ADAMA SCEINECE AND TECHNOLOGY

UNIVERSITY

SCHOOL OF ELECTRICAL AND COMPUTER

ENGINEERING

DEPARTEMENT OF COMPUTER SCINCE AND ENGINEERING (CSE)

NAME OF   DEPARTMENT   DIVISOR'S : -MR. KIDANE

INTERNSHIP HOSTING COMPANY:-Information networking security agency (INSA), Addis-Ababa

DURATION OF THE INTERNSHIP:-From july1st- August 30th

NAME OF IMMEDIATE SUPERVISOR IN HOSTING ORGANIZATION :- Ms. Wuberest Mengistu

Name of the students: Id_No

1. Mengistu Abebe   (R/00688/07)
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Date of submission: October2/2017

Date of report or presentation: October 3/2017

Declaration

we, project member's hereby declare that the presented report of internship is uniquely prepared by us after the completion of two months' work at Information Network Security Agency, INSA.

We also confirm that, the report is only prepared for our academic requirement not for any other purpose. It might not be used with the interest of opposite party of the corporation.

project member's

R/00688/07 ,R/01024/07,etc…….

School of ElectricalEngineering and Computing

ASTU

Acknowledgment

Executive summary

This report is written to summarize our overall internship experience at the information network security agency. All aspects like background of the company, overall internship experience, benefits we gained from this internship program, and finally with a conclusion and some recommendations we have for the company.

Our internship program were at information network security agency (INSA). We started working one weeks late because the company was not ready for us. July 12 was our first day of internship work and INSA information and communication chairman inform ours about what are there for internship students that we can do at the institute. The next couple of days many representatives from different departments of the company came and explained what their departments is working on.so that we can chose the department which best suited us.

Because wewere studying at the software development stream we chose to work with software development department. Then a brief description was given to us about the department. Our department leaders told us will be helping out on the project of employee management system. We were introduced to our team adviser. She gave us assignment to read about java frameworks like enterprise java bean(EJB) and prime-faces for user interface .

After completing the requirement gathering mainly on functionality of our project's and non-functionality of our project's and after completing the database design, we started to implement the business logic of our project. Since the business logic was new to us, we were given a few days of training after that dived to action. We built the project form bottom up. The bottom being the database and the up being the user

interface. In between we used the java enterprise application architecture. Following this architecture as a framework, we used the enterprise java beans technology to implement our business logic. Enterprise java beans are server side components on which our business logic were encapsulated. So here each functionally we intend to include in our project was implemented.

The final task was to write the final report which was the collection of all the work we have done throughout the two months, since we were used our time properly and our mentor was helpful while doing this report, putting the report together was not difficult

To sum up, during this internship apart from the theoretical knowledge and skill we gained, which we mentioned above, we learned valuable work ethics like punctuality, independence in work, even though we worked in teams there was a lot of time were we have to divide our jobs and work individually, and skills that are essential to our future carrier and do this skills with accuracy, speed and corporation with colleagues.

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1.Introduction

1.1. General over view of the internship

The main aim is to gain or share experience form different company based on our knowledge.

1.2. Scope of the work

First we were chose   software department   among different department after that our immediate supervisor   give us project title based on that,

we try to gather requirement mainly on functional and non-functional requirement and we were design database after that   we were tried to implement the project.

1.3. Expected outputs

The expected output were :-

✧   Employee registration

✧   System admin,fiance admin and employee can login in to their pages

✧   System admin can search employee profile and update his/her profile

✧   Record leave employees

✧   employee attendance system

✧   Payment system

2.1   Company Background

As It has become necessary to ensure the security of advancing critical infrastructures and industries of the country that are vulnerable and going to be more vulnerable to an attack due to their reliance on computer, It has become necessary to protect the cyber space which is created by the local and international computer networking, so as not be a national security threat. Whereas, it has become necessary to establish a strong institution that coordinates national efforts to realize the security of information and critical computer based infrastructure and capable to implement national cyber security policy and strategy effectively. So the federal democratic republic of Ethiopia established the Information network security agency. Again in 2013 it was reestablished with a proclamation number 808/2013. In this proclamation every aspects computer, networks, attacks, cyber and so on are clearly stated.   Also

Information network security agency was reestablished as an autonomous federal government agency having its own legal responsibility and shall be accounted to the prime minster.

The objective of the agency shall be to ensure that information and computer based key infrastructures are secured, so as to be enablers of national peace, democratization and development programs.

2.2. Mission

- To build national cyber power capable of protecting the national interest.

- To provide technical intelligence pertaining to national interest so as to support decision and actions of the government.

- To build data and computing capacity so as to ensure the transformation of the national thigh-tech and security industry.

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Vision 2025

- Realizing a globally competent national cyber power which plays a key role in the nation's renaissance.

