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Chapter 1: Introduction

1.1 Preamble

An internship is an opportunity for students to work at a firm for a fixed, limited period of time to exercise their knowledge and get acquainted with industry practices. It offers students a period of practical experience in the industry relating to their field of study. It plays vital role to make communication bridge between academia and industry, as industry also get to know the ability of potential students. Experience gained through this internship program is valuable as it allows students to experience how their studies are applied in the real world, and as work experience it can be highly attractive to potential employers on a candidate's CV.

Institute of Information Technology (IIT) offers the glorious opportunity to their students of having an internship within their bachelor program. IIT always emphasize on industry practices in academic study to get up-to-date with new technologies. Various technical courses are conducted by industry experts to fulfill this purpose. Industry people are also invited to host seminars to share their culture and practices with students. Another effective and practical approach is the six month internship program offered at 7th semester of bachelor program.

As a student of IIT, I was also offered internship program at Secure Link Services BD Ltd (SELISE). It is a multinational company and one of the leading software companies in Bangladesh. The internship program helps to apply my knowledge in real life projects. I tried my best to learn the industrial culture and practices so that I can apply this knowledge in my future academic courses and career.

1.2 Origin of the Report

As a part of my bachelor program evaluation, I was instructed to submit a report on internship program experience. The report is intended to represent the overview of SELISE environment as well as my professional growth and project involvements there. It describes the scope of potential

learning for students at industrial environment. It can also provide an overall experience feedback to upcoming batches who would like to do internship at SELISE. It can help them to build their selves according to industry norms.

1.3 Objective

This report is prepared to deliver its reader facts and insights about these following objectives:

1.3.1 Broad Objective

- To represent the valuable experience gained through internship program

1.3.2 Specific Objective

- To mention the industrial practices I have learnt
- To describe the real life projects I involved
- To describe the environment of SELISE
- To highlight the technologies and the software development process adopted by SELISE
- To present the services(type of projects) provided by SELISE
- To describe the facilities provided by SELISE to their employee and intern

1.4 Scope

This report elaborates the overall experience I gained through the internship program at SELISE. It describes company profile of SELISE and their services. The process of working in a team and the structure of team management is added in this report. It also mentions how I adapt to the industrial environment. It mainly focuses which real life projects I involved and various tools and technologies I used. The report concludes by elaborating my technical and professional growth after experiencing the internship program.

1.5 Methodology

The overall report is prepared by analyzing my experience at SELISE as intern and collecting information from websites and documents provided by personnel of the company. Following are the resources of data collection:

1.5.1 Primary Data

- ✓ Practical experience from real life project
- ✓ Collaboration with colleagues and team mates
- ✓ Seminars
- ✓ In house activities

1.5.2 Secondary Data

- ✓ SELISE official website
- ✓ Official document
- ✓ Internet

1.6 Limitations

Internal information of the company is confidential, so limited documents are provided by office. As I worked on specific technologies and single real life project, so it is not possible to give proper overview of other projects development procedures. Information about those projects is gained through collaboration with colleagues. Again report size is not enough to get detailed and clear picture of company profile.

Chapter 2: Company Profile

2.1 Overview

SELISE is a developer of scalable software. It serves clients with innovative and automated solutions. That is SELISE develops products for clients, with clients and sometimes against clients. SELISE is a Swiss software development company that provides high quality industrybased software. It was founded in 2011. They mainly outsource from Dhaka, Bangladesh- a promising area for the IT industry. It is a small company with target pure development projects in .NET or Java. By continuously focusing on the epicenters inside the tech community, SELISE draws on the latest technologies and attack the most challenging projects with determined ATeams. With their High-End Development Center in Dhaka they provide solutions of any scale concerning.

- ✓ Shared License Software Product Development
- ✓ Software Architecture and Technology Consulting
- ✓ Business Process Outsourcing

SELISE provides state-of-the-art software solutions to a wide range of clients, with a creative force distributed over Dhaka, Zürich, Thimphu and Dubai. It's clients are in consulting, egovernment, banking and financing. Their customers are end consumers of SELISE and that's whom it focuses on in all their work. It has an international family of about 70 members also referred as 'Rockstars'. It has groups of developers, designers, product owners, engineers, quality assurance engineers and business specialists. SELISE offers software, content management systems, fun game apps to wide range of international clients. It focuses on challenging requirements of clients and serves them with scalable, optimized and practical solutions. That is any software that requires high load, complex algorithms, big data and high security, be it developed from scratch or a legacy application that needs to be rebuilt are developed by SELISE.

2.2 Vision and Mission

SELISE strives to become a global brand for high-class software product engineering. SELISE's mission is to provide customers with services which are strongly based on intellectual capacity.

2.3 How Does SELISE Works

The following illustration demonstrates a complete organizational setup for SELISE A-Team software development. The underlying structure allows for a maximum output. It can only be adopted with highly talented developers and experienced senior engineers.

2.3.1 Strategic Partnership/ Sponsorship

The partnership is in need of a “Strategic Partner”/ Sponsor at the customer as well as a “Strategic Partner” at SELISE. The responsibility of these Strategic Partners is to provide the “Program Manager” with an adequate environment to execute the desired development projects

2.3.2 Program Management

The on-going development activities are run by the “Program Manager” at SELISE. This person is the main contact on a technical level and shall be involved in all technical communication. The Program Manager is responsible for the delivery and the establishment of Quality Assurance and User Experience Design according to the Product Owner's requirement.

2.3.3 Product Ownership

Customer defines a “Product Owner” who will continuously collect requirements from all the stakeholders and pass the information in an organized way. Depending on the project size, SELISE appoints a “Proxy Product Owner” who will support the Product Owner in his information gathering process, maintain the communication iterations and compare requirements with the developed software.

2.3.4 Core Development Team

A fully functioning development team is in need of a “Senior Software Engineer (SSE)” with 6 to 8 years of experience who covers the role of a “Project Manager”. This senior is supported by two “Software Engineers (SE)” and one “Junior Software Engineer (JSE)”. In small projects, a team can start with one SSE and one SE or JSE and then grow to a basic team of four developers. In specific cases, the team may vary.

2.3.5 Quality Assurance

“Quality Controllers” are selected by the Project Manager from the independent Quality Assurance team in SELISE. They continuously assure the quality of the created software. A main part of their work consists of setting up automated tests for the software which is undergoing the current building process. Regular code and design reviews are initiated, governed and reported by the head of the Quality Assurance team according to the requested standards.

2.3.6 User Experience Design

“User Experience Design” translates requirements into visual user interfaces which optimize interaction between users and the software created. SELISE UXDs work according to the latest standards unless demanded otherwise. The amounts of services these engineers deliver strongly depend on the scope and purpose of the underlying software as well as the Product Owner’s stack of requirements. (SELISE website, 2012)

2.4 What SELISE Do

SELISE manage software projects in what they consult, architect, develop, design and test. Any software development process needs complete integration of customer requirements, development, user interface design and validation. Projects are done with the critical participation of a senior

SELISE system architect at the starting phase of planning. A detailed wireframe of the software system is delivered to clients for integration of user requirements and system architecture. After this phase development starts and regular testing continues with development process. Regular client meetings and live demo are performed as part of project management for being up-to-date with clients and management. Following Figure 1 represents their actual integration process of development and requirements.

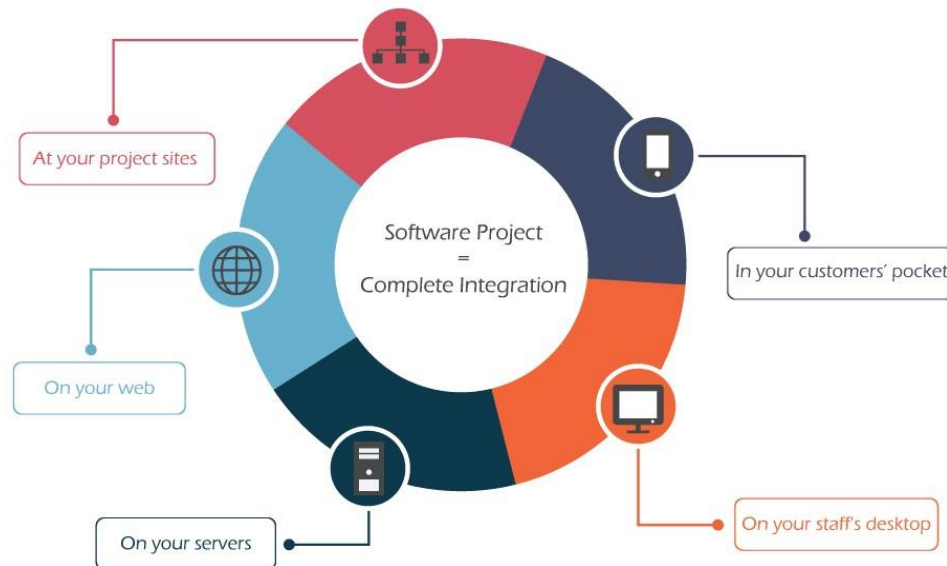


Figure 1: Software Project Integration of SELISE

2.5 Software Development Process

Software development process is a division of software development work into distinct phases containing activities with the intent of better planning and management. It is often considered a subset of the systems development life cycle. The methodology may include the pre-definition of specific deliverables and artifacts that are created and completed by a project team to develop or maintain an application. SELISE also follow this development process while implementing their

projects. They follow agile methodology to support proper integration of project requirements. The following steps describe the development process adopted by SELISE.

