Preface

This document is my training report which covers almost everything regarding my internship which I've done at Ellipsis (Pvt) Ltd (35C, Torrington Avenue, Colombo 07), for a period of twenty four weeks.

This documentation attempt to express my gains, experiences as a Trainee Software Engineer, throughout the internship period, from 19th of October, 2015 to 31st of March, 2016 at Ellipsis.

This document adheres to the conventional 'Three Part Reporting'. Thus it has been arranged into three major chapters and they are consisted of 'Introduction to the Establishment', 'The Experiences' and 'My View', respectively.

The first chapter as depicted above contains information regarding the training establishment, in my case, Ellipsis (Pvt) Ltd. The knowledge of the workplace is pretty much important as it could guide the each and every effort inside the company. My one, the Ellipsis (Pvt) Ltd, has a little infrastructure.

The second chapter is focused on me and my deeds. It's all about the things I have done and the outcomes associated with them. The exposures, trails, mistakes, tweaks, behavioral changes and successes are described in an interesting storyline manner.

Finally the third one, the concluding part, it is all about looking everything from my perspective. My view points are always tend to be unorthodox, thus this section is going to be somewhat different. In this chapter I have expressed my feelings for the Ellipsis and the feedbacks as well.

Linganesan. K

Acknowledgement

I had a period of twenty four weeks, full of heartiest joy. A period which had made me better, gave me confidence, introduced me to the industrial world, taught me the behaviors, changed me upside down in a positive manner and most importantly it reinvented myself. The level of my gratification regarding this internship program deems to be immensely high, which is an obvious indicator for the fact 'there are a lot to be thanked'.

My initial acknowledgement in this context goes to the personals who had delivered their priceless effort and time thus I could experience the internship program.

The support from my department (Computer Science & Engineering, University of Moratuwa) is incomparably great. I deliver my heartiest gratitude to the department for providing the opportunity to work in the rising IT Company (Ellipsis). Especially our head of the department Dr. Chathura De Silva for his precious guidance, Dr. Dilum Bandara for his effortless co-ordination and everyone else who had provided their effort for the success of this program.

My sincere thanks go to the staffs of the Industrial Division, University of Moratuwa for their support, to the responsible officials of the National Apprentice and Industrial Training Authority (NAITA) for structuring such a quality internship program. You are the reasons behind my rays of the industrial exposure.

This second set of people below, who are the ones assisted me all along the way during my internship. Without these guys the program itself could have been meaningless.

I am so grateful to Mr. Rajitha U. Kuruppumulle, Founder, Chairman and CEO of Ellipsis for the provision of an invaluable opportunity to learn in an internationally recognized company within a friendly environment. I should also thank Mrs. Yasanthi Bandara, General Manager of the company for guiding me throughout the internship period. Then I would like to thank Mr. Chameera, Technical Lead of Ellipsis, for the guidance, alarms and encouragements he had given throughout the internship.

And the whole Ellipsis family, all the staffs working inside the Ellipsis, thank you very much for letting me join and helping me to be evolved as a better person.

Eventually, thank you very much again everyone who have involved in making my internship period such a fruitful experience, widening my horizons!

After typing down this Section of Acknowledgement, at this instant I'm feeling how powerless the words are. But guys please accept this simple expression of gratitude, but the sooner I could, I'll return the favor by serving the Country as a whole.

Linganesan. K

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1.1 Company Profile

Figure 1.1 Ellipsis (pvt) Ltd. Logo

Ellipsis (Pvt) Ltd [1] is a medium sized software development company consisting of 15 full time employees and 5 outsourced employees working on different projects. Ellipsis also has a general manager, a project manager, an accountant as well as a CEO. Ellipsis offers to provide different kinds of solutions to the clients. It majorly focusses on mobile solutions and web solutions. Apart from those it also offers document management and consultation solutions.

1.2 Evolution of Ellipsis

The company is quite young and was established in January 2012 with 5 employees and was located at Bambalapitiya then. It was moved to Colombo 7. The 4th anniversary of Ellipsis was celebrated during our internship. Ellipsis has performed incredibly well when turn back and see the path it has come just in four years and currently boosting up the journey more with putting more resources and been more innovative.

Ellipsis considers providing a friendly service to the customer is their duty while protecting the privacy of the customer. At present it has severed ties with the clients from Canada, South Africa, Russia, United Kingdom, Australia and Sri Lanka.

1.3 Vision of Ellipsis

Ellipsis has a very clear vision regarding the platform, customers, employees and growth that everything is decided on these basics. “The team work brings the dream work” is motto of Ellipsis and the clients are treated really well. Customers are very important for every business. Ellipsis always belief that its success rely on clients satisfaction.

As a total IT firm in Sri Lanka, Ellipsis is capable to afford its customers almost any kind of IT services. Its highly skilled team in various sectors presents clients with customized solutions that best fit for their business and technology needs. Ellipsis Includes following services: Business Automation, Mobile Applications, Web Applications and E-Commerce Solutions.

1.4 Organizational Structure

On the very first day of presentation, Mrs. Yasanthi has told that Ellipsis is a meritocracy system which provides perfect exposure for any employee working in Ellipsis. This is supported by the Company's very flat and informal structure where everyone is treated equally. There are Software Engineers and QA Engineers working under Ellipsis and outsourced by Commercial Credit PLC.

The basic structure of the organization can be justify using the diagram given below:

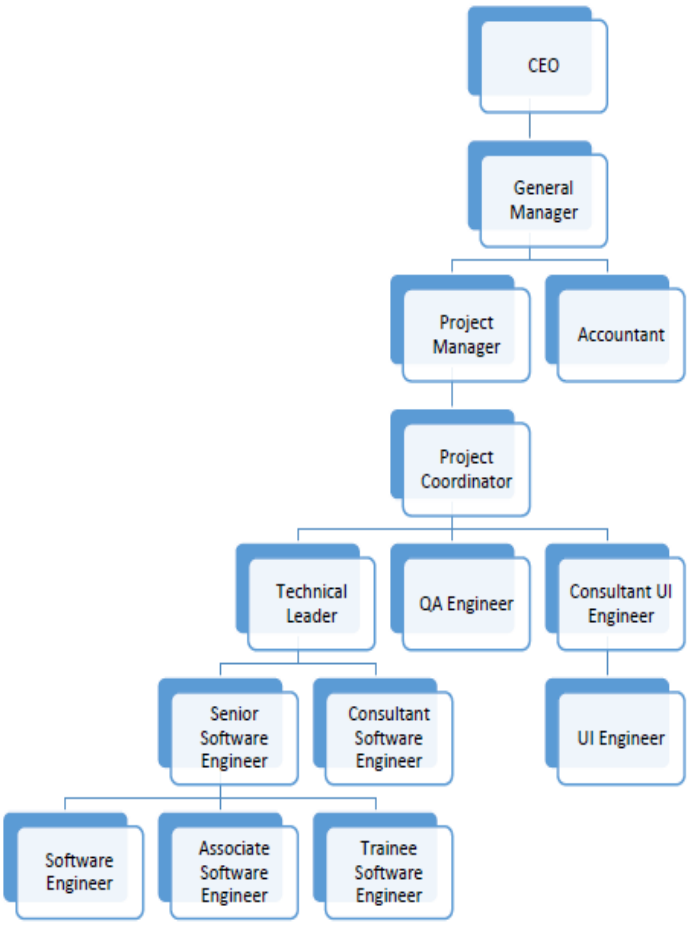

Figure 1.2 Organizational structure of Ellipsis

The sole purpose of keeping this hierarchy was for activities regarding management done by Human Resources Management and had no effect in making a technical decision that even an idea from an intern like me are considered and accepted if it is well supported with facts (this is what I meant as the exposure earlier).

This hierarchy is so helpful in fast decision making at the agile software development that the company has put trust on its employees that they will do the most perfect thing in a situation. Also there is no restriction to talk to anyone and even we could easily go CEO directly and discuss any issue we had. All windows are wide open for people to directly communicate and there was no need to go in a hierarchy.

1.5 SWOT Analysis

1.5.1 Strengths of Ellipsis

The company seem to work quite well and people seem to like their job. This has also to do with the fact that the company leaves much flexibility and responsibility in the hands of the employee. An example of this and a fact that I really like, is that the company is very flexible on time. This means that if you need to do something one day then you can go a bit earlier and just stay a little longer another.

The organization structure and work processes also seem to work quite well. Projects are finished in a timely manner, and the quality of the result is high as well as the satisfaction of the costumers. Ellipsis business model allows it employee to dedicate development resources only where and when they are needed, dramatically reducing overheads and allowing us to apply exceptionally talented individuals to the areas they are most suited too.

The major strength at Ellipsis is its business connections all over the globe. Ellipsis is not a larger company compared to most of the software development companies. However most of the projects received from the world wide clients through the CEO of the company. Mr. Rajitha U. Kuruppumulle is a well-known and experienced software engineer in the software industry. He has an expanded business network and possesses great business skills. The success of Ellipsis lies in the hands of Mr. Rajitha considerably.

They are providing better pay to their employees and also bonus to them which motivate the workforce and they are doing well at work setting. Apart from that they are giving their

employees facilities of Convenience like personal phone along with bill provided by the company too, which is a big deal for motivating the employees.

Dedicated and skillful staff is the next strength of the company. Due to the independent environment possessed by the company, the working environment has become pleasant to be worked and the employees try to give their level best to the company. The company embraces new technologies frequently making the staff more knowledgeable.