Value

- Trust worthiness
- Continuous learning and development
- Making difference/ adding value
- Transparency / Accountability

Organizational culture

- Democracy

- Dedication
- Learning and development
- Cost effectiveness.

2.3.Main services products, Customers and end users

The agencies main duties and services are:

- Develop and implement research and study based information and computer based critical infrastructures security products and services.

- Draft national policies, laws, standards and strategies that enable to insure information and computer based key infrastructures security and oversight their enrollment upon approval.

- Support public and private institutions to formulate their own policies and standards in compliance with their national information security policy and standard frame work and mentor their implementation.

- Take all necessary counter measures to defend any cyber and electromagnetic attacks on information and computer based infrastructure or systems or citizens psychology.

- Conduct information or computer based critical infrastructures security audit at any time and provide for those that meet the criteria, security standards approval certificate or delegate other bodies to perform such functions.

- Organize and administer a national computer emergency responding center.

- Provide assistance and support in respect of preventing and investigating cyber-crimes to police and other organs empowered by law.
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- Conduct digital forensic investigation without physical presence or conduct same with physical presence upon court warrant and in collaboration with the police on computer and infrastructures

that are purported to be attacked or sources of attack to prevent attacks and provide early warning to citizens.

- Regulate cryptographic products and their transaction, set necessary criteria and develop operating procedures and implement cryptography infrastructures.

- Serve as a national "root certificate authority" to perform the functions provided above.

- Control the import and export of information technology information sensor and information attacking technologies.

- Build information security testing and evaluating laboratory

- Develop and administer national spatial data infrastructure and via spatial data collecting technologies.

- Collect, analyze, store and disseminate any kind of geospatial data. Take necessary measures to mitigate vulnerabilities and risks that could occur while collecting, storing, analyzing or disseminating of the data.

- Collect analyzed and disseminate to the concerned authorities information on selected trans-boundary national security threat activities and provide support to security organs.

- Develop and implement secured information management infrastructures and systems where domestic capacity has not yet created. Charge commensurate fee for products and services it provides

- Design and provide education and training programs regarding information and computer based critical infrastructures' security in its own training center or in collaboration with concerned bodies.

- Provide security products and services to foreign partners upon the decision of the government.

- Establish international collaboration when it is necessary to implement its mission.

- Own properties enter in to contracts sue and be sued in its own name.

- Perform such other related activities conductive to the full fulfillment of its objective
  In general the information network security agency gives the following services.

  o Software development

- Hardware programming
- Networking
- Network security and more

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2.3 Organization and work flow

The agency shall have:

- A director general and as maybe necessary deputy director generals to be appointed by the prime misters and necessary staff

Power and duty of the director general

- The directory general shall be the chief executive officer of the agency and shall direct and administer the activities of the agency.

- Without limiting the generality of the provision of the above the article or duty the director general shall:

  - Exercise the power and duties of the agency

  - Employ and administer employees of the agency in accordance with a directive approved by the government.

  - Prepare the work program and budget of the agency and implement same upon approval by the government.

  - Effect payments in accordance with the approve budget of the agency.

  - With prejudice to limitations to be provided for by regulation, designate profiles of the Agency's personnel, certain financial documents, equipment, methods, work outputs and

plan and strategy documents as top secret and make them inaccessible to anybody when he as a reason to believe that national security will be at stake upon leak.

- o Represent the agency in all its dealing with third parties

- o Prepare the performance and financial reports of the agency and submit same to the concerned organ.

- The director general may delegate parts of his powers and duties to other officers and employees of the agency to the extent necessary for the efficient performance of the activities of the agency.

3.3 Over all Internship Experience

It's very challenging to find internship hosting company because of many reasons. we were assigned to INSA by the industrial linkage office taking consideration of our grades, we heard that INSA is a great place for interns. The scale and experience of the staff, the field of areas the company covers, which is nearly every aspect of engineering, their separate training center just for interns and fresh graduates made INSA rise among the crowd and which made us very happy to be assigned there.

On the day we were supposed to start the internship, which was already late from actual internship start day, what we did was go to their head office with a couple of student who were assigned like us which was located around Bisrate Gabriel.   we went to there with our ASTU ID and the letter given to us by the linkage office. But we were told that they were not ready yet and we would have to wait for their call. After a week we received a call that they were ready for us and we should start Thursday . Which was July 8 and late almost one weak.

        As we said above the company has many sections that are open for inters to work on. All the sections were introduced to us on our first day. we were hoping we would get in to the software development department.

Aswe mentioned above throughout our internship program, which was two month, we worked based on the schedule given to us as the table below. we highly admired this schedule because we believe working with a schedule is a great way for time management.

