

# INTERNSHIP LETTER



2<sup>nd</sup> June 2023

## INTERNSHIP CERTIFICATE

This is to certify that **Aftab Saeedi**, Roll No. 2130, currently pursuing the 4<sup>th</sup> 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 9<sup>th</sup>, 2023. During his internship, he has consistently displayed exemplary performance by successfully accomplishing assigned tasks and other related responsibilities.

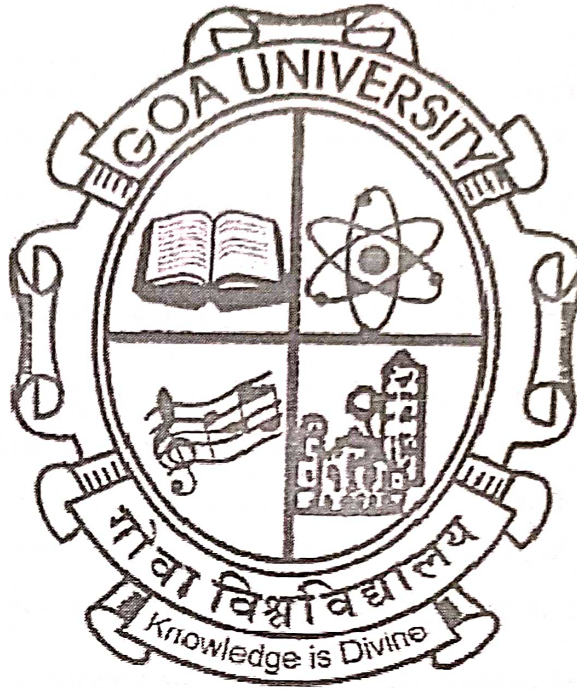
Aftab exhibits a strong sense of self-motivation and requires minimal supervision to effectively complete his assigned tasks. He has demonstrated remarkable aptitude for swiftly acquiring the required domain knowledge and mastering the necessary technologies. His rapid learning pace has greatly contributed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

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Subodh Borkar", written over a horizontal line.

Subodh Borkar,  
Head of Product Development-use Mango

# GOA UNIVERSITY



## GOA BUSINESS SCHOOL

### CERTIFICATE OF EVALUATION

This is to certify that Mr. Aftab Saeedi 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: June 2023

Dean, Goa Business School



## **INTERNSHIP REPORT**

**AFTAB SAEEDI**

**2130**

Goa University

## **REPORT OF INTERNSHIP DONE AT INFUSE CONSULTING**

SUBMITTED BY

**AFTAB SAEEDI**

**2130**

UNDER THE GUIDANCE OF

**MR. SUBODH BORKAR**

(Head of Product Development, useMango, Infuse Consulting)

# INTERNSHIP LETTER



2<sup>nd</sup> June 2023

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Aftab 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,

A handwritten signature in blue ink, appearing to read "Borkar", with a stylized flourish underneath.

Subodh Borkar,  
Head of Product Development - useMango

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## Acknowledgement

The internship experience I had with Infuse proved to be a remarkable opportunity for personal growth and professional development. I am immensely grateful to the exceptional individuals who mentored and supported me throughout this period, as their guidance was instrumental in making this internship a truly rewarding experience. It is with deep appreciation that I acknowledge the efforts of everyone involved in making this internship possible.

I would like to express my deep gratitude to Mr. Nalin Parbhu, the CEO/CTO of Infuse Consulting, for granting me the opportunity to intern at the organization. It is with sincere appreciation that I acknowledge Mr. Subodh Borkar, the Head of Product Development at useMango, Infuse Consulting, for his invaluable mentorship, advice, and guidance throughout my internship. I am truly grateful for his significant contribution to my professional growth.

I would also like to extend my utmost appreciation to Mr. Piyush Sharma, a Product Engineer at Infuse Consulting, despite his demanding responsibilities. He generously took the time to listen, guide, and ensure that I stayed on the right track, enabling me to successfully fulfill my tasks during the internship. I am genuinely thankful for his support and dedication.

