

Report of Internship at IMMO Information Technology Pvt Ltd

An Internship Report for
CSA 652 : Industry Internship/Software project
Credits: 16

Submitted in partial fulfillment of Masters Degree
Masters of Computer Application

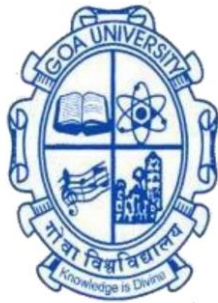
By

AMAY H. GAWAS

Seat Number : 2239
ABC ID : 590-063-140-855
PRN : 201807973

Under the Mentorship of
MRS. DEEPTI SHAAN NAIR

The Discipline of Computer Science and Technology,
Goa Business School,
Goa University.



Goa University

Date: June 2024

Examined by:

Seal of the School

DECLARATION BY STUDENT

I hereby declare that the data presented in this Internship report entitled, “**Report of Internship at IMMO Information Technology Pvt Ltd** ” is based on the results of investigations carried out by me at IMMO Information Technology Pvt Ltd, under the mentorship of Mrs. Deepti Shaan Nair and the same have not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will not be responsible for the correctness of observations / experimental or other findings given the internship report. I hereby authorize the University authorities to upload this dissertation on the dissertation repository or anywhere else as the UGC regulations demand and make it available to any one as needed.

Signature and Name of Student

Amay H. Gawas

Seat no : 2239

Date:

Place : Goa University

COMPLETION CERTIFICATE

This is to certify that the internship report “**Report of Internship at IMMO Information Technology Pvt Ltd**” is a bonafide work carried out by Mr Amay H. Gawas, under my mentorship in partial fulfillment of the requirements for the award of the degree of Masters of computer Application in the Discipline of Computer science and Technology at the Goa Business School, Goa University.

Signature & Name of mentor

Date:

Signature of Dean of School

School Stamp

Date:

Place: Goa University

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OFFER LETTER



Amay Gawas,
H no. 322 Ghoteli No. 1
Keri Sattari Goa.
Mob - 9168915331

05th January 2024

Sub: Offer for Trainee as part of Internship for Semester VI - MCA

Dear Amay,

We take pleasure in inviting you to join IMMO Information Technology team as a **Trainee Software Developer - Intern, as part of Internship for Semester VI – MCA at Mercus, Goa.**

WORK TIMINGS, LEAVES AND REMUNERATION:

- **Training Period:** From 08th January 2024 to 30th June 2024.
- **Working hours:** When working from office the timings will be 9:00 am to 6:00 pm (1:00 pm to 2:00 pm Lunch break). While working from home the timings will be 12:00 pm to 9:00 pm. (1:30 pm to 2:00 pm Lunch break & 04.30 pm to 05.00 pm tea break).
- **Leaves:** 06 leaves during the period. Public holidays as decided for the year.
- **Working days:** 5 days week (Saturday & Sunday Off). 01st Saturday of the month is a training Saturday.
- You will be governed by the timings and the hours of work applicable to the establishment wherein you are posted, and you may be called upon work, as required.
- Your remuneration for the period would be ₹ 15,000/- (Rupees Fifteen Thousand Only) per month from 08th January 2024.

At the end of the training period you may be offered a position in the company only on successful completion of the tasks assigned to you during training period and your suitability as per the ongoing projects that time, subject to management decision. Management may also decide to extend or terminate your tenure based on your training assessments.

We once again welcome you at IMMO Information Technology and look forward to your contributions in growing the business with the team here.

Best Wishes,

Nimish Shikerkar
COO/Director



I have read the offer letter and I am happy to accept training at IMMO Information Technology. I will be joining Mercus office on 08th January 2024 and look forward to being a part of the IMMO Information Technology Team.

(Amay Gawas)

(Sign)

CMM Commercial Complex, 1st Floor, Survey No. 21/10 Renovadi, MercusTiswadi, Goa 403005

Phone: 8459649505

<http://www.immoinfotech.com>

INTERNSHIP CERTIFICATE



30th April 2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Amay Gawas**, student of Master of Computer Application (MCA) of Goa University, Goa, is currently undergoing his semester IV internship with our organization from 08th January 2024, which will end on 30th June 2024.