2.5.1 Requirement Identification

They identify the challenge first that their business is facing. They start working as soon as the initial scope is defined. This allows evaluating mutual velocity with clients. If they already are in a large project, start with a 3-5 days intensive consultancy that results in a detailed report and a management summary on viable solutions.

2.5.2 Context and Process Capturing

Each project is assigned a product manager in order to capture current business context. Which market suits the business contexts, who are the competitors, what software they use or offer, what is their core competence and what core processes drive it- all this inquires are responsibility of product manager. Once this information are collected, product manager and one of senior architects then work out an appropriate technology stack, architecture and define the business goals of the upcoming product.

2.5.3 Proof of Concept

Seniors are provided with dedicated off-site team and the first prototype applications. The full team work towards to find out potential solution process through research and development to meet the needs of stakeholders.

2.5.4 Up and Running

Once product development starts, a fluent agile software development process continues with continuous integration and periodic releases to production. The complete development process is

conceptualized, documented, tested and delivered using latest technologies. Thus they reduce vendor dependency and enable the product to be taken over at any state.

2.6 Services

In the 21st century all companies and organizations are attempting to introduce automated systems to reduce cost, overhead and ensure security issues. Information technology performs important role in serving these facilities. Software companies serve these requirements of stakeholders and drive revenue.

SELISE offers client with a variety of services to meet the new challenges and invent new solutions to them. Automation and data security of brands, E-government solutions for entities, resolving multi-vendor integration issues, gaming innovation for hyped action games are brought by SELISE. Besides developing quality assurance of this products are also ensured by the company. While working through such projects SELISE has gained huge resource of experts and experience of ideal project management and development.

2.7 Solutions

With the emergent growth of clients needs, Secure Link Services Ltd provides effective solutions to challenging business problems. Following are the solutions offered by them:

- ✓ Large scale enterprise solutions
- ✓ Automated Generalized System of Preference (GSP)
- ✓ Mobile payment
- ✓ Mobile game innovation
- ✓ Public transportation
- ✓ Government consultancy
- ✓ European mobile banking security
- ✓ Investor community portal
- ✓ Algorithm development

- ✓ Automated start-up and investment solution
- ✓ Data security

2.8 Major Clients

SELISE has already completed some challenging projects for some large clients. SELISE has few but strong clients like Swiss based company Ruf. Following are the logos of strong clients of SELISE.



Figure 2 Major Clients of SELISE

2.9 Development Skills and Experience

SELISE has wide experience both in development platforms and business domains. It does not specialize in particular technologies, but it has definitely proficient and experienced with a wide array of tools and systems. Every product is unique and it tries to fit the right team with the right skills for that particular product. SELISE has gained expertise in different types of field. Following are some of them:

- ✓ National archive for government
- ✓ Garments procurement app
- ✓ Content management system
- ✓ Parking management app for a start-up
- ✓ Referral app for a large financial company
- ✓ Advertisement campaign manager for a large financial company
- ✓ File system drive for government
- ✓ E-commerce
- ✓ Banking
- ✓ Financing
- ✓ Consultancy
- ✓ Performance measurement application
- ✓ Payment systems

2.10 Human Resource

SELISE has a family of about 70 Rockstars. They are planning to recruit more. Since the beginning, SELISE has grown in number of resources and production every year. SELISE always looks forward to hire the best. They have their unique hiring process including Super Talent Program and also emphasize on training and schooling facilities to keep their employees up-to-date with new technologies.

2.10.1 Recruitment Process

For recruiting experienced professionals, this goes like an initial phone interview and upon getting a green signal here, a face to face interview. After this interview, they decide whether they can hire the candidate or not. SELISE believes in what a person actually is, not just facts on paper. So candidates need to bring examples of work they've done, cool stuff that they are passionate about, and things they want to do. Interviews range from pointed questions about work examples to casual conversations about life. For fresher, SELISE has Super Talent Program. This is an accelerated

program to take Rockstars to the next level with duration of 3 years with clear indications of the salary package, career growth, increment etc.

2.11 Technologies and Frameworks

SELISE is not specialized or stuck within specific technologies. With passage of time they gain expertise in different technologies and frameworks and arrange seminars or schooling programs to share the knowledge with other SELISIAN. Following are some of their used tools:

.NET & Microsort World:	ADO.Net Entity Framework, ASP.NET MVC, Microsoft Enterprise Library, Share Point, Spring
JAVA world:	Spring, Hibernate, JSP
Servers etc:	Tomacat, Nginx, IIS
Database and NOSQL:	MS SQL Server, MySQL, Mongo DB, Oracle
Javascript Universe:	jQuery, jQuery UI, Node.js, AngularJS, Knockout.js
World of Web:	HTML, CSS, DHTML, XML, XHTML, XSLT
Mobile Space:	Objective C, jQuery Mobile, Android, HTML5,
Framework and Concepts:	Pear framework, Event sourcing pattern

2.12 Projects

SELISE is currently developing customer solutions in above mentioned fields. Due to confidential and privacy issue, name and detailed information of the ongoing projects cannot be mentioned. In the following section ongoing projects are stated with dummy names.

2.12.1 Project A

Ruf International Ltd. (Ruf International AG) is the International Sales Organization of the Ruf Group of Companies. Ruf has various community websites for churches, schools, hospitals, departments etc. So Ruf comes up to SELISE to provide them a solution for handling large number of website contents. To meet up this challenge, SELISE is developing its own content management system that supports multi tenancy facilities. Reservation systems, Media manager, Exhaustive search are some of the features of this project. AngularJS, OData Service, ASP.NET, MySQL, WebAPI, Bower, Grunt are the technologies and concepts used while developing the project.

2.12.2 Project B

Project B is an example of how modern software can revolutionize the venture capital market. The website allows investors to learn about the fastest growing start-ups and understand what the community thinks about them. As a member of the platform investors can follow companies that interest them and see who else is keeping an eye on them. An entrepreneur can create own company profile for free and instantly start building credibility and exposure. The “social proof” factor is a ranking based on an algorithm that considers opinions and endorsements from the most relevant community members. Industry experts and seasoned, experienced investors can also “push” a company. Confidentiality and transparency features are also provided through the website. Technologies and concepts which are used is as following- AngularJS, Drupal, Core PHP, PEAR framework, Varnish, Apache, MySQL etc.

2.12.3 Project C

Project C is a large scale e-government application, and one of the biggest challenge in its development was coming up with a user interface concept that shifts traditional Desktop user functionalities into a modern, web based and highly institutive world. The project is under construction and different features are being added to the web application. AngularJS, HTML, ASP.NET, WebAPI Odata, Rest services, MySQL are used as implementing technologies and concepts.

2.12.4 Project D

Paying in stores or within apps has never been easier. Project D, a state of the art payment solution that introduces a new dimension to user friendly shopping experience, at the same time ticks all the boxes in relation to mobile transaction security. It enables smart phone users to pay without cash, cards or NFC chip. It creates a secure code that can be scanned with existing barcode readers located at the checkout counters without needing to add any additional device. Once scanned it processes the payment momentarily without any human intervention. ISO8583 Transaction server, JVM, Objective C(iPhone app), Java(Android app), JRuby are used for implementing the project

2.12.5 Project E

SELISE puts another effective step into the transportation sector through project E that brings the power to book own personal jet- anytime, anywhere- at ones fingertips. Request for flights, compare prices, and choose the best deal- personal flight booking is now as simple as that. Yet another fantastic addition to SELISE's array of SaaS (software as a service) start-up solutions promises to not only make life easier for travelers, but also create appeal to the jet operators alike by bringing the market to them. Spring, nginx(for load balancing), J2EE, Postgres DB, AngularJS, Objective C are used as implementing technologies and concepts.

2.12.6 Project F

SELISE brings amazing innovation into automating mission critical GSP Process as project F. What could be only be called as an ancient way of doing things for exporters, the previous process obtaining a GSP certificate from the EPB was tedious, painful and included an unimaginable amount of paperwork. Critical processes such as exporter registration, form distribution and tracking, origin verification, etc. used to be done manually. SELISE developed cutting-edge web-enabled software GSP Tracker. Through this software, not only could genuine exporters be registered, but the EPB could also manage the whole GSP filing process. Thus, SELISE came up with a smarter and more efficient process that provided the features of reducing cost, login and privacy, huge data filtering, management reporting and smart searching.

Chapter 3: Company Environment & Culture

3.1 Overview

Man power is one of the most important resources of any organization. Performance and success of an organization depends on the employee of the company. Therefore providing a healthy and friendly environment in addition with professional setup is very important. SELISE believes that in the journey employee should stay fit both physically and mentally while absolutely loving what they do. Hence, SELISE provides all the facilities that are needed for refreshment of the employees while doing their creative jobs.