Ellipsis trusts the abilities of the workers. Hence workers get opportunities to hold responsibilities. Even the trainee software engineers are entrusted with huge responsibilities which makes them more experienced in the software field. Workers are sometimes allowed to interact with the client in client meetings which cannot be expected from a software development company.

1.5.2 Weaknesses of Ellipsis

There aren't any major weaknesses I have noticed. But as some set of employees are lagging in documenting and quality assurance (employees all around the world has the same issue). I had faced problems during my one of my project, because the section assigned to me wasn't documented well by the relevant QA Engineer. Other than that, the structure and facilities of the office could be improved.

Ellipsis is a middle sized company. When it is compared with larger companies in the field, it has become failed to supply facilities to the employees just like the larger companies do. It has failed to detain the employees for larger time periods as they seek for better facilitated opportunities.

Due to the less experience in the software industry, Ellipsis is a name which is not frequently heard of. Because of this reason clients doubt the capability of the company and most of the projects slip away due to the lack of experience. Clients search for well reputed companies to entrust their needs to be completed.

1.5.3 Opportunities for Improvement

Ellipsis has a good business network. If the projects are completed according to the standards and fro the satisfaction of the customers, it may result in gaining further projects with the client recommendations. And also eventually could extend the business network furthermore.

Ellipsis will eventually will be able to receive more complex projects which will increase the reputation of the company.

When Ellipsis gain further more projects in the future with recommendations, they can increase the staff by recruiting experienced personnel. This is necessary for the company and efficiency of the company will be increased eventually. The company will be able to widen the technologies they used for the projects with the extended staff. Ellipsis will be able to supply the necessary facilities for the employees in the future which will lessen the worker transfers to the large companies.

1.5.4 Threats

Ellipsis is a middle sized company. When comparing with the large scale software companies Ellipsis lacks in facilities. This might result in the inability to keep the employees for a longer time within the company. Employees might try to seek for companies with more facilities and salaries which will eventually result in shortage of experienced staff.

Only one QA Engineer is currently available in the Ellipsis premises. Before delivering the products to the clients, we as a company should guarantee that the product is bug free and ready to be released to the general public. There is a huge chance of missing the bugs and errors when more than one project is to be released at the same time. This might break the client's trust which will affect the Ellipsis reputation.

Currently four projects are going on within the company. But there is a huge risk that it won't always get necessary number of projects which is because Ellipsis is not a large company. This might lower the company earnings and will be a threat to the company.

Government policies are changing day by day so it is always a threat for not only Ellipsis but for any company to survive in such an environment.

Another one is clients' lack of knowledge about IT. Most of the people in Sri Lanka don't know what an IT sector really do, why website and software is important for a business firm. So they can't benefit themselves with the recent technological up gradation of information.

1.6 Suggestions

Ellipsis private Limited is one of the potential IT firm in the IT sector. It is quite difficult to give suggestions on how to improve the condition of Ellipsis. As we know that nothing is perfect, there is always room for improvement, so I have found during my internship that Ellipsis can take the following suggestions.

- General working conditions ought to be improved.
- Should increase the manpower for quick client service
- A whole big office in Sri Lanka (more space, less inter office travelling)
- Better documentations (can always improve)
- More aesthetic facilities
- Keep looking for new things all the time (Ellipsis has the potential to employ more and more people when they come up with several products, services)
- Devise a plan bit earlier for the expected Number of Interns
- Keep up the good work

1.7 Contact Information

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2. TRAINING EXPERIENCE

2.1 Joining the Ellipsis Family

That was actually my second visit to Ellipsis on October 19th, after my Interview. Four of interns from the same department that is Computer Science & Engineering, University of Moratuwa have been chosen to follow the internship at Ellipsis.

I went pretty earlier in a formal suit. Ellipsis aren't big believers of the formal suit of their Officials. The company has an open culture. My batch mates had insisted about the casual suit but it was too late. I had my shopping earlier, which was all about formal suits. Thus, at least for the initial day I went exceptionally formal.

Mrs. Yasanthi Bandara, General Manager of the company, has illustrated the office's physical structure and then conducted the inauguration ceremony. The highlights from her presentation (as far as I could remember) are given below.

Ellipsis is

- a medium size IT firm
- an open source company

Ellipsis has

- almost 4 years of history
- an open, flat culture
- only one office in Sri Lanka

On my first day, I was surprised when I was brought to the Ellipsis. It was a house with an office. At the beginning I definitely had to get used to the idea of working in a house, with all the smalls spaces and the house environment. But after a while I got used to it and felt comfortable. The office premises of Ellipsis is arranged more like to be a home with all the facilities for the staff to work in a free environment, enjoying whatever they are doing.

At the beginning, I noticed that the work and communication was done very fast. Within that

small space, anyone can contact other coworker easily, such that this working environment is so friendly which will give more strength to novice trainee. I also noticed the different communications tools they were working with such as Mail, Facebook and phones.

Overall my introduction with my company went really well. The work fits my education and I felt I could learn a lot. I felt really accepted in the company.

2.2 All set to work

First week of internship was all about introduction to the technologies and languages which are using in our company. Tech Lead Mr. Chameera Senarathna, internship mentor of Ellipsis was conducted few workshops about the technologies and trained us with some dummy projects.

The first thing I was required was to install the Ubuntu on my laptop. Fortunately I already had Ubuntu 15.10 on my machine. I've been using Ubuntu as my primary operating system since 2014 (before 2 years from now). Back then it was truly amazing.

Before I started using Ubuntu I tried out Red Hat, elementary OS and even Debian. In all of them, something didn't work. Usually it was Wi-Fi/Bluetooth, but sometimes it was audio or video. But when I switched to Ubuntu, all of that went away. Ubuntu helped me get past the initial barriers so I could really dive in.

Our company provide our own email ids for communication and Git server access purposes within the first week of training. Then mentor wanted to install particular software, programming languages and some frameworks on my machine.

The major software/Languages/Frameworks installed are,

- Git
- PHP
- Apache2
- Composer
- MySQL

- Netbeans
- Symfony
- phpMyAdmin
- Android
- Firefox and Firebug Plugin

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. A version control system is mostly based around one concept, tracking changes that happen within directories or files.

Advantage of a version control system is that we don't have to keep multiple backup files to manage. Our Mentor (Tech.Lead) was teach us about two main version control software which are use predominantly nowadays, Git and Subversion (SVN) are that two open source version control systems. The key difference between these two systems is that Git is decentralized and we can do practically anything offline, SVN is other way around.

I was already familiar with Git before this internship, but had not used it in a real development workflow that used pull requests. Also, I've been trying to understand the whole concept of Git, this internship made it happen. At the end of this internship I came up with my own general advice for effective software development using Git. Such are,

1. Run diff just before I commit, every time ('git diff')

   Never commit my code changes without giving them a quick review in some sort of diff tool. Actually I always used Ubuntu Terminal to view diff files, it's pretty easy.

2. Read the diffs from other developers too

   Every morning before I start my own coding tasks, use diff to look at all the changes that everybody else checked in the day before. Many of the senior developers I have known make this a habit. When I read the diffs, two good things might happen:

   - The code might get better. Reading the diffs is like an informal code review.

- I might learn something. Maybe one of my team member is using a technique I don't know about. Or maybe reading the diffs simply gives me a deeper understanding of the project I'm working on.

3. Explain my commits completely

   Every version control tool provides a way to include a comment when committing changes to the repository. This comment is important. If we consistently use good comments when we commit, our repository's history contains not only every change we have ever made, but it also contains an explanation of why those changes happened. These kinds of records can be invaluable later as we forget things

Our company using GitBlit [2] for their Git server purposes, it's a free and open source software. As an intern I can access our company Git repository server through the mail id they provided to me. In the first week of our internship, Tech Lead was created a dummy repository in the Git server and allowed us to practice with mandatory Git commands.

