PC641 - MS-IT Project Winter Internship

Prepared By
Archan Ranade - 201712001

Internship Details
Start Date: 2nd Jan, 2019
End Date: 9th May, 2019
Duration: 17 weeks

Company Name
OpsHub Technologies Pvt. Ltd.,
Website: https://www.opshub.com/

Presentation Date
10th May 2019, Friday

Timeline

Time	Work Done	Area of Work	Learning
2 Jan - 15 Jan	Introduction to OIM and basic training	Learning product features, its code base	How product works, their code structure
15 Jan - 15 Feb	Bug fixation and Test cases for the same, QA	Testing, Programming and QA	Finding root cause for bugs, fixation & testing
15 Feb - 20 Feb	Requirement Gathering and Product Research	Feasibility Analysis for Project	Feasibility for project, API research
20 Feb - 1 March	Fixing existing issues	Programming and Testing	Finding existing bugs and automation for EA
1 March - 22 April	Enhancing code base and support new entity type	Programming and Testing	Test driven development (TDD)
22 April - 9 May	New features and bug fixing in product, PS	Programming, Testing and PS	Customer meetings, delivering for PS work

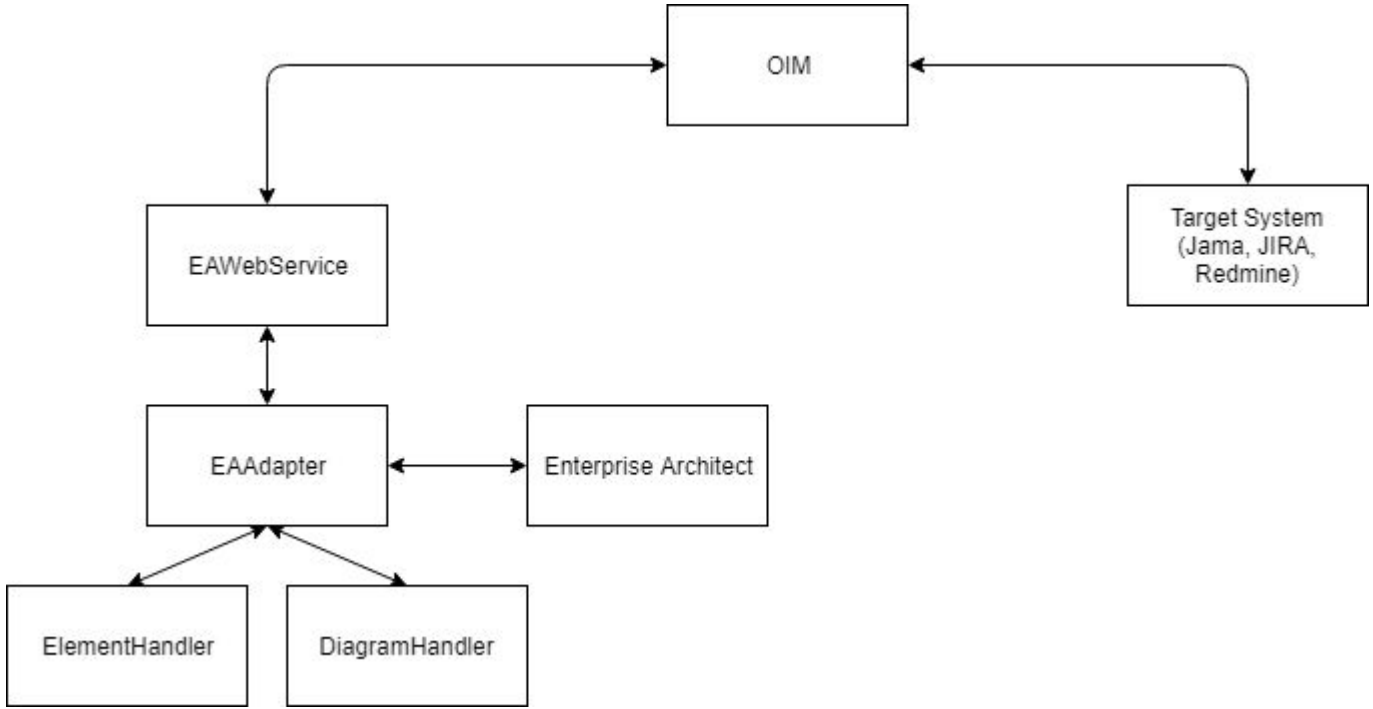
Project Description

- OpsHub supports more than 50 systems for integration, one of them is a popular desktop-based application called Enterprise Architect (EA) developed by Sparx Systems. EA is an enterprise wide solution to visualise, analyse, model, test and maintain all of your systems, software, processes and architectures.
- EA has different types of entities and OpsHub was supporting only one type of entity in EA known as Element.
- My project was to support integration of Diagrams in EA along with all the other functionalities which OIM provides such as reconciliation and recovery.

Development Strategy and Testing Strategy

- Development Strategy
  - Scrum master methodology with daily scrums, retros and iteration planning.
- Testing Strategy
  - Test Driven Development (TDD): I practiced Test Driven Development
  - The strategy for testing in which a developer writes all test cases first and start the development.
  - To follow this strategy, I enabled all automation test cases for my project and generated all the possible scenarios to test for integration/migration.
- Continuous Integration/Continuous Deployment: All the test cases are automated and executed daily, and for any reason if any test cases get failed, the failures are created on Azure Devops and assigned to responsible person.

High-level Flow



Design, Programming and Other Contributions

- Bug fixation: After the initial training period, two bugs were assigned for introduction to code base and getting to know how the code base. These bugs were fixed as well.
- Restructured connector implementation: The previous implementation was structured to support only one entity type i.e. Element. To implement a new entity in existing code, Factory pattern was implemented where I created two entity handlers: ElementHandler and DiagramHandler.
- Fixing automation failures: Solving existing Bugs and some infrastructure issues on automation servers. Since I followed TDD (Test Driven Development), my code was being tested everyday and failures were being addressed as they came.

Tools and Technologies used

- Java - For writing test cases and enhancing Java side implementation
- C#: For EA service code restructuring and Diagram implementation
- EA APIs: For communicating with the EA app
- Git: For managing source codes
- Jenkins: For continuous integration
- TestNG: For automation testing
- Apache Ant: For building the code

Learnings and Outcomes

- I learnt a lot of new things in these four months of my internship. Also the things which I had learnt in classroom and books were put to test with a lot of practical implementation.
- Code design and design patterns are a crucial part of a good product.
- I learnt how important documentation is before starting with coding. Also how important User Manual is to the customer and it should be regularly maintained for the ease of customer’s usage.
- I learnt new ways of code testing and automation. I also learnt how important testing is to ensure quality of a product and how to write automation tests.

Thank You