3.2 Location and Physical Layout

SELISE is a multinational company which has its office distributed in Zurich, Dhaka, Dubai and Thimphu. Following is the address of SELISE Dhaka office -

Midas Centre, H-05

R-16(New) Dhanmondi

Dhaka-1209

Bangladesh



Figure 3 Dhaka (left) and Dubai (right) Office of SELISE

3.2.1 Dedicated rooms

SELISE has hired full floor of Midas centre to support its employees sitting arrangements. Each team is assigned with their dedicated rooms. Product owner, team lead, developers, UX designers and quality assurance engineers of a dedicated team sit in their own room. It ensures proper collaboration and co-operation of team members. And if any team member is stuck in any stage of development process, it is expected that he/she would shout to seek help from his/her team members.

3.2.2 Comfortable Sitting Arrangement

As developers work for hours sitting on the same chair looking at their desktop, SELISE provides comfortable chairs which are adjustable to their height and arms.

3.2.3 Green Plants

Plants do more than just enhance the beauty of your surroundings, many actually clean pollutants out of the air as they add oxygen and humidity to the indoor environment. Each room has various types of plants located in the corner of the rooms.

3.2.4 Dinning and Prayer Room

Dining room is located at the old office of SELISE beside Midas and buffet lunch is served to the employees with variations. Prayer room is also available in office premise.

3.3 Office Schedule

SELISE offers flexible time schedule for employees. Sunday to Thursday is official working days. Though employee are expected to work 9 hours per day, a full day time is considered if anyone enters the office before 12 pm and leaves the office after 4 pm by the measuring the time of employee punch card. Employee are not supposed to work in pressure, they can take breaks during their work.

3.4 Dress Code

There is no specific dress code in SELISE. Most of the employee comes with formal dress up. But no one is allowed to reach office with unusual dress up. Dress that contains logo of other software firms or competitors is not allowed in office space.

3.5 Fine System

SELISE has strict fine system in case of breaking official rules. These fine are collected and used for small parties or events for recreation of employees. There a 'lost and found' box for keeping lost property of employees. If anyone can give proof of the ownership of the property, then he/she

need to pay fine to regain the property. Employees are also fined in case of being late in CTO meeting, scrum meeting etc.

3.6 Admin and Technical Support

There is dedicated admin and technical support group. The admin group takes in account the management of weekly seminars, food management, annual trips, official complaints and many other activities. The tech support group is always there for solving hardware and network related issues and support required environment at the time of live demo.

3.7 Organized Structure

SELISE practices an organized company structure. All the official works are done through a predefined official process. In case of leave management, the employee needs to fill up a leave application and require the signature of the team lead for approving it. Each employee has 15 holidays in a year other than the government holidays. So employee can use these holidays as per their needs.

3.8 Sprint Planning

As mentioned above each team is closely managed by one product owner. As SELISE follows agile software development process, development phases are divided into sprints. Normally sprints contain two weeks that is 10 working days. At the starting of each sprint, development requirements are identified and development process is planned in presence of all team members. After that product owner and team lead divide the sprint into small stories and breaks the small stories into tasks. Each task is assigned to individual team members and it is the duty of the team members to fulfill the task within given time schedule.

3.9 Daily Stand Up

At the starting of each working day daily stand up is hosted by product owner and all the team members are invited. If any team member is late at the meeting, he is fined with 50 taka. The stand up plays important role in development, as all team members clear their dependency of work with others. Each team member also needs to specify what he has done yesterday, what he will do today and if he needs any co-operation of other team members. As a result the whole team remains up-to-date about the current status of their project and share their knowledge themselves.

3.10 Weekly Seminars

Every Monday seminar is arranged by office. One of the employees gives presentation on in the seminar. Everyone is bound to take a seminar throughout a yearly schedule and also gets a huge reward for the best seminar. It is mandatory for all the developers to attend the seminar. All other employee rate the presentation of the speaker and this evaluation plays role in the evaluation process of both the evaluator and presenter. It is also a process of knowledge sharing. Birthdays are also celebrated on Mondays and delicious food is served at the seminar.

3.11 Co-operation

All the employees of SELISE are co-operative and helpful. It is not necessary only team members help each other. If any employee is stuck at any stage, he/she can ask for help of any senior or expert of other team too. As large projects are developed parallel, all the team members help each other to present a successful demo at the end of the sprint. Valuable ideas and solutions are always offered by chief technology officer (CTO).

3.12 Friendly Environment

I have almost spent 5 months as an intern in SELISE. All the members did no differentiate us with other employees. All the members are very friendly. They help us to adapt with the new changes and challenges. And this friendly environment helps us to refresh our minds while working for hours.

3.13 Inspiration

The environment of SELISE is really inspiring. Specially my team lead inspired me after each completion of every small task. This inspiration helps to become more focused to my work. Upper management also inspires the full team after successful client demos. Sometimes chief technical officer gives treat to the whole team and takes them to team event.

3.14 Facilities for Employees

High productivity of employee plays vital role in the economic development of an organization. Salary is only the hygiene factor of job satisfaction. Motivating factors influence the employee's dedication towards his work. SELISE provides various facilities to their employees –

3.14.1 Dedicated Workplace

Each employee is provided highly configured PC for development purpose and other staffs like notebooks, pen, first aid kits etc for their usage.

3.14.2 Tutorials

Licensed video tutorial are supplied by office for learning purposes and various development tips and videos are also published in the official website.

3.14.3 High Speed Internet

24 hour high speed internet facility is provided and all internal and external communication with clients and members are done through skype.

3.14.4 Domestic Environment

SELISE is like a family of rockstars. They help each other not only in professional life but also in their personal life. Working here is fun and working for the company is individual's responsibility.

3.14.5 Schooling Program

SELISE School is a program where different workshops are orchestrated on trending topics. At the end of these workshops, examinations are held covering the topics and marks are updated in a spreadsheet for employees to observe their performance level and progress.

3.14.6 Training

SELISE believe in training and its importance to both employee success and the success of company business. SELISE have a harsh process of continuous learning and coaching. On this purpose, SELISE holds regular workshops and training sessions around the year. SELISE have weekly seminars to keep the SELISIANS updated about the recent trends and technology.

3.14.7 All Day Free Food

All day free food is available here. Buffet lunch is served. There is also daily surprise food and dinner arrangement for employees who work for late night. There is a 'Hunger Hunt' box where food is available in case of sudden hunger. Coffee and tea are served all the day.



Figure 4 SELISE CEO Julian A. Weber (middle) Taking Lunch

3.14.8 Team Fund

After joining the company each employee has his own team fund and taka 500 is given in his fund at the end of every month. Employees use the money at the time of team event.

3.14.9 Games

The compound out of SELISE old office is dedicated for playing outdoor games like cricket, badminton etc. In the middle of their work employees take part in table tennis, carom etc. Annual game tournaments are arranged and winners are rewarded with attractive gifts.



Figure 5 Employees Playing Indoor Games

3.14.10 Reference Points

If any new employee is hired by the company who is referred by any existing employee, the referrer gets bonus point. After earning a certain amount of bonus point employee gets rewards ranging from dinner package to Bangkok Trip.

3.14.11 Recreation

SELISE has different ways for recreation of employee. Release parties, picnics, outings are part of it. Employees are taken out of the country for annual trip every year. In spite of being an intern, I received all these facilities and consider myself lucky.

- ✓ Birthdays of the employees are celebrated with birthday cakes. Teammates give surprise gift to the employee to make him feel special.

- ✓ After successful completion of sprints, teammates enjoy parties using team funds.
- ✓ Annual dinner party is also arranged by Office where employee attend with their family members.

3.15 Culture

SELISE has a great working environment with a rich culture of fun and professionalism that attracts the best talent . Cultures that I have found in SELISE Software are discussed below:

3.15.1 People

SELISE believes in what a person actually is, not just on papers. It runs regular training and review sessions to keep employee on the top. And its culture of constructive criticism, learning and sharing expands our horizons and keeps employee level headed.

3.15.2 Corporate Culture

In 2015 SELISE was mentioned in an extensive story in Bhutan's national newspaper Kuensel. The article shades light on SELISE's successful expansion to the exclusive Himalayan resource hub. After a pilot phase in 2014 today SELISE maintains a small Rapid Application Development Team in Thimphu, the capital city of Bhutan.

3.15.3 Fun and Passion

All the employees are always connected with each other and share a special bond among them. Sometimes its about doing research and development, sometimes having errors in code, sometimes discovering new solutions to problems, sometimes planning for events or sometimes its just selfie time.



Figure 6 Having Fun with Colleagues

3.15.4 Sports

Sports are a part of SELISIAN culture. All the time there is a crowd seen around the playground. Everyone competes to get the play board. Yearly playing tournaments are arranged and rewards are given to the winners.

3.15.5 Working Environment

SELISE has a great working environment at the office space, totally custom designed for a software development company. From color selection to furniture orientation it has been very careful to create an environment that actively enhances the knowledge exchange and collaborative nature of work. All teams are working dedicatedly in their own rooms. All the rooms are kept sound proof to maintain privacy and ensure corporate environment in the room.

3.15.6 Good Bye Gifts

All the members take part to buy gifts and surprise cards to wish any employee leaving the company. Sometimes they throw parties to say good bye.