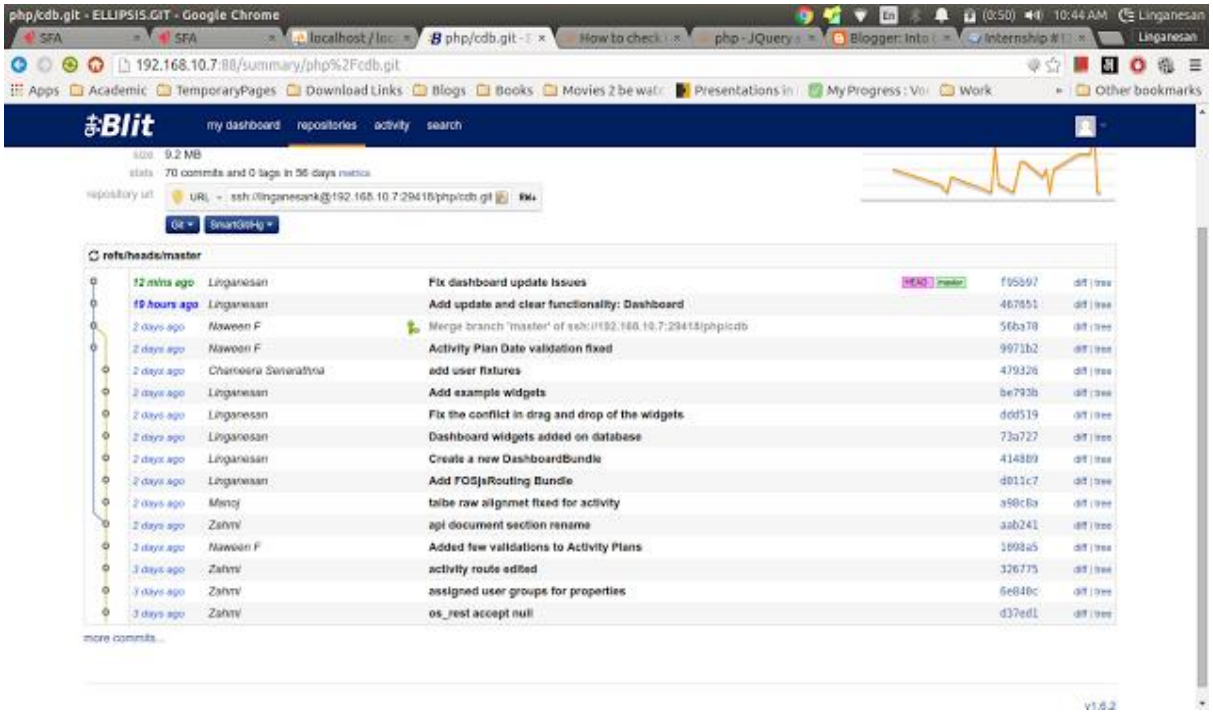

Figure 2.1 Ellipsis company Git server with GitBlit software

LAMP is an open source Web development platform that uses Linux as the operating system, Apache as the Web server, MySQL as the relational database management system and PHP as the object-oriented scripting language. So I installed Apache, MySQL and PHP 5 in my

machine. The major language used in most of the projects of our company is PHP, because most of them are web projects. It was my first time to work with PHP, it was difficult at the beginning because I did not know anything about this language.

PHP is a widely used, general-purpose scripting language that was originally designed for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document. I had some difficulties at the beginning because of I did not really know the PHP language, and its association with MySQL, but step by step I learnt how to find the information I wanted and that would be necessary for me. I improved my knowledge in PHP/MySQL which will help in my future for my studies or when I will work into companies.

As a general-purpose programming language, PHP code is processed by an interpreter application in command-line mode performing desired operating system operations and producing program output on its standard output channel. It may also function as a graphical application. PHP is available as a processor for most modern web servers and as standalone interpreter on most operating systems and computing platforms.

phpMyAdmin is one of the most famous tools for managing the MySQL database. Also it is a free web software to work with MySQL on the web, it provides a convenient visual front end to the MySQL capabilities. Through this software I can create, alter, drop, delete, import and export MySQL database tables. I can run MySQL queries and execute other database management commands. Before working with phpMyAdmin we need to have LAMP installed on our machine, So that I have already installed LAMP in my machine.

Next software I was intended to install is Netbeans, because in our company all the web developers are using Netbeans as their IDE. I used Netbeans for my java projects in university academics, so it was not too hard to get into it. For first few months of internship I had been used Netbeans, after that we get an offer to use PHPStorm from our department (Computer science and engineering) as a student candidate. So I immigrated from Netbeans to PHPStorm. I found PHPStorm to work a little faster. Overall it feels much better. Also according to the internet surveys, PHPStorm is the best IDE for PHP.

My mentor wanted me to know the basics for Symfony development. The following Site [3]

is one of his recommendations. I will explain this about more in the next section. So First week of internship went with get to know about the company and the employees. Also I had been practice with a Symfony demo project.

2.3 The Tasks

From the beginning to the end of this internship I've assigned to work on four different projects, unfortunately all of them were web projects. But that is not too bad because each of them was focused different technologies and requirements.

Unfortunately, the confidentiality required by the company for the projects which are in development phase does not allow reporting further details about the specific project. It is possible to affirm, however, that all the theoretical description and explanation in this report was used for the execution of the activities. So I have tried to explain the projects without mentioning their names and clients in below sections.

2.3.1 Project: Sales Force Application

In the second week of my industrial training, I had assigned to work on a web application project which is a Sales force application and it is the first product of Ellipsis (pvt) Ltd. which is under development now. The project is developing through Symfony framework.

2.3.1.2 Project Overview

As I mentioned above it is a Sales Force application and it helps in securing and managing sales data such as events, notes, calendars, contacts, meeting, cases, prospective clients etc. This was about the standard Customer relationship management (CRM) features which are easy to use most innovative and highly automated system, which makes users crucial data to be managed in the most effective way.

This data management on Sales Force called practices in lead management, account management, contracts management, Users sales pipeline and forecasting in the most effective tracking, customer support management.

2.3.1.2 Assigned Task

I had assigned to develop a dashboard for this web application. This web application contains a dashboard to display information to the user. Dynamic dashboards help users to

view their data and report analytics in one place.

The main task was the dashboard widgets should not be hardcoded with the web page, it means for each user group has their own custom widgets based on their hierarchy level. So each user can add or remove his/her widgets according to the need and more importantly widgets could be drag & drop in a grid stack view.

At this point, to be honest I had no better understandings regarding the assigned task because I wasn't really into Symfony that time. I was bit familiar with the PHP and JavaScript. Thus I sensed the amount of the workload. Anyhow, I felt quite happy about the newer direction so I could learn a lot.

This is the first time in my life I was using frameworks. At first, I was most likely notice how slow I was, because I didn't know the framework and spend much time reading docs and tutorials. But after a few days, I get understand the framework structure and patterns better.

List of Popular PHP Frameworks:

- Zend Framework
- Symfony
- Cake PHP
- Code Igniter
- Laravel
- Yii

I had the opportunity to work with Symfony and Yii frameworks during my internship. More details about that will be given in next sections. There are pretty good reasons to use the Frameworks:

- Code and file organization is extremely easy and also Suitable for teamwork
- Countless numbers of tools and libraries
- Form validation
- Database abstraction

- Session and Cookie handling
- Email, Calendar and pagination and much more
- MVC (Model View Controller) Architecture
- Less code which ultimately speeds up your development
- Security – PHP has many input and output filtering functions which can add extra security layer to protect our website against certain attacks
- PHP frameworks have great active community support. We can find the accurate solution of any query quickly

Frameworks help save time. PHP frameworks are really useful. They make life much quicker, also help with security. Any framework of repute is making heavy use of design patterns. I can find a lot of getting started tutorials for most frameworks, but the thing that will help me the most is understanding why the framework is designed the way it is. The reason is almost certainly design patterns.

2.3.1.3 The MVC design pattern

Since I was new to the whole context I devised a plan to surf the Internet and gain information. Due to my inexperience and all this wasn't been a great start with Symfony. The concept of Model View Controller (MVC) was pretty much newer and unclear for me, thus mapping knowledge I gained from the existing few Symfony sources with my requirements was harder.

I had a very unclear knowledge gain there and I would admit my strategy I had devised that time to approach a whole new context wasn't great at all. Model View Controller (MVC) is a design pattern often used where there is a need to be able to maintain multiple views of the same data. The main purpose of MVC is to have a clean separation of objects into three categories: models for maintaining data, views for displaying them, and controllers for handling events.

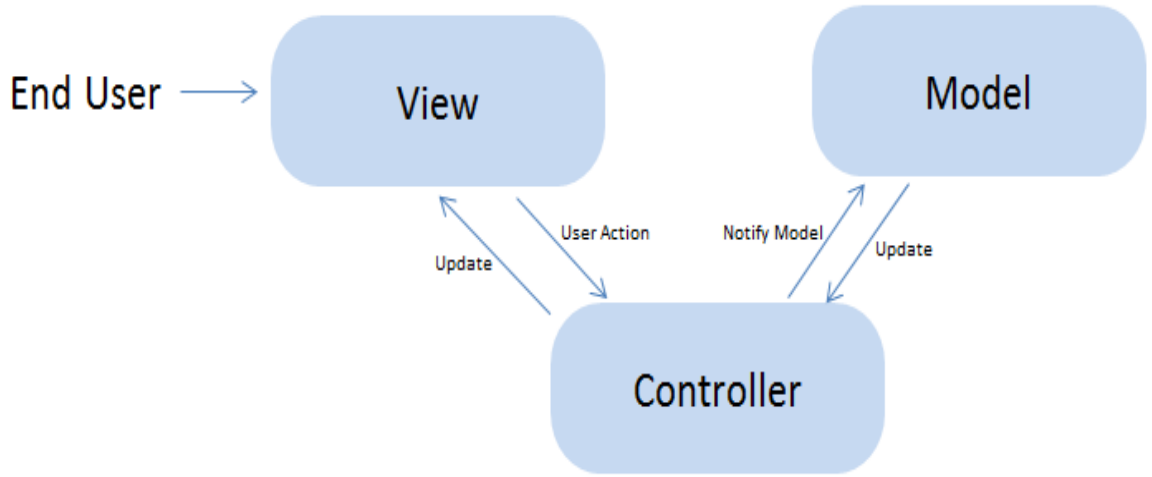

Figure 2.2 MVC architectural diagram

The main advantage of such a pattern is that, multiple views and controllers can interface with the same model. Even new types of views and controllers that never existed before can interface with a model without forcing a change in the model design. The overall result is better clearness and flexibility.

Model - A model is an object representing data. The model manages the behavior and data of the application domain, responds to requests for information about its state and responds to instructions to change state. The system itself maintains links between model and views and notifies the views when the model changes state. A model can have more than one view.