During his tenure to date, he has met the expectations of his Team leader and was found to be sincere.

This certificate was issued on his request for project report submission at Goa University.

The final internship certificate will be issued on completing his internship tenure.

For IMMO Information Technology Private Limited.

A handwritten signature in blue ink, appearing to read 'Nimish Shikerkar', written over a horizontal line.

Mr. Nimish Shikerkar
Director/COO



ACKNOWLEDGEMENT

First and foremost, I would like to thank the Goa Business School, Goa University, for giving me the opportunity to carry out an internship and acquire real-world industrial experience.

I thank Mr. Ramrao Wagh and all the faculty of MCA, Goa University for their constant encouragement and support during the project work.

I would like to thank IMMO Information Technology Pvt Ltd for allowing me to do this internship and considering me capable to work on such projects. I would like to express my gratitude to Mr. Sudesh Mehta(CEO, Immo Information Technology) and Mr. Nimish Shikerkarr(COO, Immo Information Technology)for giving me this opportunity and for all the guidance provided to me during the internship.

I would like to extend my gratitude to Mr. Ismail Shaikh(HR Manager, Immo Information Technology) for helping me out when in need.

I am also grateful to Mr. Satvesh Karmali(Team Lead, Service Team, Immo Information Technology),and the members of my team especially for all the help, time, patience, support and encouragement during my internship period. I would also like to thank Mr. Dattaprasad Chodankar, Mr. Amey Kuvelkar, Mr. Nitendra Priolkar, Mr. Ashik Parab, and the whole IMMO family for providing us the resources and guidance.

I would like to express my special gratitude and thanks to IMMO Information Technology employees for giving me such attention and time.

Finally, I would like to thank my family and friends who guided me in all aspects.

EXECUTIVE SUMMARY

Starting 08 January 2024 I began my internship at IMMO information technology pvt ltd.

Diving into Software development and testing focusing on technologies like C#, dotnet, Angular, Jasmine, Typescript and Cypress. The company's innovation approach, dedication towards product development and constant support towards my learning phase was a great help in my professional growth in an excellent learning environment.

Organization overview :

Established in 2005, IMMO InfoTech emerged with the aim of providing IT services to IAZI (www.iazi.ch), its parent company. It didn't take them long to expand their expertise from real estate to specialized IT services, meticulously designed to meet the specific needs of businesses operating in a competitive digital world.

Task Handled :

During the tenure of my internship, I got opportunities to handle a wide variety of tasks which ranged from Legacy code maintenance, service migration, implementing new features in existing projects, API testing, writing APIs, doing research of different tools that can be added to the projects for improving code quality.

Learning Outcomes :

The internship at IMMO information technology pvt ltd. was instrumental in enhancing my technical and professional abilities, during this internship I became proficient in various programming languages and technologies notably Dotnet, Angular and Cypress alongside skills in Git, and other technologies like Postman.

My problem solving skills were sharpened through hands on experiences with technologies

CHAPTER 1: ABOUT THE ORGANIZATION

1.1. Birds-eye-view

Established in 2005, IMMO InfoTech emerged with the aim of providing IT services to IAZI (www.iazi.ch), its parent company. It didn't take them long to expand their expertise from real estate to specialized IT services, meticulously designed to meet the specific needs of businesses operating in a competitive digital world.

The team at IMMO InfoTech comprises software experts who have been delivering specialized IT services for over a decade. With more than seventy software engineers, their team is highly diverse and possesses comprehensive knowledge in software development. They position themselves as the one-stop solution for all software development requirements, stepping forward as partners in fostering digital innovation.

As a team of software experts, they empower enterprises with custom software solutions, meticulously tailored to their specific requirements. They assist clients in going beyond off-the-shelf software solutions, accelerating business processes. Improving operational efficiencies, reducing time to market, and establishing program/PLM processes are among the facets covered by their software services.