I am truly fortunate to have had the opportunity to work alongside these exceptional individuals, and their contributions have made a significant impact on my overall learning experience at Infuse Consulting. I thank all the faculty and staff at the MCA, Goa University for their constant encouragement and support during the entire course work.

Finally, I would like to express my gratitude to the Infuse family, including my seniors Delroy Martins, Imtiyaz Khan, Vinay Prabhu, Joyrel Vaz, Rochelle Martins, Minaxi Patil, Onkar Parshekar, and Preshly Fernandes, for their unwavering support and guidance. I am also thankful to my internship colleagues for their continuous support and encouragement throughout this period. The Infuse team created a nurturing environment that facilitated learning and collaboration, and for that, I am truly grateful.

I consider this opportunity as a significant milestone in my career development. I am committed to utilizing the skills and knowledge I have acquired to the best of my abilities, and I will continue to work towards their further enhancement.

- AFTAB SAEEDI

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## Introduction

This report provides a concise overview of my full-time on-site internship at Infuse Consulting. It covers essential information about the organization, the projects I worked on, and the tasks I completed during my internship. I will discuss the company, work culture, and the projects I contributed to, including the modules I built and the tasks I accomplished. The report emphasizes my learning experience, the knowledge gained from successfully completing assigned tasks, and the tools and technologies utilized during my internship. I will conclude by sharing how this experience has contributed to my personal and professional growth.

## Company Profile



### About Infuse Consulting

Infuse Consulting is an internationally recognized company that excels in strategic consulting and technology partnerships to deliver optimal solutions. Since its establishment in 2002, Infuse has become a leading provider of Test Automation and Lifecycle Transformation Services, benefiting over 500 businesses worldwide. With a focus on Test Automation and DevOps, Infuse consistently delivers reliable results for organizations seeking to enhance their Software Delivery. As a Gold Partner of Micro Focus and Oracle, and with a network of partners including CA, Microsoft, AWS, and SAP, Infuse takes pride in offering innovative solutions, particularly in test automation. Their extensive experience in automating mobile testing since 2003 has led to the development of useMango™, a cutting-edge scriptless test automation tool.



## 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

By utilizing useMango, businesses can significantly improve the speed and efficiency of their tests, resulting in time and cost savings. With over 200 pre-built components to choose from, building a test is made easy - simply add the required data, and it's ready to run. useMango offers a seamless solution for forms and complex pages, as its scanner can quickly identify all testable objects on any UI with just a single click, creating new components as needed. Additionally, useMango provides the flexibility to create custom components when necessary. Software testers can enhance the useMango generated scripts with custom code, leveraging built-in frameworks such as Ruby, VBScript, Python, and more.

## 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.

## Product – UseMango

### Overview

UseMango is a windows application which has several different architectural structures, from the server to website and common libraries that contain shared code. UseMango is maintained and developed by the Infuse team and has customers worldwide.

### 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.



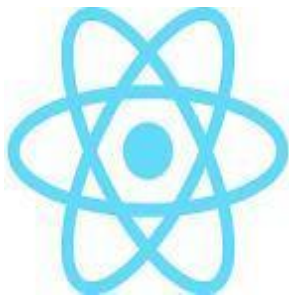
## Python

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.

## My Contributions

The early stage of the internship was about learning about the useMango product, various technologies used in the company and getting accustomed to the domain of the product. The first few weeks were a training period, where we had to learn about various topics. Task was assigned to explore the useMango app, to explore its features, write tests, execute the tests, view the results and a review session wherein all that was learnt was shared among other interns and feedback was given by the mentor.

After the introduction to useMango, the next task assigned was to identify bugs and provide suggestions for improvement. This involved actively exploring the platform, testing its various features, and documenting any issues encountered. I diligently investigated different functionalities, workflows, and user interfaces to identify any potential glitches, errors, or areas that could be enhanced. Throughout the process, I meticulously documented each bug, including steps to reproduce it and any relevant details.