View -The view is what the user sees. It's an interface with which the user interacts. The first purpose of a view is to present the results returned by the model. The view renders the contents of a model. It accesses data through the model and specifies how that data should be presented. Then, the view is also in charge of receiving all the user's actions (clicks, buttons or forms). The different events are sent to the controller. The view is responsible for mapping graphics onto a device. A view typically has a one to one correspondence with a display surface and knows how to render it. Of course, in this case, the view is built in HTML, but any other presentation "language" is suitable.

Controller - The controller receives events from the user, triggers the actions to perform and synchronizes the view and the model. In other words, it's responsible for mapping user's action to application response. The controller translates interactions into actions to be performed by the model. In most GUIs, those interactions are for example button clicks or

menu selections. More precisely, in our case (Web application), they appear as HTTP GET and POST requests.

During my development of this Sales force application, I had to handle the three aspects of the MVC pattern in order to manage the navigation through the different views of the component. In fact, first I create the models I need. Then I take care of the views (forms, listings, form elements and listing elements), and find a suitable layout.

2.3.1.4 Symfony Framework

Symfony is developed in PHP and dedicated to building web applications with the same language. Symfony is a MVC based framework and it inherits a lot of interesting and powerful features from the most popular and successful web frameworks out there. Symfony organizes code in a project structure and puts the project files into a standard tree structure. All web projects generally share the same types of contents, such as the following:

- A database, such as MySQL
- Static files (HTML, images, JavaScript files, CSS style sheets)
- Files uploaded by the site users and administrators
- PHP classes and libraries
- Third-party libraries
- Log files (traces written by the application and/or the server)
- Configuration files

Symfony provides a standard file tree structure to organize all these contents in a logical way, consistent with the architecture choices (MVC pattern and project/application/module grouping). This is the tree structure that is automatically created when initializing every project, application, or module. We can customize it completely, to reorganize the files and directories at our convenience or to match our client's requirements. Symfony comes with a visual server configuration tester to help make sure our Web server and PHP are correctly configured to use Symfony.

Databases are relational. PHP and Symfony are object-oriented. In order to access the database in an object-oriented way, an interface translating the object logic to the relational

logic is required. This interface is called an object-relational mapping (ORM). An ORM is made up of objects that give access to data and keep business rules within themselves. Symfony supports the two most popular open source ORMs in PHP: Propel and Doctrine. Symfony integrates both of them seamlessly. When creating a new Symfony project, it's a matter of choice to use Propel or Doctrine. In this project we used Doctrine, which is the most popular one among PHP developers.

I like to work on Symfony framework more than any other PHP frameworks because of its huge and friendly community that will answer any of my questions and provide me with the base of applicable resources, also dealing with Forms & Validation really easy with Symfony.

The ways I organized myself to learn about Symfony are given below:

- Studied some existing Symfony projects, There are lot of them found in GitHub. Also Symfony provides a demo project called Symfony-demo application.

  This project is a fully-functional Symfony application developed as a learning resource. It is a reference application created to show how to develop Symfony applications following the recommended best practices.

- Clone few open source Symfony dashboard bundles from GitHub and study their code base.

- Get the help from Senior PHP developers of Ellipsis. Seriously, they were ever never hesitate to clear my doubts. I'm always grateful to them.

2.3.1.5 Implementation Process

First I tried to use some existing Symfony dashboard bundles which are available on GitHub, but that was not worked out. So I created my own new bundle called 'DashboardBundle' in the Symfony project. In Symfony, bundle is an independent reusable component. A bundle is simply a structured set of files within a directory that implement single feature.

Here, I have summarized the major steps which I followed to implement my task successfully.

- Implement drag & drop grid-stack dashboard view

  For this I used gridstack.js [4], which is a jquery plugin for widget layout. It allows

me to build drag and drop responsive layouts.

- Store widgets details in database

  I created a new database table and named it as ‘dashboard_widgets’. Purpose of that table was to store the widgets placement coordinates in the grid stack (X and Y) and also store the user id, as the foreign key to identify the user of any particular widget. The fields of the table given below.

  Table: dashboard_widgets

  - id
  - x
  - y
  - user_id
  - widget_name

- Create new widgets(manually)

  To create new widget, create service and tag it with "SFA_dashboard.widget" and then that newly created widget PHP class needs to implement “SFA\ DashboardBundle\ Widget\ WidgetTypeInterface”. Any developer can inject in his widget whatever the project needs in the future.

- Each user get a separate dashboard view

  The Dashboard bundle allows to store user's widgets instances in databases, so every logged user can use different widgets in his/her dashboard.

  To get users widgets just use in my dashboard controller:

```
$this->get(‘sfa_dashboard.widget_provider') ->getMyWidgets();
```

  In twig, to render widgets I can use

```
{% for widget in widgets %}
   {{ renderWidget(widget) }}
{% endfor %}
```

and '{{ renderWidgetSelector() }}' to render list of available widgets in the twig.

Both renderWidget() and renderWidgetSelector() functions were implemented in the twig extension class of Dashboard bundle.

- Automated place-able widgets in dashboard without collision, this was implemented by JavaScript using the gridstack.js.

- Implemented a navigation bar in the dashboard view. The buttons on navigation bar are:

  Available Widgets – Show available widgets for logged in user in a dropdown view when user click this button

  Edit – Can able to drag and drop widgets on the dashboard after click this button. Otherwise they should be locked.

  Update – Save updated widget coordinates in database when user click this button

  Clear – Remove all the widget from the dashboard

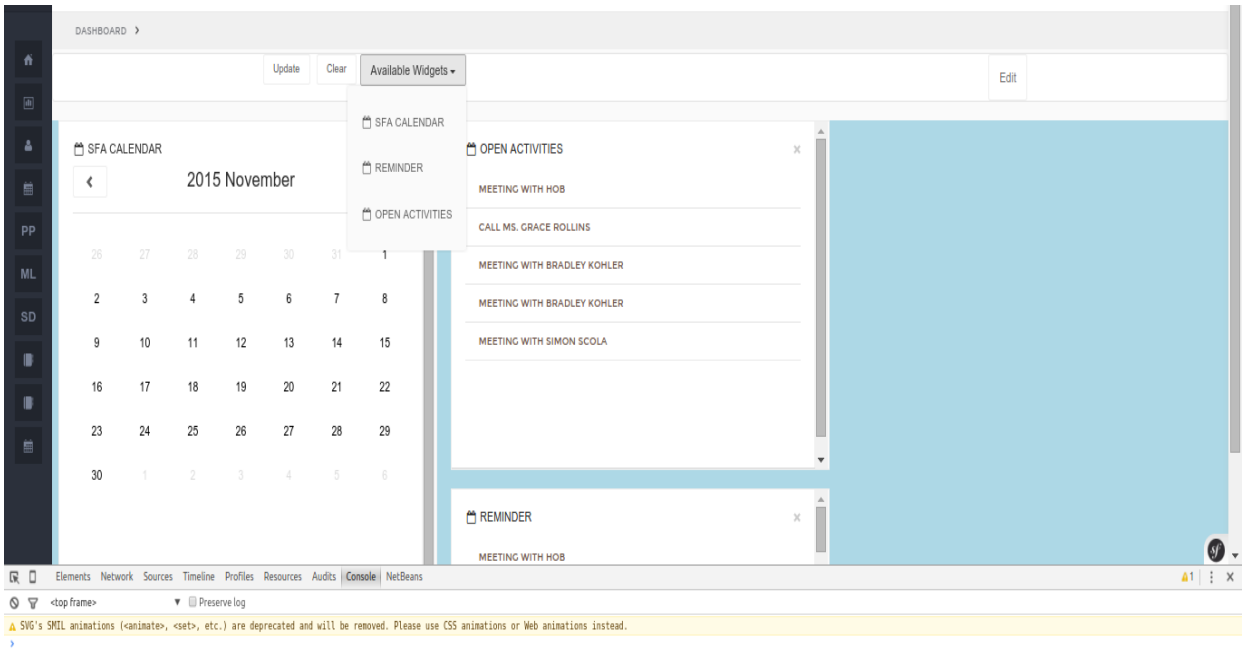

Figure 2.3 Dashboard with navigation bar

Here I get the positions of each widgets as a JSON array. JSON stands for ‘JavaScript Object Notation”. JSON is an open, text based data exchange format, like XML. It’s human readable, platform independent and has a wide availability of implementations for AJAX applications, JSON is faster and easier than XML.