Figure 7 Saying Good Bye to Hridi Reza (middle)

3.15.6 Annual Trip

SELISIANS are always on the move – let it be the annual company trips and individual business trips throughout the world or fun trips to cool places in Bangladesh. Switzerland, Austria, Germany, UAE, Malaysia, India, Bhutan – everywhere new experiences are enriching and refreshing SELISE minds.

3.15.7 Weeding Party

SELISE family always attends marriage ceremony of their employees. Either the employee invites all his colleagues to the marriage ceremony or arranges a feast at office premise for all SELISIANS. A grand gift is arranged for the married couple by participation of all SELISIANS.

Chapter 4: Internship at SELISE

4.1 Overview

Internship is the process of on-the-job training, which particularly beneficial for students with major in technical courses. Internship is a bridge between academy and industry. It not only let the students to be familiar with industry trends but also helps the company to advertise their selves to the new generation of talents. Through internship program, company can attract potential candidates as well as can build them according to the company development practices.

Internship at SELISE starts at 2015. I consider myself lucky to be a member of first intern group of SELISE. The program helped me not only to practice my knowledge in real world, but also make aware of the facts that are necessary to survive in the industry.

4.2 IIT and SELISE

IIT always emphasize companies to arrange seminars in the institute premise. SELISE has arranged seminar in IIT to introduce their profile to IIT students. Thus, SELISE shares a good relationship with IIT. We are the first batch to perform internship at SELISE. We were called to an interview with chief technology officer of SELISE. He had formal discussion with us about our field of interests, preferred technologies and what we expect from SELISE. We joined SELISE on 1st January, 2015. We were welcomed warmly and they provide us with all the facilities without any complaint.

4.3 Facilities for Interns

All the members of SELISE welcomed us just like any new employee. We were introduced to the other employees. We were treated just like any other employee of SELISE. In the first stage we were in close observation of company CTO and he shared his knowledge with us and spent his valuable time to make us comfortable with the environment and companies technological trends. Following are some of the facilities that we were offered in SELISE

- ✓ Dedicated workspace like any other employee
- ✓ Individual PC and other facilities
- ✓ Healthy amount of remuneration
- ✓ Small sessions on new topic from CTO
- ✓ Smart coding tips from CTO
- ✓ Opportunity to get familiar with new tools
- ✓ Opportunity to work in real life project
- ✓ Become a member of real life project team
- ✓ Flexible working time
- ✓ Leave for academic activities
- ✓ Flexible working environment

4.4 Schooling Programs and Training

At the first level when we were assigned any new challenges, CTO gives us clear description of the concepts. Once we were clear with concepts we were asked to implement the challenge. We also attended quality assurance schooling program. Company CTO took the QA classes and at the end of every class, all the participants were offered delicious food. At the end of the QA course a written examination was taken and marks as well as feedback was also provided to clear the concepts. Here are some of the courses completed by SELISE so far:

- ✓ Agile Software Development
- ✓ Object Oriented Programming
- ✓ Design Pattern Returns- Rise of refactoring
- ✓ Test Driven Development

- ✓ SharePoint training
- ✓ Close Encounters with AngularJS
- ✓ 35mm (A series of video sessions)
- ✓ CQRS unchained

4.5 Assignment of Work

In most if the organizations, interns are treated as immature resources and they are not assigned with some real work. SELISE not only gave us proper concept of the problem statement but also involved us in finding and implementing solution of the problem.

4.6 Evaluation of Interns

All learning programs end up with an evaluation process. As a part of my evaluation at my internship program, a form containing questions regarding my technical, professional skills, growth, quality of work, punctuality, analytical ability is sent to SELISE. My direct supervisors company CTO and team lead performs the evaluation process. And this feedback is really important for me as it not only points my strength, but also reflects my weak zones on which I need to improve for future success of my carrier.

4.7 Conclusion

After spending five months of my internship program, I would really appreciate the provided facilities and knowledge of SELISE. The procedure they adopted for intern management is really impressive. I am also thankful to IIT foe giving me this chance.

Chapter 5: Learning Phase

5.1 Overview

In our academic life we complete courses on different technologies and concepts. Within this short time it is not possible to apply this knowledge with actual industry practices. Thus internship as part of academic curriculum plays a vital role in the learning phase of a student. As I joined SELISE as an intern, I had not proper knowledge about industry practices. SELISE CTO helped me to overcome this situation by training and making me familiar with new tools to manage the overall process.

5.2 Assignment Chat Application

On the very first day of our interview we were assigned an assignment, to implement a chat application using C#.The application supports chatting among users and provide multicast and broadcast facilities. So On my first day of office I submitted the assignment to our CTO. After this assignment he introduced us with tool 'FogBugz'. So that we can note our daily tasks on that tool and he (CTO) would be able to monitor our daily activities easily.

5.3 Brief on Http Web Server

After the first assignment we were given brief about how a simple http web server serves static pages. The session helped me to clear my concepts about web page serving on http requests.

5.4 Project Simple Http Web Server

We were assigned an project of implementing a simple http web server using ASP.NET. The web server servers static pages, supports concurrent users based on hardware configurations, supports transferring and downloading file. It has allows directory browsing and mapping virtual directories to physical directories. Caching in FIFO pattern was also implemented.

We also became familiar with 'Fiddler' for processing and understanding the format of http request and response. We also learnt how to refactor the code automatically using Visual Studio intellisense.

5.5 Tutorials and other resources

Seniors also share their important links and resources to help me overcome learning phase. Licensed tutorials are downloaded and supplied by company authority. Seniors also gives smart tips about their experience on previous projects.

5.6 Communication and Collaboration

Within a very short time I become familiar with my colleagues. They were very friendly and cooperative. There are specific group like SELISE Talk in Gmail, SELISE facebook group, Dhaka mail etc. All this are means of communication and way of sharing opinions. I also got help from admin group for knowing the office rules and tech support group for setting up my development environment.

5.7 Working Environment

At the first stage I found it a little bit difficult to cope up with new working environment as project has specific deadline. On the other hand there is no buffer time for learning before starting work. SELISE follows research and development strategy each time a unknown problem arises.

Chapter 6: My Project Involvement

6.1 Problem Statement of Project

In my learning phase I was working with internal projects assigned by company CTO for making strong base for future development. In February I was assigned in a real life project. I am still working on the same project.

Ruf, the biggest client of SELISE comes up with a challenge of content management system. Ruf has various community website for example- churches, schools, hospitals, departments etc. Currently an existing company is hosting all the websites. That is SELISE is going to replace the existing hosting company in the market place by keeping it confidential to clients. Only the backend of the content management system will be replaced and users will be provided with same user interface, as nothing has changed.

6.2 First Level Solution

As in the current market context there are various types of open source content management systems available. So SELISE wanted to avoid reinvention of the same thing and comes up with a solution of using open source content management system to serve the 50 websites.

SELISE decided to migrate one of the most complex community website so that it can be showed to the client and later it will be easy to handle other simple community websites. Following is the link of the website: **<http://pfaeffikon.ch/home.html>**

Umbraco is an open source content management system platform for publishing content on the World Wide Web and intranets. It is written in C# and deployed on Microsoft based infrastructure. The open source backend is released under an MIT License while the UI is released under the Umbraco license. It stores data in relational database and works on Microsoft IIS. Umbraco's front end is built in using ASP.NET. So SELISE decides to use Umbraco for serving the problem statement.

Umbraco is one of the easy content management system. Following are some of its features:

- ✓ Easy user interface and its free
- ✓ Tree structured content management
- ✓ Customized document types where document types are anything like C# model class
- ✓ Built in and customized data types like class attributes and their types
- ✓ Support for developer section
- ✓ Automatic template direction
- ✓ Enriched online media support
- ✓ Login support and transparency

6.2.1 My Responsibility

- ✓ My responsibility was to learn basic idea and usage of Umbraco. Video tutorials were supplied by product management team.
- ✓ Create data structure or model classes of pfaeffikon website.
- ✓ Entering data of pfaeffikon website to our own website.

6.2.2 Team

I was assigned to a team containing four developers including two interns and one UX designer. I worked closely in communication with UX designer group. Senior developers were assigned to implement a reservation module for the website and inject it in the Umbraco backoffice. So it was my huge responsibility to create model classes/document types to support pfaeffikon website.

6.2.3 My Contributions

Following are the tasks done by me through the first level solution:

- ✓ I created more than 13 document types and defined their attributes. All this content types are needed for entering data of pfaeffikon site to our migrated site.
- ✓ I created a tree like structure of all the navigation and sub navigation of pfaeffikon site.
- ✓ I wrote the rezor code for rendering the data got from the tree structure
- ✓ I worked on media types for rendering photo galleries look alike pfaeffikon site. The site also supports various pdf and docx files. So I worked on supporting media files in our migrated site through using Umbraco media module.
- ✓ I also worked with our UX designer to design the rendered page just like pfaeffikon website.

6.2.4 Challenges

Challenges that I faced while migrating the site are listed in the following part:

- ✓ The main challenge for me was I joined SELISE only a month ago and I had little idea about the trend of managing and developing projects.
- ✓ Umbraco is the latest .net framework so it has only few resources available in internet.
- ✓ No user requirement was given to me as per which I could create the model classes of the site. So I had to understand the whole structure of the existing site and then define document types to support the migrated site.