Website: <http://immoinfotech.com>

Industries: Information Technology and Services

Company size: 70+ employees

Headquarters: Switzerland.

Operating Center: Mercés, Goa

Type: Privately Held

Founded: 2005

1.2. Products/Services

1.2.1. HEDO

The valuation of properties is done based on various factors like the locality, dimensions, details of the building, parking spaces, luxury details, etc.

1.2.2. Location report

Given location address, shows the accuracy level and gives Micro-level ratings.

1.2.3. Nearest Neighbors

Given a valid address, and other factors like the level of comparison, property type, and number of comparable properties, it generates a report.

1.2.4. Maps

Shows results based on a given address/area concerning population, taxes, market, the nearby area, noise, etc.

1.2.5. Offered Rent

Given an address and its properties/characteristics like its type, living surface, number of rooms, built year, etc, it gives the monthly rent of that place.

1.2.6. Rent Calculator

Helps calculating the approximate rent of a particular type of property in any location.

1.2.7. Swiss Property Benchmark

Performance Analyze and real estate benchmark for Real-estate investors.

1.2.8. Ecocheck

Get an assessment of the energy efficiency and renovation planning of your property with just a few details.

1.3. Sections within Organization

The Team of IMMO INFORMATION TECHNOLOGY is further divided into teams as followed

- **Management Team**
- **REPM5 Team**
- **Web Team**
- **Testing Team**
- **Dashboard Team**
- **Maps_PRO Team**
- **Service Team**
- **Mobile Team**
- **Data Scientist Team**
- **AI Team**
- **Design Team**
- **SPB Team**
- **Data Crawler Team**
- **System Team**

I was assigned to the Service Team for training purposes and got an opportunity to learn and contribute to Web-based Dotnet Services.

CHAPTER 2: TASKS HANDLED

2.1. Service Migration

We migrate all the existing projects to new technologies to enhance business functionality. The services were to be migrated to .NET6.

My Responsibilities :

- Creating controller.
- Request and response model.
- Mapping service.
- Testing the response.

Tools and technologies used :

- Visual studio code
- .NET 6

2.2. Time logging

Adding time logging column to a database table to calculate difference between request time and response time.

My Responsibilities :

- Adding column to the database table.
- Writing a query to calculate the time difference.

Tools and technologies used :

- Visual studio code
- MSSQL
- Remote desktop

2.3. Swagger improvements

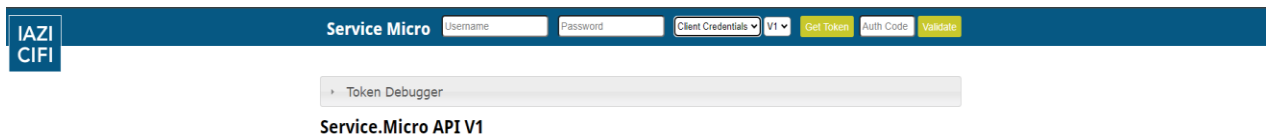
Adding IdentityServer token based login option for swagger to test API endpoints.

My Responsibilities :

- Adding UI elements for IdentityServer token based login.
- Implementing the login functionality using javascript.

Tools and technologies used :