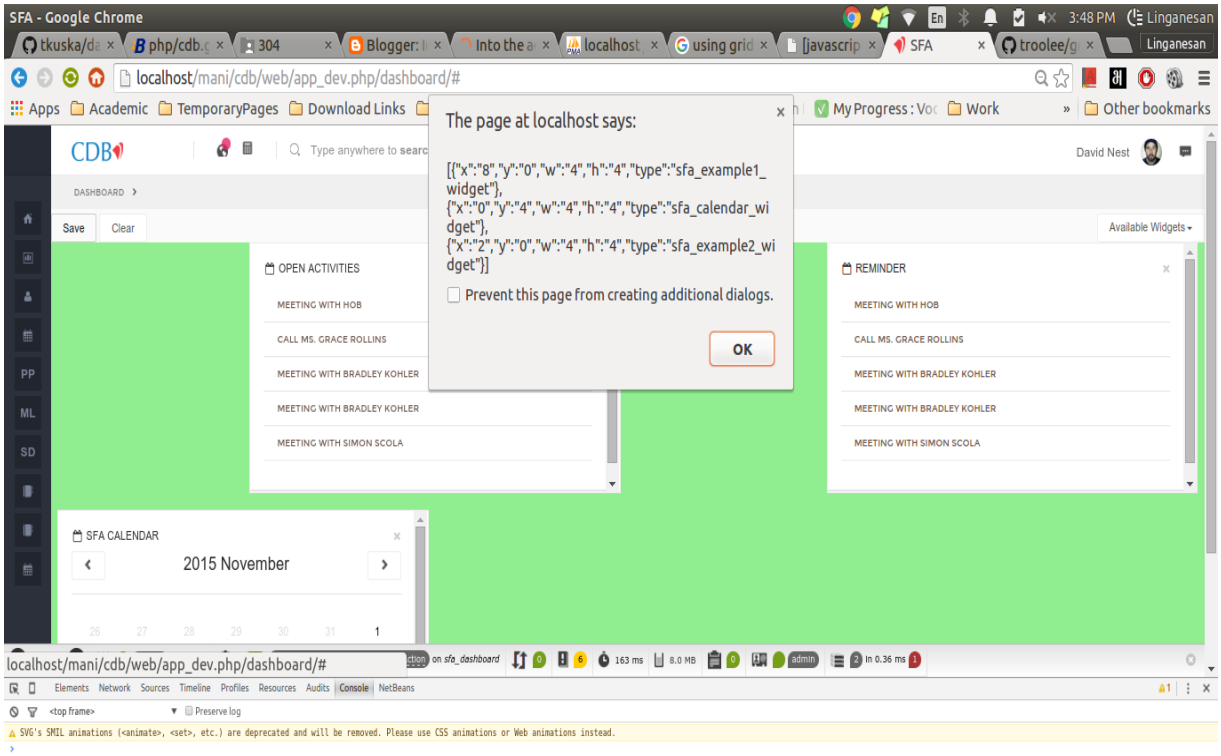

Figure 2.4 JSON object structure of widget placements

Add and Update widgets functionality of the project has been programmed in JavaScript, including jQuery and AJAX. jQuery is a fast and small JavaScript library that offers many useful features that make event handling among other things much simpler with an easy-to-use API that works across a multitude of browsers.

AJAX, though not another programming language or library is a way of using existing standards. It is the art of exchanging data with a server and updating parts of a web page, without the need to reload the entire web page.

As AJAX was already used to dynamically load data for the dashboard widgets position, I have found certain AJAX event handlers in jQuery to be useful for this application. I used the jQuery.ajax() handler which performs an asynchronous HTTP (ajax) request. The request is sent to the translation library leading to the creation of a JSON object upon success.

Another major step would be to save the widgets position changes on the database by clicking on the ‘Update’ button. What happens is the following:

- Input values are collected and stored in arrays
- A new JSON object is created
- Whenever the user changes a widget position, it is stored locally inside a JSON object
- Display new widgets positions on reload

Optionally, the user should be able to reset all widgets in their original state. That is made possible by adding another button called ‘Default’, which resets the widget coordinated into the default positions.

To be honest, the assigned task was successfully finished. The developers who are collaborating in this project really appreciated my work and it gives me a great confidence.

2.3.1.6 What I Learnt

A quick capture of what I have learned during this project are listed below:

- Sales Force is an emerging field and I got some insight into a how a new field looks like when in the initial stage and what are the various things which need to be done initially like requirement analysis, survey of existing solutions etc.
- Get to know about Symfony framework
- Basic understanding of PHP
- Committing (Git), best practices of version control management
- IDE fluency, Netbeans and FireFox developer tool, Using the keyboard shortcuts efficiency
- Understanding of OOP concepts in PHP and Symfony framework

2.3.2 Project: Online Examination site

2.3.2.1 Project Overview

I have assigned to fix bugs in an earlier web project of Ellipsis. It was an online examination web site for a private institute. Also it was developed for a Sri Lankan client and PHP with Yii framework was used for implementation. It allows its users to engage in practice examinations which are similar to CIMA examinations. It consists with an exam engine to complete exams in different levels – strategic, operational and management.

2.3.2.2 Assigned Task

Quality Assurance (QA) person of the company elaborated the bugs in the project and showed a demonstration. There were three bug issues in that project, assigned to me to fix. I cloned that project from SVN server and build it in my machine. Gone through the code and had a rough view of project. The code base was really complex and massive amount of JavaScript was used in development.

This task was fully focused debugging rather than implement a new feature or add some new values to that project.

2.3.2.3 Yii Framework

As I mentioned above it was developed through Yii framework. Yii framework is another popular framework in the PHP. Like most PHP frameworks, Yii is an MVC framework. Error handling on the Yii framework is one of the main reason why developers prefer this framework. Identifying and correcting errors is easy.

I had an opportunity to work on new framework rather than Symfony. So I could compare those frameworks and have rough conclusion about them. Yii is cool and easier to learn than Symfony. They both are open source products with code available on GitHub. However, in Yii applications are created according to MVC while in Symfony only model and controller part of the pattern are used. Both Yii and Symfony use namespaces that allow developers to isolate components, widgets and models from each other. It was a long-expected feature for Yii users since when the structure of the product is organized this way, it's much easier to write code.

2.3.2.4 Bug Fixing Process

Those bugs were caused by JavaScript issues, it was my first time I dealing with JavaScript and I able fixed that bugs within two weeks and submitted for further tests. While QA person came with another new issue in that project. It was bit tricky, I didn't get a clue to find what was wrong there in that particular issue. So I needed help from a developer who worked on that project before, so we worked together on that issue and fixed it.

But anyhow with debugging tools present in Firefox I can monitor for any console errors being logged as and when I interact with UI or widget objects. Interacting with objects and widgets directly via chrome console is very easy too. The JavaScript Debugger enables me to step through JavaScript code and examine or modify its state to help track down bugs.

Especially Firebug allows me to set breakpoints, which tell the debugger to pause execution when it reaches a specific line. While execution is pause, I can see the value of any variable and inspect objects while time is frozen.

2.3.2.5 What I Learnt

I have never worked with JavaScript before. I have learned that JavaScript is a bit dirty. With this I mean, that it is hard to write good JavaScript code and it is very hard to debug it. JavaScript is supposed to work in all major web browsers but it turns out that the implementation for each browser is a bit different.

- Familiarity with browser testing and debugging
- Basic understanding of JavaScript
- Learned about Yii framework
- Learned how to use browser web tools fluently

2.3.3 Project: Online Shopping Cart Solution

2.3.3.1 Project Overview

It is a shopping cart web solution and it’s developing through OpenCart. OpenCart is a free open source ecommerce platform for online merchants.

2.3.3.2 Assigned Task(s)

We four interns assigned to this project. Our company UI designer designed the web pages in a rough manner in a wireframe designer and we implemented that designs in this shopping cart solution through OpenCart. Also fix some issues happened in the backend of the application.

2.3.3.3 Implementation Process

In the beginning I worked on front-end development. Fixing some JavaScript bugs on drop-down menus and change CSS styles. First time in my life, I worked as a frontend developer. Front end programming definitely isn't any easier than backend programming, it's just a different problem set. With backend, sure, I have to be able to scale and do things efficiently and maybe there's some complex infrastructure pieces or whatever. Front end programming has its own share of problems. Mastering HTML & CSS is no walk in the park, not to mention having to keep up with ever changing standards. CSS, or cascading style sheets, is “the language for describing the presentation of Web pages, including colors, layout, and fonts. The separation of HTML from CSS makes it easier to maintain sites.

I’ve worked on JavaScript issues appeared in front-end of this project. Such as dropdown menu issues and responsive issues. I’ve worked on responsive issues of the shopping cart solution. In simple terms, responsive web design is the methodology that recommends the design and implementation of a website or web application that responds to user behavior and environment base on the screen size orientation and operation system of their device.

Responsive web design is an emerging trend that involves designing websites and application for optimal view across multiple devices and screen sizes using a single code base. As the user switches from one device to another, this shopping website automatically adapts to accommodate for the resolution.

Once we have the UI design and content outlined, we will move into production. Your project manager creates an account with our project tracking system, which provides frequent development updates from the team themselves, and will produce weekly development summaries of progress. Once the application has reached an agreed stage of completion, we will publish it on client web servers, in a temporary folder. This gives client a chance to check functionality and content.

Generally, I have learned that developing web applications for different web browsers can be a pain. Since things that I expect to work the same way just does not and I have to find alternative solutions which do not improve the usability. Also developing interactive Web Interfaces is hard. Also I have worked on back-end for generating reports about sales categorized by country-wise.

2.3.3.4 OpenCart

Learning OpenCart and get in to that was quite easy to me because I already familiar with Symfony and Yii MVC frameworks. Opencart uses a pseudo MVC architecture. It is PHP-based, using a MySQL database and HTML components. For creating web pages, OpenCart has special templates files which are end with tpl extensions. We can customize frontend and backend of OpenCart site for our needs. Opencart is easy to use and very user friendly compare to Symfony and Yii. OpenCart provides a professional and reliable foundation from which to build a successful online store.