EMPLOYEES MANGEMENT SYSTEM TRAINING FOR INTERN'S STUDENT

ACTION PLAN

No	Main tasks	Activities	Action time	Our responsibility	To our advisor	
1	Requirement gathering on Employee management system	Mainly on functional and non-functional	For 4 days	Collecting requirements	Reading & Presentation	
2	Database design	Data modeling of *conceptual *logical *physical	For two weaks	Design conceptual,logical and physical	Reading & Presentation	
		Of data modeling				
					Reading & Presentation	
3	Reading EJB java frame work for server sided and prime faces in addition	Reading EJB java frame work for server sided and prime faces in addition	For 8 days	Reading and makng practice on the EJB and primefaces environment	Reading & Presentation	

	bootstrap for user interfaces	bootstrap for user interfaces			
4	Implementation of employee management system		For two weaks	Implement the projects using EJB and prime faces also by bootstrap	Final implementation & presentation	

Figure 1: schedule for our internship program

The group included only four persons mengistu abebe,kirose abeye,yilkal fikere and haymanote ------. And as mentioned we worked based on the above table.

3.1. How we got into the company

There was an invitation by Mr.melese   to join a project on software defined networking and he told to write a small report on general concept of software defined networking for those who want to join the project and we write such a report and email to Ms.wubrest mengistu and after reviewing it we got accepted to join the project.

3.2. Procedures we have used while performing our work tasks

To meet the given weekly tasks the procedure

✧   we try to collect Requirementsfor our project

✧   we read some resources

✧   we read different requirements

✧   During internship main resources were videos and different web pages.

✧   We tried   to generate report for our project

✧   We select functional and non functional requirement

✧   We tried to draw ERDIAGRAM on ERSTUDIO
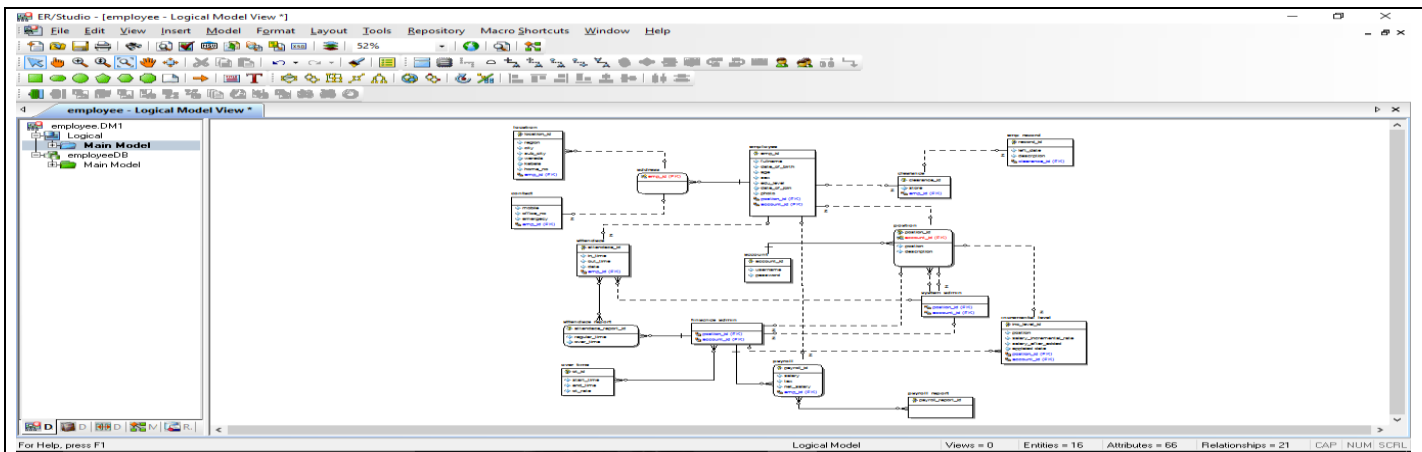
◇ We were install oracle database on their pc

◇ we were changed logical model to physical model

◇ Then we were create java project and connect to the database

◇ After that we were design the interface based on the the requirement need

◇ Then we were finalize the project

3.3. Challenges we have faced while performing our work tasks

◇ To be honest we have faced different challenges during this internship

◇ The first challenge we faced was we was unable to get the concepts of the JAVAEE and EJB frame work.

◇ we haven't had that much of javaee knowledge.

◇ The second kind of challenge was while installing different programs. Most of the programs were dependent in some other program.especially oracle database.

◇ The third king of challenge we faced was the working environment even though we asked for office we couldn't get one so we were mostly work in the internate .

3.4. Measures we have taken in order to overcome these challenges

we have tried to solve most of the problems. To fill the knowledge problem about EJB framework and oracle databasewe have tried to read different websites and books. we have also tried to see different

video and to overcome the working environment problem we tried to use our home and to get faster internet connections we working during night times.