- Visual studio 2013
- HTML5
- CSS3
- Javascript

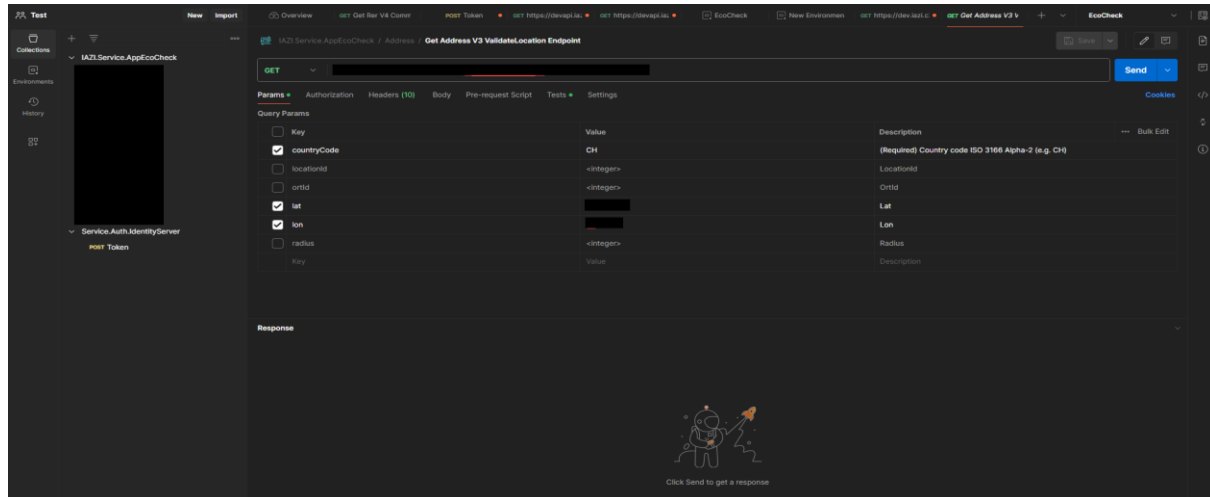


2.4. API endpoints testing using postman

Testing Given API endpoints using postman to ensure they are working as expected.

Tools and technologies used :

- Postman



2.5. Shared Library update

Migrating .NET6 project to .NET8

Tools and technologies used :

- Visual studio code
- .NET8

2.6. Converting code written in python to C#

My Responsibilities :

- Converting functions written in python to C#.

Tools and technologies used :

- Visual studio code
- Python
- C#

- In the Month of April I was transferred to the Web team upon my request to get more exposure to the technologies used by IMMO information technology pvt ltd.
- The web team work on mostly Front end part of the product and DB.
- It uses technologies like Angular (7, 8 and 14)
- The team also has asp.net MVC project which is a full stack project in dotnet 4.5
- In the web team I was given the following tech research task:

2.7. Implementing Lint, E2E testing and Unit testing

To uplift the quality of code and the overall project, I was assigned with a task to implement Lint, E2E testing and Unit testing on an angular project.

My Responsibilities :

- Implementing Lint using ESLint.
- Implement E2E testing using Cypress
- Write unit tests for the components

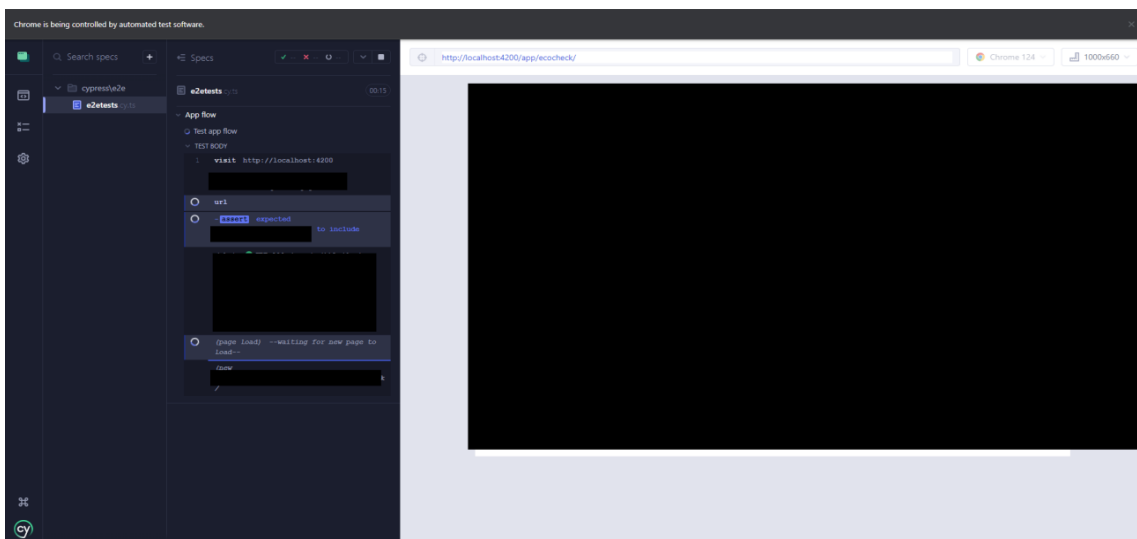
Tools and technologies used :