2.3.3.5 What I Learnt

A quick capture of what I have learned during this project are listed below:

- Understanding the OpenCart Framework
- Improved HTML and CSS skills
- Understanding of Frontend development concepts

2.3.4 Project: E-money Transaction Merchant Web Portal

2.3.4.1 Project Overview

Merchant web portal is a front end web application for user merchants and master merchant to handle the transactions and their accounts. The merchants associated with Client, will be able use this web portal to view transactions they have performed using the terminal devices, and also to perform, refund, reverse and cancel transactions.

The confidentiality required by the company for this project which is in development phase does not allow reporting further details about the specific project. I tried to describe the project in more generic sense.

The system will be capable of manipulating the rates and amounts relevant to transactions and will also generate the required reports and also provides mechanisms to handle the merchant terminal accounts. From the web portal, Client admin can add and manage the roles assigned to the web portal users. Roles determine the areas of the portal each user can access.

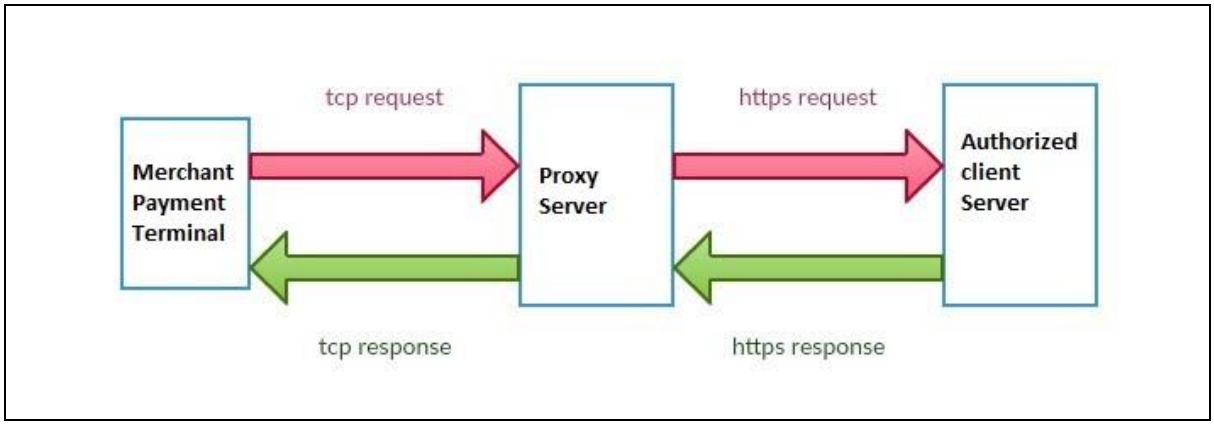

Figure 2.5 Architectural diagram of the project

- Payment Terminal - It is a device which interfaces with payment cards and to make electronic fund transfers.
- Proxy server - Which holds the merchant web portal application we developed here.
- Authorized client server - Using https protocol to request/response transactions with the merchant system.

System maintains a record for each transaction proceeds by the merchants. Only credential user can access a transaction record to view detailed information. This merchant web portal provides means of performing the transactions for the merchants instead of using the terminal devices. The master merchant can use this portal to manage the merchants. The system consists of the front-end for the merchants and the master merchant, and the back-end which interacts with the persistence layer.

2.3.4.2 Assigned Task(s)

This was my fourth and last project which I was assigned to work during my internship in Ellipsis. It's developing through Symfony framework which I already familiar with. I worked on this project for more than two months. When compared to other projects this one is my favorite, because I learnt a lot from this project rather than others.

At the beginning, it took almost one week to understand the core concepts and code base the project because its requirements were bit confusing to me first. When I was joining to that project, it was already on finished state for its first phase release and the project was moving to its second phase with new requirements.

I have assigned to work on various tasks of this project. Here, I have summarized the major of them according to their work load.

- Quality assurance testing for first phase release
- Fix the hotfixes of first phase release
- Develop a user manual for this web portal application
- Second phase requirement gathering and URS documentation
- Implement a PDF exporter module for the reports which are generate by the application
- Implement files handling feature, Merchant portal user could be able upload multiple files to server and also able to handle the files.
- Change the UI theme of the project
- Implement a Finance module to the project from the scratch
- Implement other new requirements which are on the second phase of this project
- Fix the hotfixes for the second phase release

2.3.4.4 Implementation Process

First task I assigned do on this project was quality assurance testing for the first phase release. Our company tech lead assigned this testing job to me, because quality analyst who worked here before was left the company at that time and there was a need to test this project before its first phase release.

Testing web applications and web sites is not a small effort. Quality is a major challenge for all complex systems, it's mainly focused on whether the software correctly performs the task that what user intended to do.

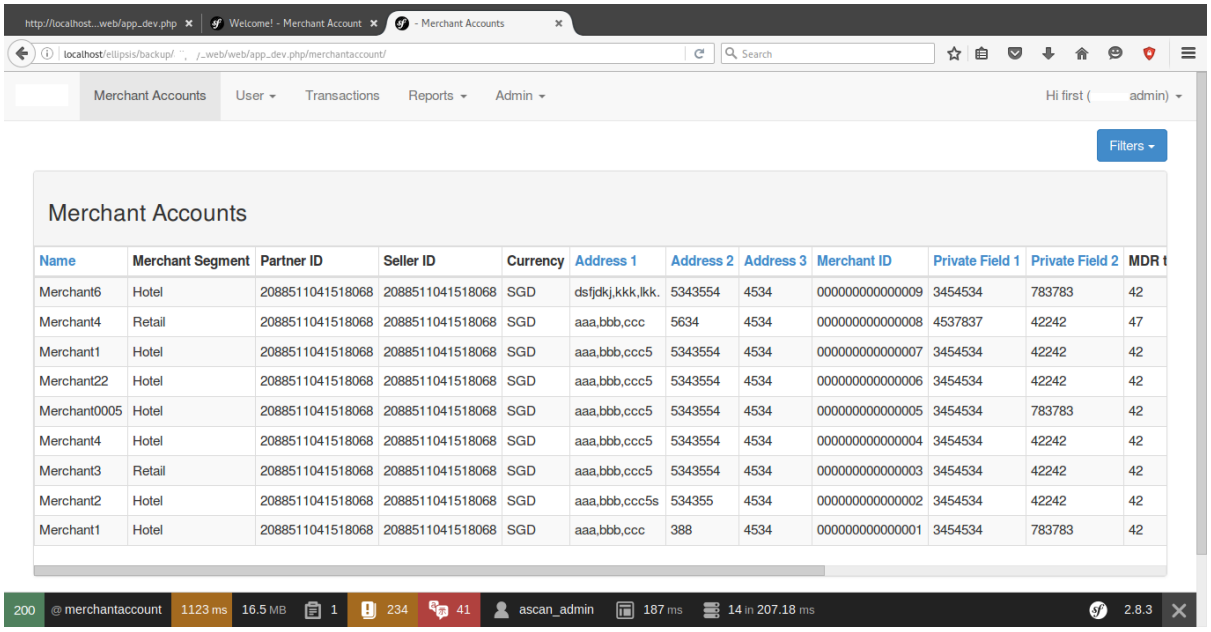

Figure 2.6 UI theme for first phase release of the Merchant portal application

I have tested the web portal application for three days, checked all the forms with possible inputs. I have checked each components of the application carefully and noted down the issues appeared while testing. Finally submitted a detail bug report to the team head of this project and illustrated the issues for more detail.

As I mentioned before, the project was on a tight deadline to release its first phase. So the development team need one more person to reduce their burden, that's why they recruited me into the team. Also I already had some knowledge in Symfony framework and it was helped me to get into the project easily. As a team we worked really fast and hard. I worked on small

bug fixes of the project which were found on my quality testing before. I worked here on Saturdays to fix bugs and other changes.

I created new Git branches for hotfixes. When I fixed the bugs then I merged those hotfixes branches with the release branch. First I had some difficulties in merging two Git branches together and resolve the conflicts between them. I get the advice from Mr. Chameera Senarathna, Tech Lead of our company, also he conducted a tech talk on Git best practices for all of our team members. The first phase of this project was successfully finished at the mid of February and hand over to the clients before the deadline.

Next task assigned to me was gathering the user requirements and develop a User Requirements Specification (URS) documentation for the second phase. Also another intern was added with me to make this URS documentation in a collaborate manner.

The purpose of URS document is to provide a detailed description of the functionalities that will be offered in this Merchant Portal application. The document should be cover each of the application's intended features, as well as offer a preliminary glimpse of the technologies that will be used to develop the application and also its main User Interfaces (UI). Also the URS should be cover hardware, software, and various other technical dependencies and this document is intended for all individuals participating in and/or supervising the development of the merchant portal.

