first phase of my internship included extensive training in which I became acquainted with the useMango product as well as a variety of other in-demand technologies. Through mentor-led sessions, I acquired knowledge about various tools and technologies relevant to the domain of the product. Following each session, I completed exercises designed to reinforce my understanding, ensuring that I grasped the concepts within the expected timeframe. These exercises were evaluated based on industry standards, and any areas requiring improvement were identified for refactoring.

ISTQB Certification:

As a prerequisite to becoming an employee at Infuse, I undertook the International Software Testing Qualifications Board (ISTQB) examination. Drawing upon the knowledge I gained during the training period, I successfully cleared the certification, showcasing my competence in software testing principles and practices.

Self-Driven Testing Proof of Concept:

After clearing the ISTQB examination, I was assigned to the Research and Development team, where I collaborated with a fellow intern in a 2-member team. Our primary task was to prepare a proof of concept (POC) for self-driven testing, an innovative approach akin to autonomous testing, eliminating the need for human intervention in the testing process.

Through comprehensive research and leveraging the expertise of the team, we devised a robust framework for self-driven testing. This involved identifying suitable testing tools and techniques, implementing automation scripts, and integrating them with the existing test infrastructure. We meticulously designed and executed test scenarios, focusing on achieving optimal coverage and reliability.

Successful Implementation:

Our efforts resulted in the successful implementation of the self-driven testing POC. The framework demonstrated the capability to autonomously execute test cases, identify potential issues, and generate detailed reports without human intervention. This breakthrough development showcased the potential to significantly enhance testing efficiency, speed, and accuracy, thereby saving time and resources for the organization.

Client Projects: Test Automation and Regression Testing

Building upon our success with the self-driven testing POC, I was assigned to a crucial client project. In this role, I primarily focused on automating manual test cases and creating new test cases to enhance the overall testing process. Utilizing industry-standard automation tools and frameworks, I developed robust and scalable automation scripts that reduced manual effort, minimized human errors, and accelerated the overall testing lifecycle.

Throughout the project, I collaborated closely with the development team, gathering requirements, designing test scenarios, and continuously refining the automation framework. My contributions resulted in increased efficiency, improved test coverage, and timely delivery of high-quality software to the client.

Certifications

1. ISTQB

Project timeline/Project diary

January 2023

- Week 1
    - Formal Orientation and onboarding process.
    - Introduction to useMango.
    - Exploring features of useMango.
    - Automated a test using the product.
    - Environment and tools set up for development.

- Week 2
    - Introduction to Programming With Ruby + Exercises
    - Introduction to HTML, CSS, JS & DOM + Exercises
    - Introduction to Automation
    - Introduction to Selenium + Exercises
    - Introduction to Git & source code management + Exercises
    - Introduction to Containerization and Docker + Exercises

- Week 3
    - Workshop introduction + Sample solution
    - Workshop: Build a basic containerized testing framework for a practice website
    - Demo of work shop
    - CI & CD pipelines (with Jenkins)
    - Workshop: CI & CD
    - Programming in Python + Exercises

February 2023

- Week 4
    - Introduction to Webservice architecture
    - Python Webservice Framework + Exercises
    - Workshop: Build WebService
    - Workshop: WebService Unit Testing + API Testing

- Week 5
    - Workshop:
      Involves the use of entire set of skills learned. For a given a problem statement expected to design, develop and test Full Stack solution. This was under the guidance of team mentors.
    - Workshop review + fixes

- Week 6
    - Introduction to AWS Services
    - Workshop project manual deployment to AWS
    - Infrastructure as Code

- Week 7
    - Workshop project automated deployment on AWS
    - Teams demo project To Head of Training

March 2023

- Week 8
    - Preparation of ISTQB Certification Exam

- Week 9
    - ISTQB Examination

- Week 10
    - R & D - Self Driven Testing
    - Understanding what Self Driven Testing is
    - Getting Upto-Date with previous work done

- Week 11
    - Identifying all the workflows of a website

April 2023

- Week 12
    - Filtering/Prioritizing the workflows to be tested

- Week 13
    - Finding clickables for each of the workflows
    - Generating test Scripts

- Week 14
    - Demo of Complete POC to the Product Owner
    - Client Project Assignment
    - Understanding the domain of Client Projects

- Week 15
    - Client Project 1 - Regression Testing

May 2023

- Week 16 - Week 18
    - Client Project 2 - Test Automation

- Week 19
    - Infuse Academy Training

My Reflections / Experiences of Internship

My internship at Infuse Consulting has been an incredible experience, filled with fresh challenges that have kept me engaged every day. The company's culture is centered around fostering an insatiable thirst for knowledge and empowering employees to continuously learn and develop. Being immersed in the industry and actively participating in product development has offered me invaluable learning opportunities and hands-on experience.

One of the standout aspects of Infuse is the strong sense of support and collaboration. I have never felt alone during my internship, as I have been encouraged to interact with colleagues, seek guidance, and ask for assistance whenever needed. Throughout this internship, I have gained extensive knowledge in software development, clean code architecture, testing fundamentals, and honing my coding skills. The company's nurturing environment has allowed me to experiment with new ideas and concepts. This ongoing process of exploration and learning has made each day both stimulating and educational.

In conclusion, I am immensely grateful for the opportunity to be a part of Infuse Consulting, where learning and growth are not only encouraged but embraced. I extend my best wishes to all the team members as I continue on this journey of personal and professional development.

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