- Visual studio code
- Angular 14
- Typescript
- ESLint
- Cypress

```

46     "no-console": "warn",
47     "no-multiple-empty-lines": ["error", {"max": 1}],
48     "prefer-const": "warn",
49     "no-empty": "error",
50     "space-before-function-paren": "error",
51     "max-len": ["error", {"code": 250}],
52     "eqeqeq": "warn",
53     "no-magic-numbers": ["error", {"ignore": [0, 1]}],
54     "no-unused-vars": "error",
55     "semi": "warn",
56     "no-var": "error",
57     "default-case": "error",
58     "no-alert": "error",
59     "no-multi-spaces": "error",
60     "lines-between-class-members": "error",
61     "@typescript-eslint/no-explicit-any": "off",
62     "no-empty-function": "off",
63     "@typescript-eslint/no-empty-function": "off",
64     "@angular-eslint/no-empty-lifecycle-method": "off"
65

```



Chrome is being controlled by automated test software.

Karma v 6.4.1 - connected; test: complete;

Chrome 124.0.0.0 (Windows 10) is idle

 **Jasmine** 4.2.0

2 specs, 0 failures, randomized with seed 40923

```

MainComponent
  • can load instance
  • showEsg has default value

```

CHAPTER 3 : LEARNINGS

3.1. Tools & Technologies :



BitBucket

Bitbucket is a web-based version control repository hosting service owned by Atlassian, for source code and development projects that use either Mercurial (since launch) or Git revision control systems. Bitbucket offers both commercial plans and free accounts. It offers free accounts with an unlimited number of private repositories (which can have up to five users in the case of free accounts). Bitbucket integrates with other Atlassian software like Jira, HipChat, Confluence, and Bamboo.



Visual Studio Code

Code Visual Studio Code is a source code editor developed by Microsoft for Windows, Linux, and macOS. It includes support for debugging, embedded Git control and GitHub, syntax highlighting, intelligent code completion, snippets, and code refactoring. It is highly customizable, allowing users to change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. The source code is free and open-source and released under the permissive MIT License. The compiled binaries are freeware and free for private or commercial use.



Visual Studio 2013

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs and websites, web apps, web services, and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store, and Microsoft Silverlight. It can produce both native code and managed code.



SQL Server 2014 Management Studio

It is a software application first launched with Microsoft SQL Server 2005 that is used for configuring, managing, and administering all components within Microsoft SQL Server. The tool includes both script editors and graphical tools which work with objects and features of the server.



Remote Desktop Connection

It is a Windows feature that lets users control a remote computer or virtual machine over a network. It uses Remote Desktop Services (RDS), Microsoft's thin client implementation, where the desktop and software of the remote computer are accessible via the Remote Desktop Protocol (RDP). With RDS, only the user interface is sent to the client system, while all processing occurs on the server. This contrasts with application streaming systems like Microsoft App-V, where programs are streamed and executed on the client machine.



Snagit:

Snagit is screen capture and screen recording software for Windows and macOS. It was created and developed by TechSmith and was first launched in 1990. Snagit is available in English, French, German, Japanese, Portuguese and Spanish versions.



Postman

The Postman testing tool is a complete API development platform with various built-in tools that support every stage of the API lifecycle. Postman tool allows you to design, mock, debug, automated testing, document, monitor and publish the APIs - everything from one place.