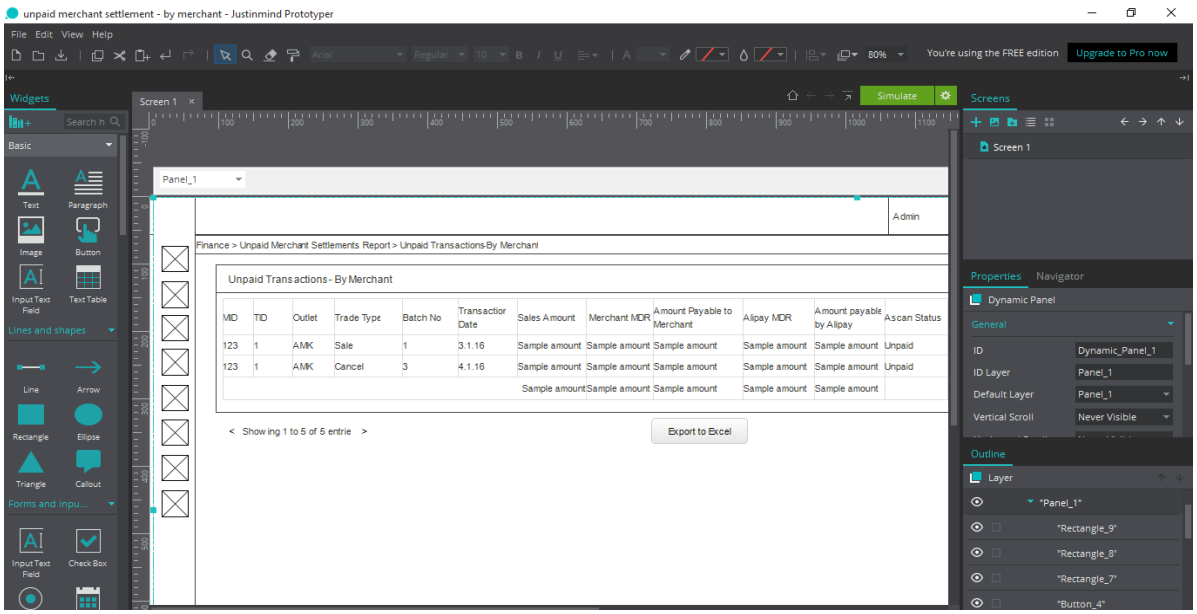

Figure 2.7 Use case prototype designing using JustInMind software

First we discussed about the mandatory use cases of the second phase and started to design use case prototypes in a wireframe designer. We shared the work load of use cases between us and drew the each prototype in a wireframe designer called 'JustInMind'. I and that other intern were spent a whole week in designing the use cases and writing the documentation for this URS. Finally we finished the URS and submit it to the project coordinator for further analysis. The user requirement document for the second phase of web portal was sent to the clients and get the approval to start up the second phase. There were some minor changes happened in URS documentation according to the clients specifications.

As a development team, we share the work of second phase requirements among us. We only had another one month period to release the phase of this project, so we had a tight schedule here.

My first task in the second phase was implement a PDF exporter for the reports which are generated the web portal application. Here I used a library called TCPDF. TCPDF is an open source PHP library for generating PDF documents.

I've added WhiteOctoberTCPDFBundle [5] in our Symfony project using composer in the terminal and added the WhiteOctober namespace in Symfony project autoloader class. After enabled the bundle in the kernel I can obtain TCPDF service and then create new TCPDF object via that service.

Another big task I faced in second phase requirement was handling the files in the web portal server. In here user can upload multiple files and he/she could be able to view/download/delete them after that. Also we need to download files from another server and list down them in the web portal application by the date they downloaded. PHP String manipulation was used to identify the type of the file name and the date it was created.

In the second phase, we added a new attractive UI theme to the project. So I have worked on refining and adapting that theme to the frontend to enhance the usability of the web portal application.

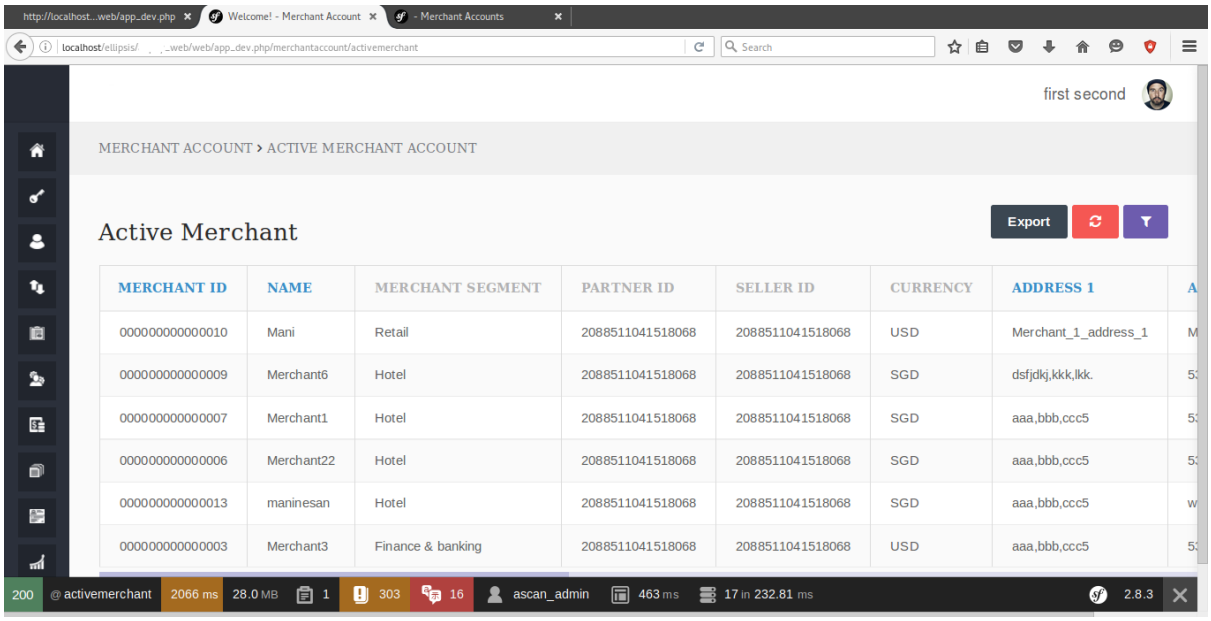

Figure 2.8 New look of merchant portal for its second phase

When we was heading ahead to the deadline, project coordinator arranged a standup scrum meetings each and every day. In those meetings we discussed about the current status of the project and what are the things we need to implement more? Each member of the development team was explain the tasks what he/she did yesterday and what he/she plant to do today. The best part of those scrum meetings was I could share my work with others and also could able to get proper guidance from senior developers.

I got the chance to participate in a few client meetings which were held in the office premises. The clients were in Singapore and we contact them through Skype.

2.3.4.5 What I Learnt

I studied the best practices in Symfony [6], because Mr. Sahan Jayawardana, team leader of this project insisted each team member to follow the common developer standards of Symfony, so that others can be able understand my code easily.

A quick capture of what I have learned during this project are listed below:

- Improved the knowledge on Symfony and PHP
- Writing Test Cases, best practices

- Learned about URS documentation and prototype designing
- Testing documentation, best practices
- I gained new knowledge in the area of Databases and Distributed Databases, the various issues involved and mechanisms in this system. I also learnt that how database products function and what are the various issues one need to be aware of while looking for Data Management solutions.

2.4 The Tech-Talks

In the end of 2015, Mrs. Yasanthi Bandara, General Manager of the company has required all the senior developers to present weekly tech talks on what they have done and learned at Ellipsis. So our senior developers organized some tech talks on Wednesday in each week, more than five talks happened while I was working there. They were on various interesting topics and really helpful to understand future tech fields and new innovations.

Actually most of them were considered as workshops instead of tech talks. As an intern I always liked to work on the demos which were happened in those workshops, each of them contained some sort of new information or technologies to me.

Most of them were focused on high-level, general topics that apply to everyone, of course I learnt a lot from them. Here I summarized the most interesting workshops/tech talks and the knowledge I gained from them.

2.4.1 Test Driven Development

This workshop was conducted by our internship mentor and Technical Mr. Chameera Senarathna. Unit testing is the practice to test only one single class. For dynamic languages like PHP, it is good for several reasons. When we write tests we think of how we are going to use this method in an early stage and by that we can catch bugs or see design flaws very early in our project development.

When we have our code covered by unit tests and we start making changes, adding features or refactoring our code, when we break something from the old code, the unit tests will tell us right away. Like that, we can be sure that all the new functionality is not breaking the old one (and bugs like that can show up later in time and can be very hard to find) and our code is in

stable state. PHPUnit [7] is a programmer oriented testing framework for PHP. PHPUnit organizes tests into cases; basically a class whose public methods are singular independent tests. In the workshop we practiced the PHPUnit using this demo [8].

2.4.1 Design patterns

This workshop was conducted by Mr. Sameera, Senior developer of our company. There are many ways to implement the code and project for our applications, but it is usually a good idea to follow common patterns, because it will make our code easier to manage and easier for others to understand. So those general repeatable solutions to a commonly occurring problem in Software design are called design pattern. I was already familiar with Model View Controller (MVC) design pattern which I mention in above section.

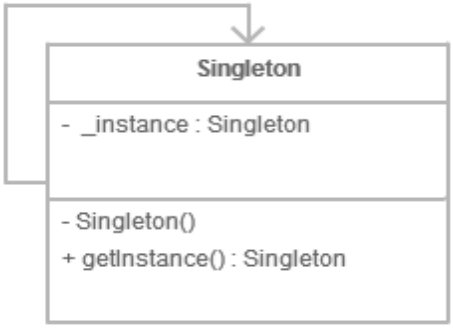

Figure 2.9 Singleton class UML diagram

As a practice, we were implemented the singleton design pattern. Actually there was no language constraint to implement singleton design pattern concept, so I used python for this purpose, because I'm a python enthusiast. When designing web applications, it often makes sense conceptually and architecturally to allow access to one and only one instance of a particular class. The singleton enables us to do this.