6.2.5 Technologies and Tools

When I was told assigned to the project, our CTO told us that we have to use Umbraco and have to learn all other tools that are needed to support working with Umbraco.

- ✓ Umbraco
- ✓ ASP.NET Razor
- ✓ MySql
- ✓ Html

6.3 Drawback of First Level Solution

Major requirements of any web applications include user friendly interface and exhaustive search facilities. As pfaeffikon has a complex structure, it contains huge amount of data. But all the data in Umbraco is stored in a tree like manner and user need to search in the tree to find out the specific data. It is one of the major drawback of Umbraco. If a tree contains thousands of nodes, then it become very tough to for clients to search data. Another major drawback of Umbraco is it does not support multi-tenancy system.

Though Umbraco had various external package manager, it does not have any tabulated view of data, where data can be viewed, edited and searched exhaustively. We do some research and development on this topic. We were asked to create a plug-in to support grid view of data.

6.3.1 My Responsibility

- ✓ My responsibility was to propose a grid view of data of all document types.
- ✓ To inject a custom module in Umbraco backoffice.
- ✓ Search, edit and delete option should be enabled.
- ✓ To create a user friendly interface and to propose a more feasible solution to manage the document types.

6.3.2 Team

It was the responsibility of the intern group to propose the solution. And our CTO provides us the requirement of solving the problem.

6.3.3 My Contributions

Following are the solutions that I worked on to meet the requirements:

- ✓ I worked on injecting a module in the Umbraco backoffice for tabular view of data. ✓ I designed a logic to extract data of same document types from the tree structure of Umbraco.
- ✓ Edit facilities were also added in the grid view
- ✓ I worked on SQL queries of Umbraco database to understand their mechanism of data rendering.

6.3.4 Challenges

As I was new to Umbraco and creating a plug-in for any framework requires a good understanding of the existing framework I faced many challenges.

- ✓ The main challenge was finding existing Umbraco library that supports data extraction from tree structure.
- ✓ I had to do search for various resources to add a custom module in the backoffice.
- ✓ I had to analyze huge SQL queries containing seven join operations of Umbraco database.

6.3.5 Technologies and Tools

Following are the tools that I used while performing the above mentioned responsibilities:

- ✓ Umbraco Api Controller
- ✓ AngularJs

6.3.6 Conclusion

Due to lack of time I was not able to inject search operation in the grid view. Meanwhile I was assigned to a different project to work on. But I learnt a lot through this time as I learnt new Umbraco controllers and analyzed how complex queries take place in the backend of open source projects.

6.4 Final Solution SELISE CMS

While everyone was busy doing research and development for enabling tabulated representation of data, higher authority decided to move out of Umbraco and create SELISE own content management system. It will have all facilities of simple content management system, will have user friendly interface and solve all the drawbacks of Umbraco. I was assigned to this project in April and am still working on this.

6.4.1 Features of SELISE CMS

The CMS has three parts: Web Admin, Rest Service and Web Client. Web admin enables users to create or edit content types, Rest service provides the data from the database and Web client represents the websites. Following are the features and external modules of SELISE content management system:

- ✓ User friendly interface
- ✓ Tabulated view of data
- ✓ Search management
- ✓ Multi-tenant supported
- ✓ Reservation Module
- ✓ Media Module
- ✓ Validation Framework

6.4.2 My Responsibility

I have spent four sprints in this project. And at end of every sprint we had successful demo to our clients.

- ✓ My first responsibility was proposing content types for supporting and developing a website like pfaeffikon.
- ✓ To create about seven content types for pfaeffikon.

- ✓ To support dynamic navigation creation and dynamic routing url.
- ✓ To create multi tenant management system.
- ✓ To enable dynamic database direction and creation.
- ✓ To handle server configuration and dynamic database mapping for OData service.
- ✓ To write template for unit and integration test cases for all the content types.

6.4.3 Team

I was assigned to a team of 4 developers, two UX designers and one product owner. I cordially thank my team lead for helping me at each stage of development and teaching me new technologies and assigning challenging problems to me.

6.4.4 My Contributions

- ✓ **Creating content types** : I wrote model class for about seven content types. I exposed OData service by writing controllers for the contents. I took part in writing JavaScript controllers for creating and editing contents in webadmin and also wrote controllers for list and detailed view of contents in webclient.

49.0.33.29:81/admin/#/

SELISE CMS

Search...

Content Manager

- Association List
- Book List
- Contact List
- Content Wrapper List
- Departent List
- Event List
- Holiday List
- Municipal Assembly Decision List
- News List
- Office List
- Opening Time List
- Person List

Person Lists

Content Manager / Person

New Person

















Name	Address	Function
Erni Bruno	Blank123	 
Walt Erika	Finanzen, Liegenschaften	 
Gubler Stefan	Werke (Abfall, Energie, Wasser, Abwasser)	 
Amstutz Pius	Address	 
Hugentobler Hanspeter	Address	 
Abul Bashar Jonathan	Jonathan	 
Name Name emaN Name ...	Address1	 
Name1	Address1	 

Figure 8 Web Admin of SELISE CMS

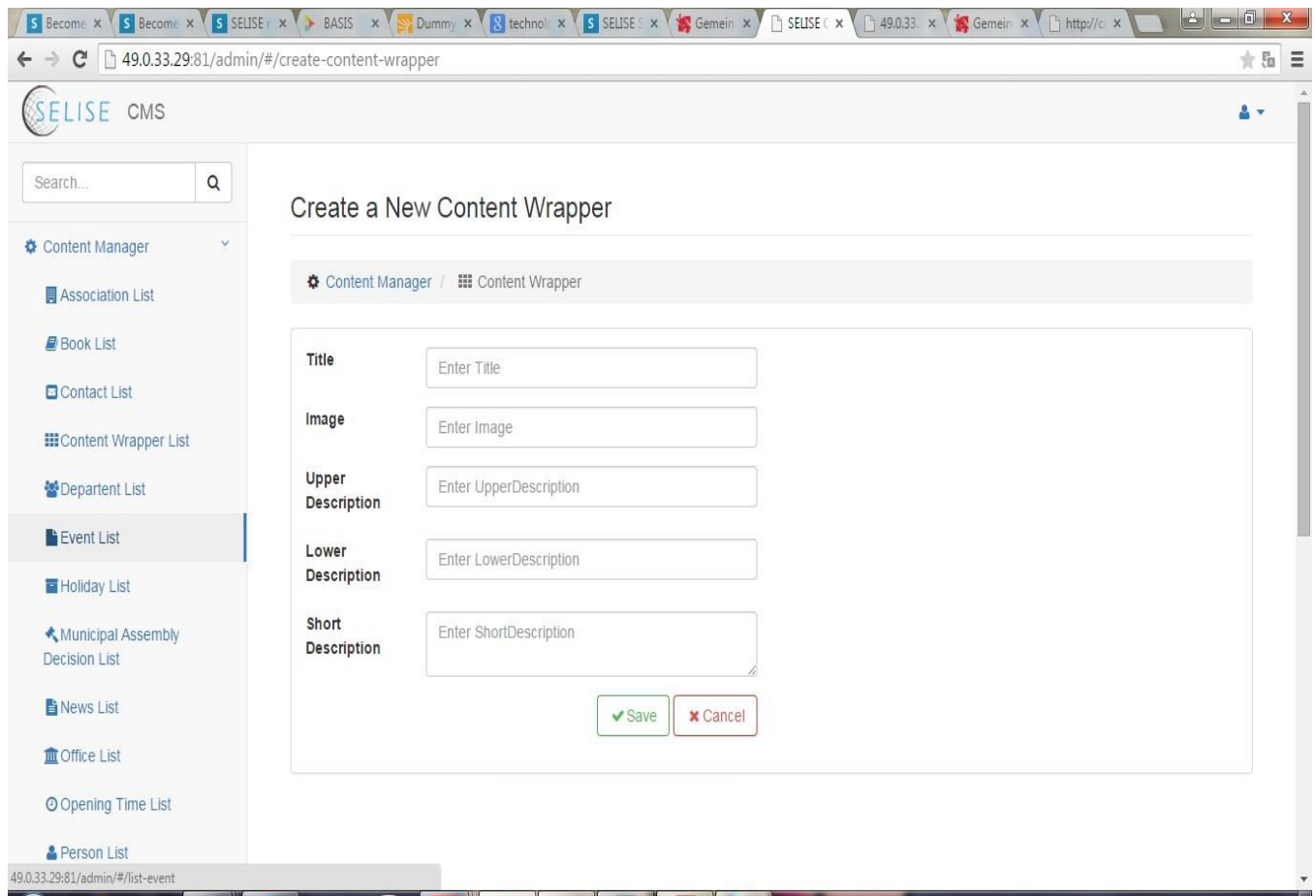


Figure 9 Creating a New Data of Type Content Wrapper in Web Admin

- ✓ **Dynamic navigation creation and routing:** I worked on dynamic navigation menu creation and auto routing using AngularJs ui-router. Three types of navigation can be created in the system: main menu, side menu and footer menu. User can add as menu as contents in the menu items as each menu represents a web page in the website. Automatic route directing is also handled by the system. I took part in writing JavaScript controllers for creation of menu items and creating dynamic route url in the system. User can also select the number of contents he/she wants show in the web pages.