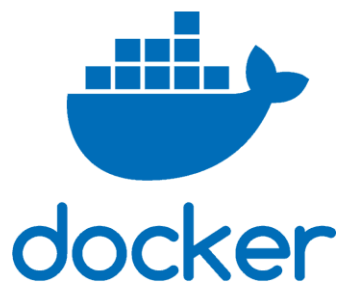


Swagger

Swagger is an Open Source set of rules, specifications and tools for developing and describing RESTful APIs. The Swagger framework allows developers to create interactive, machine and human-readable API documentation.

API specifications typically include information such as supported operations, parameters and outputs, authorization requirements, available endpoints and licenses needed. Swagger can generate this information automatically from the source code by asking the API to return a documentation file from its annotations.

Swagger helps users build, document, test and consume RESTful web services. It can be used with both a top-down and bottom-up API development approach. In the top-down, or design-first, method, Swagger can be used to design an API before any code is written. In the bottom-up, or code-first method, Swagger takes the code written for an API and generates the documentation.



Docker

Docker is an open platform for developing, shipping, and running applications. Docker enables you to separate your applications from your infrastructure so you can deliver software quickly. With Docker, you can manage your infrastructure in the same ways you manage your applications. By taking advantage of Docker's methodologies for shipping, testing, and deploying code, you can significantly reduce the delay between writing code and running it in production.

3.2. Languages & frameworks :



.NET Framework

.NET is a developer platform made up of tools, programming languages, and libraries for building many different types of applications.

There are various implementations of .NET. Each implementation allows .NET code to execute in different places—Linux, macOS, Windows, iOS, Android, and many more.

.NET Framework is the original implementation of .NET. It supports running websites, services, desktop apps, and more on Windows.

.NET is a cross-platform implementation for running websites, services, and console apps on Windows, Linux, and macOS. .NET is open source on GitHub. .NET was previously called .NET Core.



C#

C# is a general-purpose high-level programming language supporting multiple paradigms. C# encompasses static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented (class-based), and component-oriented programming disciplines.

The C# programming language was designed by Anders Hejlsberg from Microsoft in 2000 and was later approved as an international standard by Ecma (ECMA-334) in 2002 and ISO/IEC (ISO/IEC 23270 and 20619) in 2003. Microsoft introduced C# along with .NET Framework and Visual Studio, both of which were closed-source. At the time, Microsoft had no open-source products. Four years later, in 2004, a free and open-source project called Mono began, providing a cross-platform compiler and runtime environment for the C# programming language. A decade later, Microsoft released Visual Studio Code (code editor), Roslyn (compiler), and the unified .NET platform (software framework), all of which support C# and are free, open-source, and cross-platform. Mono also joined Microsoft but was not merged into .NET.

As of November 2023, the most recent stable version of the language is C# 12.0, which was released in 2023 in .NET 8.0.



Angular

Angular is a development platform, built on TypeScript.

As a platform, Angular includes:

A component-based framework for building scalable web applications

A collection of well-integrated libraries that cover a wide variety of features, including routing, forms management, client-server communication, and more

A suite of developer tools to help you develop, build, test, and update your code

With Angular, you're taking advantage of a platform that can scale from single-developer projects to enterprise-level applications. Best of all, the Angular ecosystem consists of a diverse group of over 1.7 million developers, library authors, and content creators.



Javascript

JavaScript is a programming language used to create dynamic content for websites. It achieves this by adding new HTML elements while modifying existing ones. Many coders enhance web development skills using JavaScript to create user-friendly and interactive websites.



ESLint

ESLint is an open-source Javascript linting utility originally created by Nicholas C. Zakas in June 2013. It is frequently used to find problematic patterns or code that doesn't adhere to certain style guidelines. ESLint is written using Node.js to provide a fast runtime environment and easy installation via npm.

With ESLint you can impose the coding standard using a certain set of standalone rules. Yes, you can turn those rules on and off. These rules are completely pluggable.



Cypress

Cypress is a next generation front end testing tool built for the modern web. We address the key pain points developers and QA engineers face when testing modern applications.