2.4.1 Key Concepts behind an Object Relational Mapping (ORM)

This workshop was conducted by Mr. Sahan Jayawardana, Senior developer of Ellipsis. It was primarily focusing on how association mapping is implemented in an ORM. Presenter Sahan used Doctrine [9] as an example, but he tried to be as generic as possible. We did a demo project on Symfony to understand how ORM works.

2.4.1 iOS Development

This workshop was conducted by Mr. Kasun, iOS developer of Ellipsis. Apple has been a leading industry in the mobile world for years with its iPhone and iPad series. Programs created for iPhone are written in objective-C. This my first time to get know about iOS development.

2.4.1 Mobile Application Development

This workshop was conducted by Mr. Zhami. Mainly there are three options to develop mobile apps:

- Native apps - A native app is an app written to a specific platform like iOS or Android, where the app is written in the language used for development on that platform (Objective-C and Java in this case). When we write native, we get access to all the hardware features exposed by the native code APIs, which is typically most of the functionality of the device, definitely more than a web app.

- HTML 5 web apps - An HTML5 app is essentially a website with JavaScript code written to allow the app to perform dynamically. It works interactively to make it feel like an "app", but it is running in a web browser, and is essentially a website, which (since it looks like your focus is mobile) will support multiple viewports or screen sizes so that it works well on mobile.

- Hybrid apps - This apps are developed in HTML/CSS/JavaScript (like a web app) and wrapped in a container. This container provides web app the ability to use native features of a platform. Think of it as a bridge that connects bests of web app and native app. Like native app, it can use all the native features and is fast too. And it's not as expensive as native.

He explained about these different strategies using the previous or ongoing projects which are developed by our company. It was well prepared presentation compare to other ones.

2.4.1 Git Best Practices

This workshop was conducted by our internship mentor and Technical Lead Mr. Chameera Senarathna. I already familiar with the basic stuff of Git. This workshop was mainly focused on Git branching strategy and release management. I got some new information from this talk as I summarized below.

Keep 'master' branch stable in the development flow is an important one. The central repository holds two main branches with and infinite lifetime, master and develop. When the source code in the 'develop' branch reaches a stable point. All of the changes should be merged back into the master.

The other different types of branched we may use are: feature branches, release branches and hotfix branches. Each of these branches have a specific purpose and are bound to strict rules as to which branches may be their originating branch and which branches must be their merge targets. This site [10] was referenced by the presenter for more details.

2.5 Other Non – Technical Experiences

In addition to the technical exposure I got at Ellipsis, there were so many activities I got exposed within the internship period. Ellipsis did treat us as employees (most importantly we felt the same way as well). We did participate all of the events that has happened in Ellipsis.

2.5.1 The Year-end Trip

In the mid of December, 2015 there was a trip conducted by the welfare team of Ellipsis. We went to Kitulgala for White Water Rafting. Riding modern rafts equipped with safety gear, White Water Rafting at Kitulgala is safe. It was a wonderful experience. Great lake views, delicious food, fantastic service and spotless rooms. The trip was a memorable one. I thank the company welfare community for giving me a nice opportunity to experience water rafting.

2.5.2 The Painting Event

At the completion stages (at end of the fifth month) of our internship, Mrs. Yasanthi Bandara, General Manager of Ellipsis come with a Painting competition idea to decorate the office walls with the paintings which are made by the its employees. This announcement got

my great attention. I always love to draw since my childhood. It's been a long time since I touched pencil and this was a chance to refresh my artistic skills.

All the employees grouped by two, and each of the group allowed to come up with their own creative. I was grouped with a senior developer. The painting given below was my team's final outcome, now it's hanging on the front hall wall of Ellipsis.

Figure 2.10 Our group painting

2.5.3 Annual Kickoff Party

Ellipsis hosted its 2015 Annual Kickoff Party in the beginning of this year and it was held at Colombo OZO hotel. At the beginning of the kick-off meeting, Mr. Rajitha Kuruppumulle, CEO of Ellipsis (Pvt) Ltd. conducted a speech about explaining the ongoing projects and status of the company and future plans for the company. After that there were some party games which had been organized by the welfare committee of Ellipsis to have a little fun and improve the collaboration of the Ellipsis staff. Then after having our dinner there were gifts gave us everyone by the behalf of the company.

2.5.4 Celebrations at Ellipsis

It is a tradition at Ellipsis to celebrate every one's birthday at the company premises exactly on the day of his/her birthday. Most of them were happened surprisingly to birthday person. On that event, the person who had his/her birthday should present a speech about other coworkers, their good and bad. This stronger the bonding among the coworkers. Also they celebrates New-year and Christmas grandly by decorating company premises and play Secret-Santa.

3. CONCLUSION

3.1 The outcomes

Generally, the deeds are more powerful than mere words. Last twenty four weeks were all about that. After five semesters of Theoretical and some extent of Practical ventures, this was an excellent exposure for the real world. I could able to map several theoretical understandings to the actual implementation. The internship was a shift from small scale things to the larger. In the IT industry, for an example at Ellipsis there are people working as well organized teams to achieve a common goal.

Thus, how these workflows are managed? How could their collaboration made into an efficient and effective one? How to handle the scalability and other non-functional requirements of an Organization? How to preserve the employees despite of the workload?

There are hundreds of such questions answered by Ellipsis during these twenty four weeks. I want to mention it again; Ellipsis's culture and its answers for the above questions are pretty much different from the other organizations. But even though I was only exposed to a single Company's culture and I have not much of knowledge to compare and contrast with other companies, the stories I hear from my friends encouraged me to think that Ellipsis's culture is one of the best.

Witnessing how to use those in providing solutions for real life problems making the theories serve humans. I now know being an expert in any programming language is not enough. Actually being an expert in anything is not enough if we cannot use it in correct place in a correct way. Computer Science is a vast field, which can make miracles and learning whole lot of stuff will not ever be a nightmare.

I can't learn even a one is a million those technologies available or contemporary evolving things or those fresh ones which are going to arise and dominate in the future. Thus, I assume that it's always better to get know the technologies, mechanisms (whatever possible) to some extent. This would help to collect a vast pool of area which I could select my favorite set and could expertise in it.

3.2 Satisfaction

My level of gratification is pretty much on a higher side. There are several reasons. The major one is the motivation of Ellipsis. Other reasons for my gratification are as follows.

- I earned many friends and got to know ample of experts during the period. Thus I could get assistance, mentoring from this big network.

- I learned to move with various types of people. Each and every one is unique and I learned to approach, handle them exclusively.

- I've learned quite a lot new technologies. Mainly the organization oriented technologies and mechanisms such as Version Controlling, Building, Mailing and Bug Handling.

3.3 Ellipsis as a Training Establishment

If you have read the previous sections and you would have definitely have the image about this section as well. Of course, Ellipsis is one of the best places for theoretical guy to come and adapt himself to the real world.

I highly recommend Ellipsis as a great training establishment that gives a complete exposure to the global software industry in a modern company background. It has various technologies involved and we could really see the concepts we learnt, at practice. As Ellipsis encourages employees personal improvements with training sessions there was lot of technical knowledge that has enormous value which flows into our brains.

The assigned mentor Mrs. Chameera is the coolest guy I ever met. He never hesitated to assist me. The guidance he has given is very promising and incomparable. And there are several others I have shouted at them during any trivial issue, who have never nodded their heads negatively. There were several tech talks have been held by the Company Staffs. They have really prepared and did with real care. The presentations, demos and hands on sessions were really pleasing and profitable.

The openness of the company, anyone will feel fortunate to work there. Ellipsis treat interns as its employee and more importantly we/interns felt the same way.

3.4 Overall Training program

In a nutshell, this internship has been an excellent and rewarding experience. Before my internship started my ideas did not match the experiences have gained during my internship. There is a big difference in the university projects and the tasks and activities during the actual work. In university we learn how to describe the work in projects, where in work we learn how to implement them in reality.

I learned a lot from the different interns that I have been working with during my internship. Each intern had a different technical skills and that made it interesting for me. By working with them I got to learn from them and become aware technical things.

I also became stronger in my English oral and written communication. I have achieved this by writing blog articles and communicating through the social media tools, writing the user requirements and my internship report in English. I have improved my English oral skills by communicating with the interns, but I still need to practice more on speaking English.

What I did well, during the internship:

- I maintained flexibility in the face of constantly changing priorities.
- I maintained an eagerness to learn.
- I used creativity to match company needs with regulatory requirements.

What I would improve:

- I could be better organized, especially with regards to paper work required for URS gathering and this report.
- I could learn to manage my time better, planning parallel execution of some short duration activities when long running operational activities are occurring.

Anyhow this internship was definitely beneficial for me and I'm grateful and thankful that I got to experience and learn many things. To simply put in the expectations of the Program are fulfilled and I'm looking forward for my Career.

THANK YOU

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ABBREVIATIONS

API – Application Programming Interface

GUI - Graphical User Interface

HTML – Hyper Text Markup Language

IDE – Integrated Development Environment

OS – Operating System

UI - User Interface

XML – Extensible Markup Language

MVC - Model View Controller

CSS - Cascading Style Sheets

CEO – Chief Executive Officer

QA – Quality Assurance

SVN – Subversion

URS – User Requirements Specification

URL – Universal Resource Locator