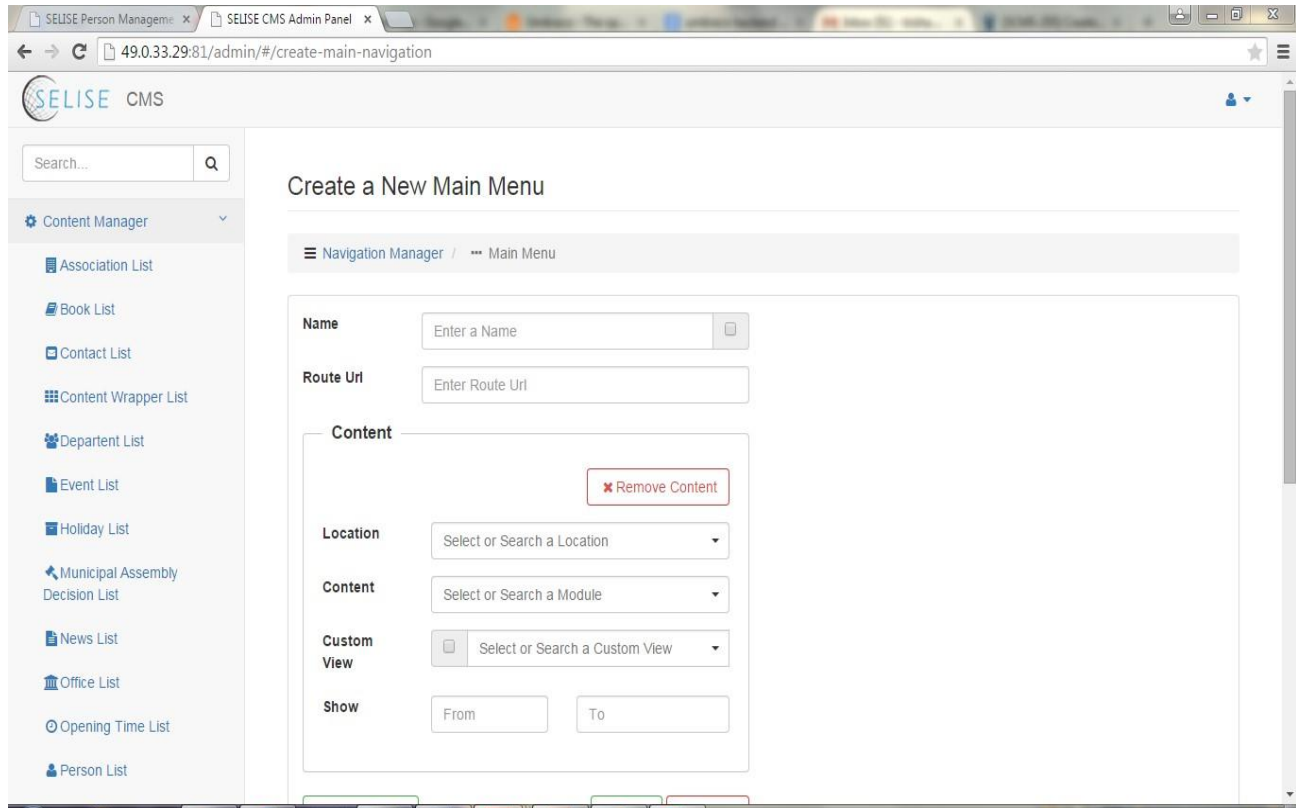


Figure 10 Navigation Creation In Web Admin

- ✓ **Dynamic database creation based on requested url:** Dynamic database is created in the backend based on requested url. As multi-tenancy is supported in the system, each tenant is given its dedicated database. I wrote the controllers to dynamically direct and create database based on requested url.
- ✓ **Server configuration:** A json file is written by me to handle dynamic mapping of the database.
- ✓ **Multi-tenant management:** I worked in creating folder structure of the tenants in both web admin and web client. Multi tenancy ensures when a new tenant is created, no JavaScript file is copied and only templates are written. Figure 11 and 12 are two tenants created so far using the CMS system. I also deployed the projects in IIS server for client demo and refactored the structure of tenant management.

Browser tabs: Become x, Become x, SELISE r x, BASIS x, Dummy x, technol x, SELISE S x, Gemein x, SELISE C x, 49.0.33. x, Gemein x, http://c. x

Address bar: 49.0.33.29:81/#/home/association

GEMEINDE **PFÄFFIKON ZH**
DIE PERLE AM PFÄFFIKERSEE

Home Conatct Us

Navigation icons: Home, Calendar (28), Camera, Edit, Search (Suchbegriff eingeben ...)

> Association	Verein	Webseite	E-Mail
> Book	Title	Webseite	E-mail
> Department	asd	Webseite	E-mail
> Event	sadasd	Webseite	E-mail
> News			
> Opening Time			
> Person			
> Vacancy			
> Holiday			
> Contact			

Figure 11: Tenant 1 Created By SELISE CMS

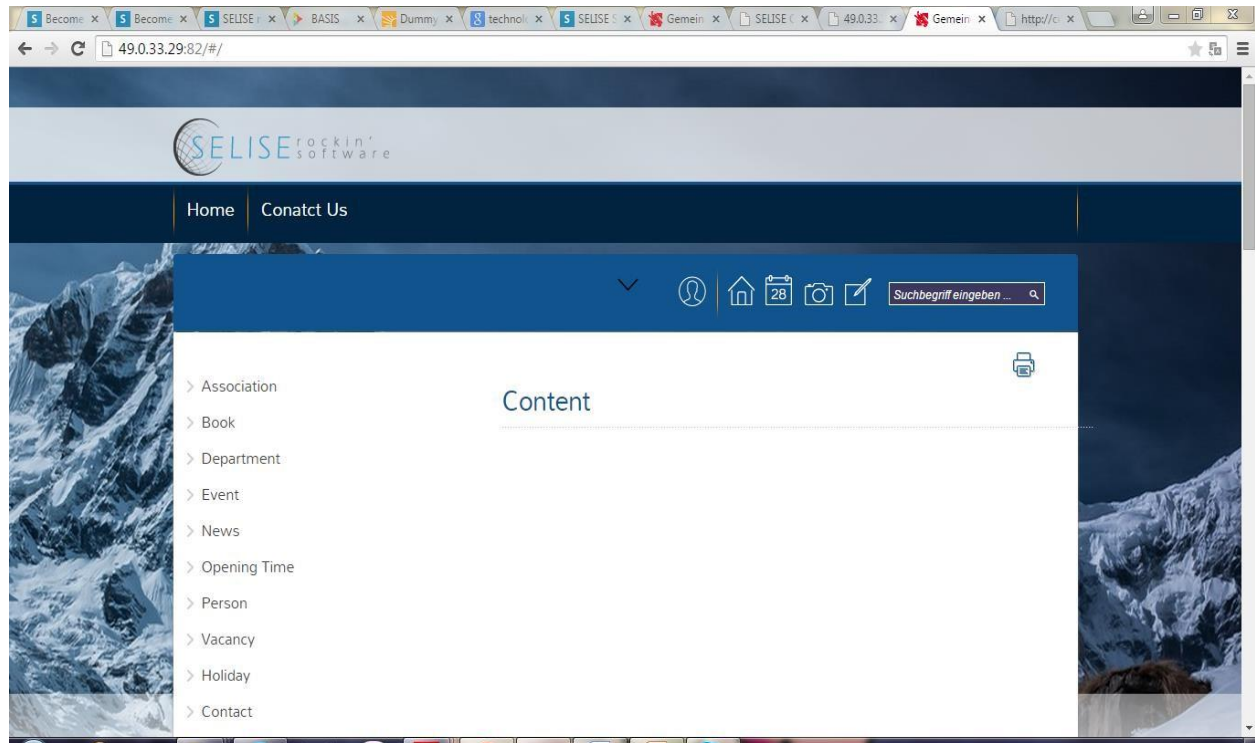
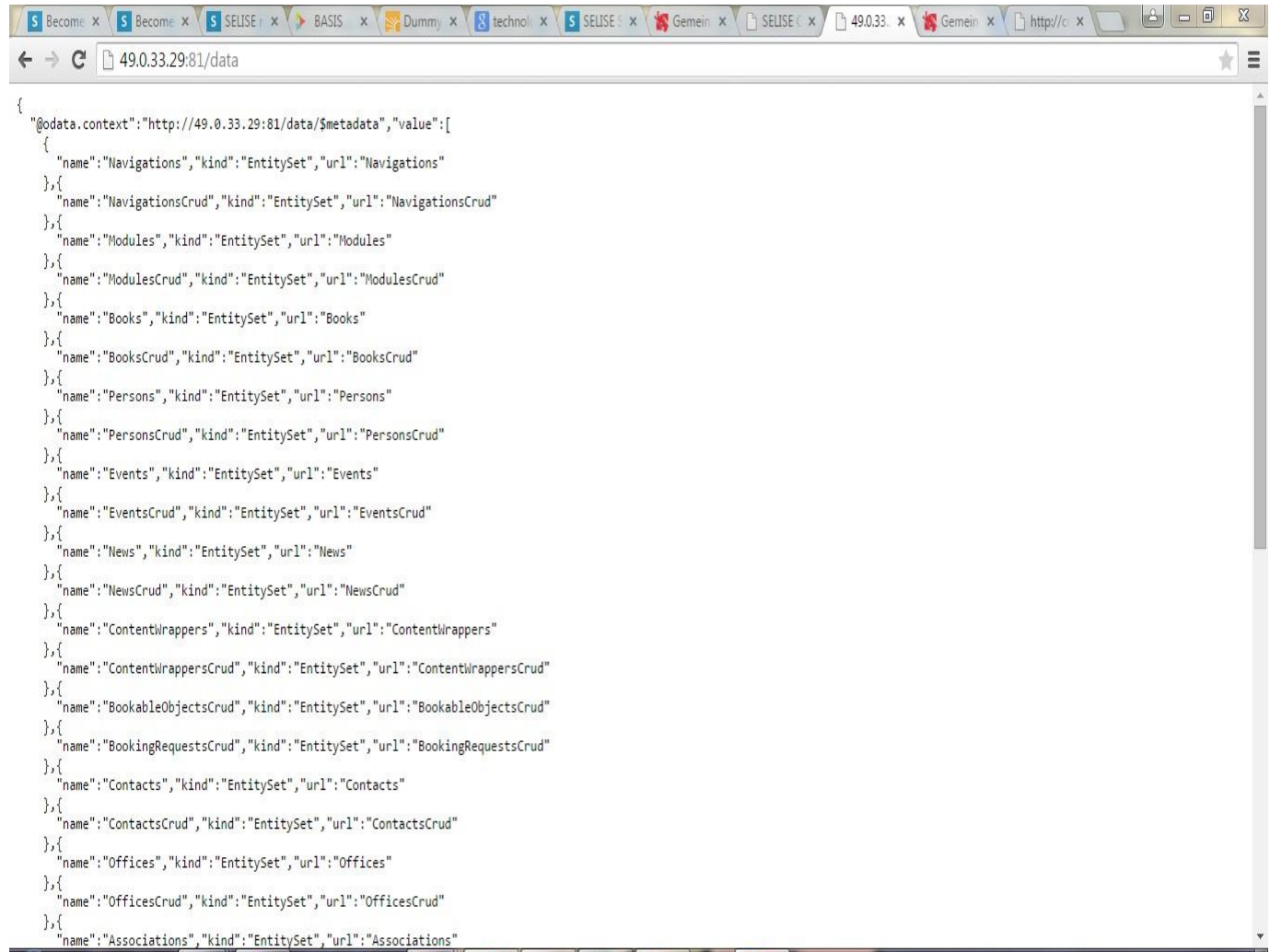