It makes it possible to:

- Set up tests
- Write tests
- Run tests
- Debug Tests

Cypress is most often compared to Selenium; however Cypress is both fundamentally and architecturally different. Cypress is not constrained by the same restrictions as Selenium.

This enables you to write faster, easier and more reliable tests.

CHAPTER 4: CHALLENGES

During my period of internship at IMMO information technology I came to know that there was a certain gap in the knowledge acquired from the curriculum and the skillset that is required to survive the job market.

When I first joined the internship I was allotted to the Service team of IMMO information technology pvt ltd, the service team used dotnet, C# and other technologies like the identity server, these technologies were very new for me and it took me considerable time to get used to them since they were not included in the MCA curricular.

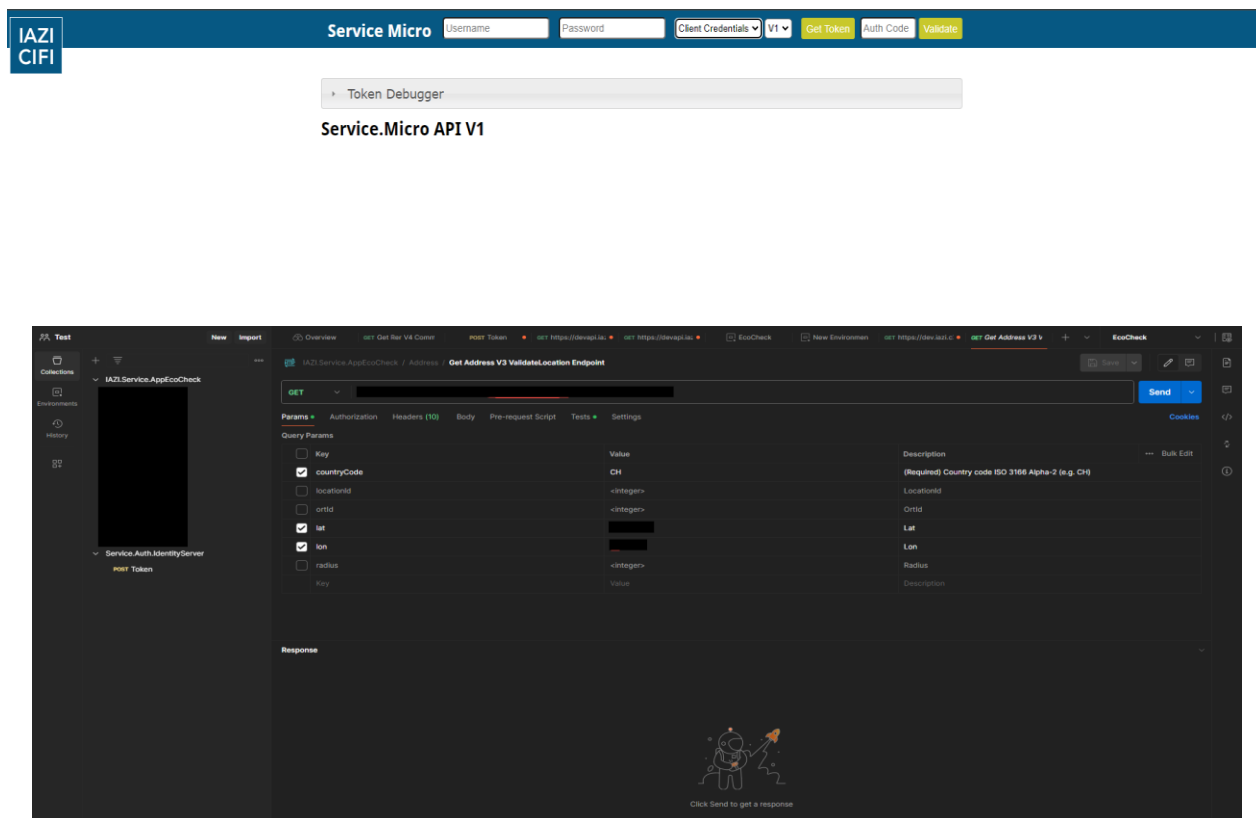
After leaving the service team and joining the web team I was allotted tasks that required knowledge of Unit testing, Linting techniques and e2e testing, All of these concepts were new to me, I had learned about unit testing in one of the generic electives that were part of the curriculum, but unit testing in web frameworks is considerably different from what we learnt in the classroom, again it took me a considerable amount of time to getting used to these technologies

Another difficulty presented itself in the form of socializing in the workplace, although all the staff of IMMO information technology is very welcoming, it took some time to socialize with other colleagues.