Additionally, I focused on providing constructive suggestions to improve useMango. Based on my experience and understanding of the platform, I brainstormed ideas for enhancing its usability, functionality, and overall user experience. These suggestions encompassed areas such as user interface improvements, streamlining processes, introducing additional features, and enhancing the platform's performance and stability. By actively engaging in bug identification and providing valuable suggestions for improvement, I contributed to the ongoing development and refinement of useMango. This task allowed me to not only familiarize myself with the platform in greater detail but also contribute to its continuous enhancement and optimization.



Following the bug identification and suggestion phase, I was assigned to the Self Driven Research Team. my primary task was to develop a Proof of Concept for self-driven automation. The objective was to create an engine that could crawl a given website URL, identify all the workflows within the website, and automatically generate tests for them. The process involved extensive research and analysis to understand various website structures and workflow patterns. I implemented algorithms and techniques to navigate through the website, detect workflows, and extract relevant information. The engine successfully generated automated tests for identified workflows, enabling efficient and comprehensive testing of web applications. This proof of concept showcased the potential for streamlining and automating testing processes, saving time and resources while ensuring thorough coverage of website functionalities.

Careful testing was conducted after the upgrade to ensure the components continued to function as expected. I executed comprehensive test cases and performed regression testing to identify and resolve any issues that may have arisen due to the Ruby upgrade.

Throughout my research, I prioritized maintaining open and effective communication channels with both the research team and stakeholders involved. Regular updates were provided to keep them informed about the progress made and any obstacles encountered along the way. This collaborative approach ensured a smooth and efficient research process. By successfully upgrading the existing components to the latest Ruby version, I contributed to maintaining a secure and up-to-date system while taking advantage of the latest features and performance improvements offered by the Ruby programming language.

Following the successful delivery of the Proof of Concept for self-driven testing, I transitioned into a new role, working on a client project for Solent University. As part of this assignment, my responsibilities encompassed various tasks, including writing test steps, conducting regression testing, and implementing automation testing. To commence, I engaged in close collaboration with the development team and project stakeholders to gain a deep understanding of the Solent University project's requirements and functionalities. Drawing upon this insight, I meticulously formulated comprehensive test steps and test cases, ensuring extensive coverage of the application's features and functionalities.

In addition, I was assigned to focus on automation testing for the Solent University project. As part of this assignment, we utilized useMango as our automation tool for executing test cases. By leveraging useMango's capabilities, such as its pre-built components and scriptless automation approach, we were able to streamline and accelerate the automation process. This allowed us to create efficient and reliable automated test scripts, reducing the time and effort required for repetitive test cases. The use of useMango as our automation tool enhanced our overall testing efficiency and contributed to delivering high-quality results for the Solent University project.

Throughout the testing process, I maintained detailed documentation of test results, identified issues, and provided clear and concise reports to the project stakeholders.

By diligently performing test steps, and incorporating automation where applicable, I contributed to the overall quality and stability of the Solent University project. My efforts aimed to ensure that the application met the client's requirements and provided a seamless user experience for the end-users.

## 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
  - Ruby Program Exercises
  - Introduction to HTML, CSS, JS & DOM
  - Exercises
  - Introduction to Automation
  - Introduction to Selenium
  - Selenium Exercise
  - 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)
  - Exercises
  - 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 so far. For a given a problem statement expected to design, develop and test 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
  - Workshop project automated deployment on AWS
  - Teams demo project To Head of Training
  
- Week 7
  - Preparation for ISTQB Certification Exam

## My Reflections / Experiences of Internship

My internship at Infuse Consulting has been an amazing experience, filled with new challenges every day. The company's culture promotes continuous learning and growth. I've gained practical experience in product development and learned about software development and clean code architecture. The supportive environment allowed me to explore new ideas and implement them in the product. I'm grateful for the opportunity to be a part of Infuse Consulting and wish the team all the best on their journey.

In conclusion, I am extremely grateful to be a part of Infuse Consulting and have the opportunity to learn and grow. I extend my best wishes to all the members of the team.

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