Figure 12: Tenant 2 Created By SELISE CMS

- ✓ **Asynchronous Script Loading:** Asynchronous script loading is also done to decrease the over head of coding and increasing the performance of the system.
- ✓ **Unit and Integration Test:** In the first sprint I wrote some unit test cases for Kendo scheduler, an open source module that is going to be injected in our project as reservation module. I also wrote integration test cases as day by day new contents are being added into the system and it is important to do testing to ensure safe integration of contents and modules. Following Figure presents the rest service of our project:



```

{
  "@odata.context": "http://49.0.33.29:81/data/$metadata", "value": [
    {
      "name": "Navigations", "kind": "EntitySet", "url": "Navigations"
    }, {
      "name": "NavigationsCrud", "kind": "EntitySet", "url": "NavigationsCrud"
    }, {
      "name": "Modules", "kind": "EntitySet", "url": "Modules"
    }, {
      "name": "ModulesCrud", "kind": "EntitySet", "url": "ModulesCrud"
    }, {
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    }, {
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    }, {
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    }, {
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    }, {
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    }, {
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    }, {
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    }, {
      "name": "Offices", "kind": "EntitySet", "url": "Offices"
    }, {
      "name": "OfficesCrud", "kind": "EntitySet", "url": "OfficesCrud"
    }, {
      "name": "Associations", "kind": "EntitySet", "url": "Associations"
    }
  ]
}

```

Figure 13: REST Service of SELISE CMS

6.4.5 Challenges

Following are the challenges that I faced while doing my tasks:

- ✓ I was new to AngularJS so it was tough for me to get acquainted with it.

- ✓ I have never implemented multi tenancy feature, so I need to do some research and development for implementing it.
- ✓ Configuring the server based on request url was a challenging and interesting problem.
- ✓ I had to prepare integration test framework, as I had never written integration test cases.

6.4.6 Technologies and Tools

Following are the tools and platforms that I used while performing the above mentioned responsibilities:

- ✓ AngularJs ✓ ASP.NET
- ✓ MySQL
- ✓ OData
- ✓ WebAPI
- ✓ Bower
- ✓ Grunt

6.4.7 Conclusion

I would like to thank both IIT and SELISE for giving the chance of working in such a real life project. Working in it not only increases my skills but also working in it is fun.

Chapter 7: My Bhutan Trip

7.1 Introduction

SELISE offers annual trip for its employees every year. It is a mean of increasing collaboration, cooperation and creating healthy environment among its employees. SELISE believes that the

employee should be fit both physically and mentally and they should exactly love and be passionate about what they do.

Like every year SELISE has arranged an annual trip for all the employees at Bhutan. The tour is named as '**Rockstars in Paradise**'. As an intern I also got the chance to be a part of this tour. Family members are also allowed in the tour. So I took my mother with me to enjoy the trip.

Following is the short description of my Bhutan trip-

7.2 #Day 1: Take off from Bangladesh and arrived Thimphu

We started our journey on 8th April morning. All the trip members met up at the airport and we reached Thimphu, the capital of Bhutan by 10.30 am. Arrangements of vehicles and hotel booking were done previously by office admin group. He stayed at a three star hotel named 'Hotel 89'.

After we reached the hotel, we take light meal and spent the first day by roaming in Thimphu here and there.



Figure 14: Roaming in Thimphu City



Figure 15: Reached Bhutan Airport at Thimphu

7.3 #Day 2: A memorable visit to Buddha Point

On second day, a day long trip was arranged by SELISE. All the colleague started journey to 'Buddha Point' a gigantic statue of Buddha in the mountains of Bhutan. After that we visited 'Thimphu Park' and 'Botanical Garden'. Near the botanical garden we also bought jam and jellies from a garment. We had our lunch in a five star hotel named 'La Meridien'. In the evening we visited 'Telecom Tower' from where the whole Thimphu city is visible.



Figure 16: Rockstars in Paradise (Buddha Point)

7.4 #Day 3: Taking on the Tigers Nest Challenge

Paro Taktsang is the popular name of Taktsang Palphug Monastery (also known as Tiger's Nest) a prominent Himalayan Buddhist sacred site and temple complex, located in the cliffside of the upper Paro valley, in Bhutan. On day three, a group of 8 colleagues took the challenge of defeating the Tigers' Nest. We trekked for about 6 hours and climbed 3 hills at a stretch. It was an life time experience and achievement.



Figure 17: Victory of Tigers Nest

7.5 #Day 4: Rafting in Mochhu River

On day four we started for Punakha a state of Bhutan. It is about 3 hours journey from Thimphu to Punakha. There we rafted for 2 hours in Mochhu river which is a female river. And we enjoyed beautiful river site and at the end we reached Punakha Dzong through rafting. We also travelled 'Dochula Pass' which is on the way from Thimphu to Punakha.



Figure 18: River Rafting at Punakha

7.6#Day 5: A visit to Paro

On the fifth day we moved on to Paro and stayed at a resort called 'Dechen Hill Resort'. We visited 'Chelela Pass' from where the cliff of Himalaya is seen. We roamed in the city of Paro here and there.

7.7Conclusion

We started for Bangladesh on 13th April and take off from Bhutan for Dhaka after a 6 hours delay of flight. The trip plays a vital role in strengthening my bond with all my colleagues.

Chapter 8: Technical & Professional Growth

8.1 Technologies and Tools I Learned

As mentioned above, SELISE works in multiple platforms. But the team I had been assigned works in windows platform and uses ASP.NET for developing the project. Therefore most of the things I learned are Microsoft and its related technologies.

In Bangladesh the culture of pirated culture has been very popular. In our academic works most of the time we use free or pirated software. At SELISE, I was provided with most updated and registered versions of Microsoft software. I have learnt a lot of new technologies and tools there. It is the best time to get familiar with all these and becoming confident about using this in our future career.

8.1.1 Tools

Choosing appropriate and optimized tool for implementing different problems is an important decision. Programming tools make development easier. Following are the list of tools I used at SELISE for my daily works:

8.1.1.1 Visual Studio 2013

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. We have to use Microsoft Visual Studio 2013 to work with ASP.NET and all the team members feel suitable to use it as it offers a huge range of development facilities.