REFERENCES

- <https://docs.cypress.io/guides/end-to-end-testing/writing-your-first-end-to-end-test>
- <https://www.google.com/>
- <https://www.youtube.com/>
- <https://stackoverflow.com/>
- <https://eslint.org/docs/latest/use/getting-started>
- <https://material.angularjs.org/latest/>
- <https://www.javatpoint.com/c-sharp-tutorial>
- <https://dotnettutorials.net/>
- <https://www.docker.com/>
- <https://bitbucket.org/>

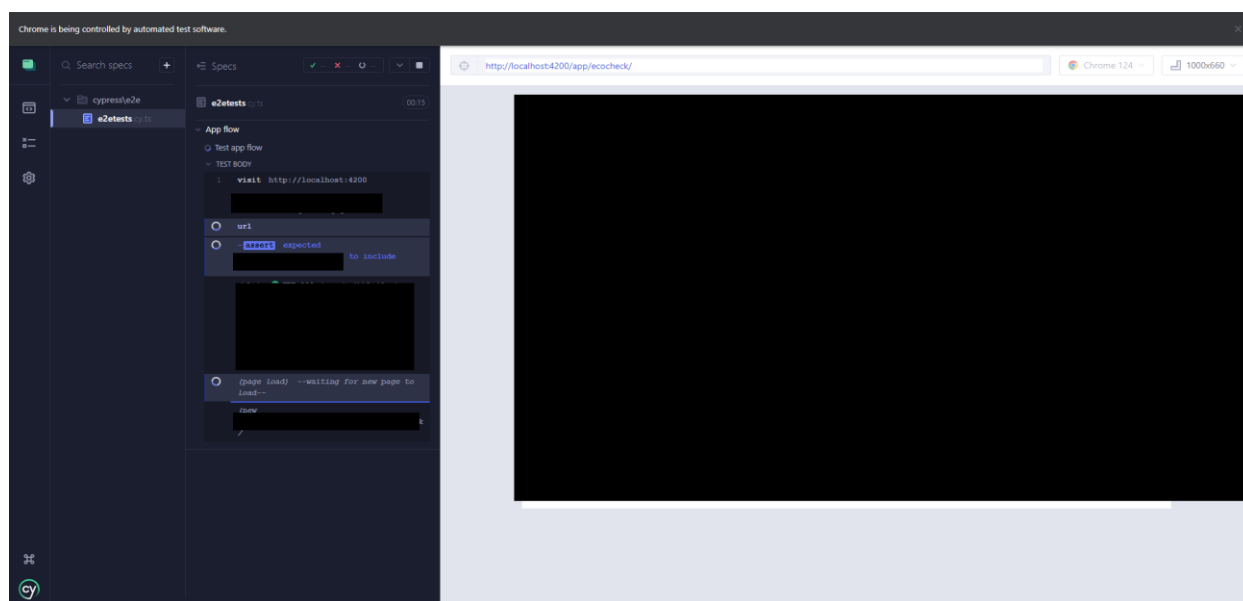
APPENDIX I: SAMPLES OF THE WORK DONE



```

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53     "no-magic-numbers": ["error", {"ignore": [0, 1]}],
54     "no-unused-vars": "error",
55     "semi": "warn",
56     "no-var": "error",
57     "default-case": "error",
58     "no-alert": "error",
59     "no-multi-spaces": "error",
60     "lines-between-class-members": "error",
61     "@typescript-eslint/no-explicit-any": "off",
62     "no-empty-function": "off",
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