8.1.1.2 SQL Server 2012

Microsoft SQL Server is a relational database management system developed by Microsoft. Previously, I only worked with MySQL. But for project purpose I had to learn how to work in SQL Server 2012. Though the queries were more or less same there are some features of SQL Server that I have to quickly adapt with for its full utilization.

8.1.1.3 FogBugz

FogBugz is an integrated web-based project management system featuring bug/issue tracking, discussion forums, wikis, customer relationship management, and evidence based scheduling developed by Fog Creek Software. The feature tracker allows users to manage, filter, sort and navigate a tree-structure of tasks, that contain information, tags and attached files related to a particular issue. I used it in the starting period of my internship to update my activities and share it with CTO.

8.1.1.4 Fiddler

The Fiddler tool helps to debug web applications by capturing network traffic between the Internet and test computers. The tool enables to inspect incoming and outgoing data to monitor and modify requests and responses before the browser receives them. Fiddler also includes a powerful event-based scripting subsystem, which one can extend by using any .NET Framework language. I used it while developing the simple Http web server.

8.1.1.5 Balsamiq

Balsamiq Mockups is a rapid wireframing tool that helps us work faster and smarter. It reproduces the experience of sketching on a whiteboard, but using a computer. I used it to create the mock of a performance indicator app.

8.1.1.6 Jira

Jira is a proprietary issue tracking product, developed by Atlassian. It provides bug tracking, issue tracking, and project management functions. Our whole project is handled by using Jira board. One can see his assigned tasks and the sprint activities in the dashboard. And every employee needs to update his status in Jira board.

8.1.1.7 SourceTree

SourceTree is a powerful Git and Mercurial desktop client for developers on Mac or Windows. Our full project is handled in git. All the members work concurrently in their PC and all their submissions are merged by source tree. It is one of the most important tool that I learnt at SELISE.

8.1.2 Technologies and Framework

8.1.2.1 AngularJS

AngularJS is an open-source web application framework, maintained by Google and community, which assist with creating single-page applications, one-page web applications that only require HTML, CSS, and JavaScript on the client side. Its goal is to augment web applications with model– view–controller (MVC) capability, in an effort to make both development and testing easier.

8.1.2.2 ASP.NET

Asp.net is an open source server-side Web application framework designed for Web development to produce dynamic Web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. ASP.NET is a huge framework. There are many subsections of this framework. One single requirement can be fulfilled in many ways. We developed our project using this framework.

8.1.2.3 Entity Framework

Entity framework is a popular ORM of the ASP.NET framework. Entity framework comes with code-first approach which makes the database design really simple.

8.1.2.4 JavaScript

JavaScript also known as ECMAScript (the untrademarked name used for the standard), is a dynamic programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also used in server-side network programming with runtime environments such as Node.js, game development and the creation of desktop and mobile applications. Our web admin and web client application is fully done by writing JavaScript controllers.

8.1.2.5 Html / Css

The design of our web pages is done using html and css elements.

8.2 Professional Growth

8.2.1 Development Technique

As a fresher when I started my development tasks I had a lots of confusions and questions. But as I mentioned SELISE follows agile process, whenever we get new challenges we have some buffer time to do some research and development activities. Our team lead and seniors are always there to influence our development skills. Daily scrum helps me to get up-to-date with the new technologies and the current status of the project. As the project is huge and everyone works in different modules, one does not have detail idea about another module. So knowledge sharing sessions are arranged among the team members.

8.2.2 Pair Programming

My team members always perform pair programming. It helps us to share knowledge and get to the errors more faster. Some studies suggest that pair programming produces software with less number of bugs than software developed alone. Reduction in defect rates of 15% to 50%, varying depending on programmer experience and task complexity. Pairs typically find more design alternatives than programmers working alone, and arrive at simpler, more-maintainable design; they also catch design defects early. Pairs usually complete work faster than one programmer assigned to the same task. So I leaned the process of pair programming while solving problems with my team members.

8.2.3 Respect for Each Other

In a corporate environment respect for each other is a must. For gaining respect a person need to show respect to his fellow co-workers. Doing this creates a healthy environment among the members and a helping hand of seniors is always there for you.

8.2.4 No bullying and blaming

Software development is always a team work. And when there is a team work, misunderstanding is very usual. However, I have never seen my team leaders and project managers to bully people working under their supervision. Personally, I have made a lot of mistakes last in five months. But my project manager had never been harsh with me. Blaming others for their mistakes does not solve the problem. It only makes the situation and the relationship between coworkers worse. My team lead always encouraged me in case of success and helped me to fix the problems in case of any failure.

8.2.5 Dedication for Work

I joined SELISE as an intern and the core purpose of my joining there is learning. So dedication for work is an important issue for an employee at work. Each person need to perform his assigned work within deadline.

8.2.6 Attitude

As an intern the attitude of my seniors attract me very much and I always try to follow them to be a successful Software Engineer as well as a successful man. They always know what to say and how to say, what is the right time for decision making or a change. Their entire attitude towards their profession, team members and most important their work influenced me a lot.

8.2.7 Negotiation

Negotiation is an important part of software engineering. We, the developers here, negotiate with our product owner quite often here. It is a good side of SELISE that all the team members are allowed to give their opinion about a specific problem. The whole team then comes together to a optimized solution of their problem. Negotiation with seniors is treated as knowledge sharing here.

8.2.8 Planning

Planning at the starting of a day is a professional practice. I have seen all my seniors start their day by planning all their tasks for that specific day. Our product owner always emphasizes us to resolve our blocking issues with one another at the starting of the day. It helps us to be stick to our sprint planning activities.

8.2.9 Attendance and Punctuality

Punctuality is another important issue in professional life. Every person need to attend the meetings on the exact time. if anyone becomes late for a meeting he/she is fined by a specific amount. The fine

system helps everyone to attend the meeting on time. At every sprint planning meeting I need to reach office before 10.30 am and at scrum meeting before 11.15 am.

Chapter 9: Self Assessment

9.1 Overview

In the following part I will represent my viewpoint on my achievements as an intern. I will assess my abilities that I gained and nourish through my internship program. As part of intern evaluation a form was sent to SELISE which is fill up by my supervisors. I would assess myself on the base of those skills.

9.1.1 Attitude

I always keep a positive attitude in the office environment. I always become involved in the project more than it needs. I always take tasks from my team lead which is good for myself, company as well as it carry out the responsibility that IIT has given me to represent it. So I have always been enthusiastic in my work.

9.1.2 Ability to learn

I have been worked in a dedicated team for last four months. So I always give my try best to get knowledge from my team leads. Every day my team lead gives me some interesting jobs and gives me tricks to solve them. So I am very thankful to my full team specially my team lead for helping me learning things exceptionally well.

9.1.3 Dependability

At SELISE I was assigned a small assignment at the very first day of my interview. I completed that in time. On the very first day of my office I was assigned another small project. My supervisor found me sincere in those projects so I got the chance to be assigned in a real life project within a month of joining SELISE. They found me fully dependable and I am trying my best to carry on my image.

9.1.4 Initiative

I always take initiative to be assigned new challenging works. Thus at the time of sprint planning I consult with my supervisor to assign me in my interested task. So I got chance of working in multi tenancy system, dynamic routing, server configuration, database creation etc. I found myself doing my work at own responsibility without pushing.

9.1.5 Quality of work

I have been told many times by my team lead that my quality of work is good. I would say the reason behind this is some courses of IIT like design pattern, software requirements specification which taught me finding out requirements at the very starting level of development and doing clean code.

9.1.6 Relationship with others

I always respect all my colleagues and consider them as my family members. I participate with them in team events, seminars, hangouts and annual trip which make my bond with them stronger.

9.1.7 Maturity-poise

I have always been confident about myself that if I try to do something, I will succeed. And IIT also triggered this confidence in me by giving proper guidance and direction.

9.1.8 Quantity of work

As I mentioned above I have done most of the important features of our CMS project like multi tenancy system, dynamic routing, server configuration, database creation, dynamic routing etc. So my team lead always encourages me and gives me the responsibility of important tasks.

9.1.9 Judgment

I did not have much decision making situations in SELISE. But I took decisions in case of choosing optimized solutions and solving problems.

9.1.10 Overall performance

I have spent about five months at SELISE. I have done lots of works, take part in various decision making activities and perform all my responsibilities towards my work and company.

So I would say my overall performance at SELISE was outstanding and working is fun there.

Chapter 10: Conclusion

The Internship program has enabled me to gain important knowledge on software industry, their culture, work environment and all about software development. I feel proud to be a part of this valuable program of our academic syllabus. The credit also goes to our honorable teachers mainly **Dr. K.M. Sakib** and the other faculties for such a successful completion of the internship program.

Because of this program I got chance to get proper guidance from our CTO, **Shah Ali Newaj Topu** and my team lead, **Md. Jonayet Hossain**. They not only give me the right direction for surviving in industry but also share their valuable knowledge with me.

The internship program has increased my team work abilities as well as respect to the team mate's ideas and suggestions. Team discussions like brain storming sessions helped me identify and solve numerous challenging problems.

I would like to convey my thanks to IIT, DU for providing me an opportunity to gain idea of the competitive environment in the professional field. It has lifted my software development skills and provided a highly attractive addition to my CV.

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