4. OVERALL BENEFITS YOU GAINED FROM THE INTERNSHIP

4.1 In terms of improving our practical skills

- Internships are very important part of our academic years because of many reasons some of them can be

  - ➢ Gain exposure to real-world problems and issues that perhaps are not found in textbooks

  - ➢ Cultivate adaptability and creativity in a dynamic world

  - ➢ Increase marketability to employers

  - ➢ Evaluate specific companies or specific careers prior to committing to full-time employment-a "try before you buy" type experience

  - ➢ Ease transition from being a student to entering the workforce

  - ➢ Increase opportunities within a company for faster advancement and growth

  - ➢ Increase self-confidence in the workplace while developing an expanded network

  - ➢ Have resume-building experiences while applying academic concepts and principles.

  - ➢ Have personal growth experiences and exposer to different job opportunities.
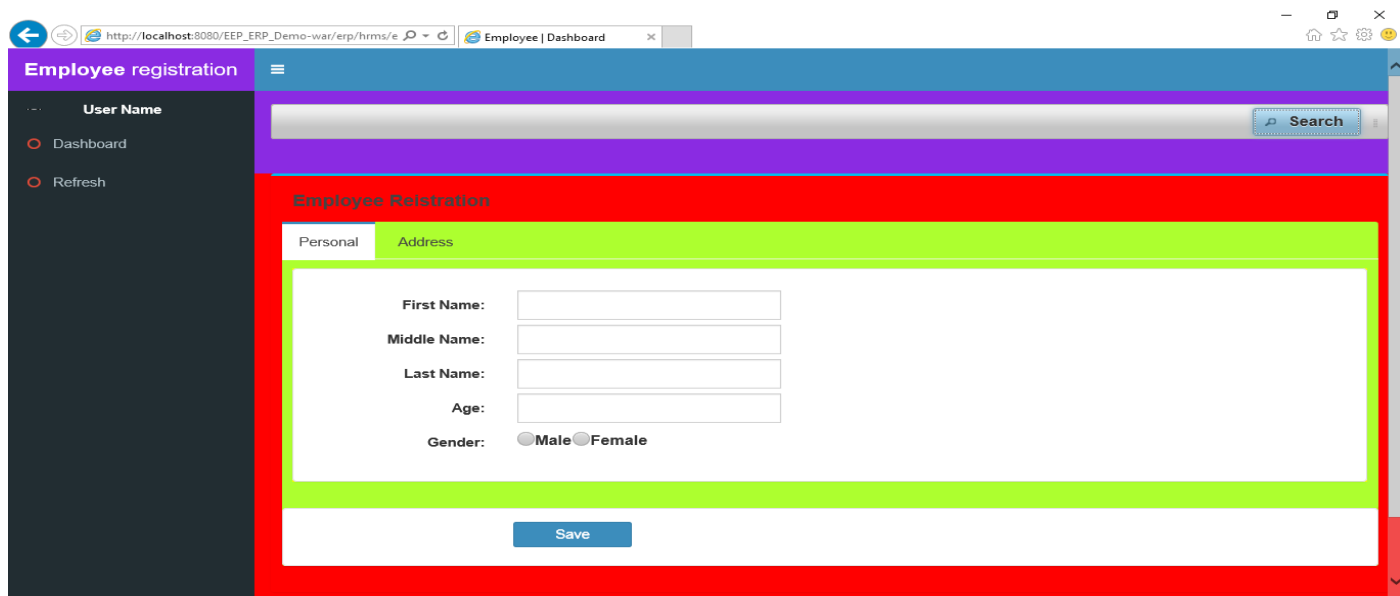
- In terms of theoretical knowledge we can say we gained huge amount of knowledge since what we worked on were a research.

- We observed the personal style of supervisors and colleagues and tried to identify clear examples of interpersonal mannerisms and leadership styles that seem to promote good working relationships or hinder a productive work environment. We paid attention to how, supervisors, and colleagues deal with pressure, tension, and praise in work relationships. How to communicate and so much more. Not only is an internship a great way to get experience, it is a great way to make connections in any field. It's a way of meeting as many people as possible while during internship. During our internship program we got to know our immediate supervisor who was also our mentor's got to meet different people with variety of roles and from other departments. we got to research information interviews. Which is intended to provide with an opportunity to gain valuable information from professionals in our field.in which case our mentor and some persons who works at INSA were more than happy to provide professional information and advice. And we can say that the peoples especially with our mentor we have a good interpersonal relationship because of that he got to encourage and support learning aspect of our internship program. And the relation with the coordinator was also good because we have a good interpersonal relations. We go to him whenever we need available equipment's, supplies and necessary space.

5. Our final project demonstration

➢ Employee,system admin or finance admin can login into their pages
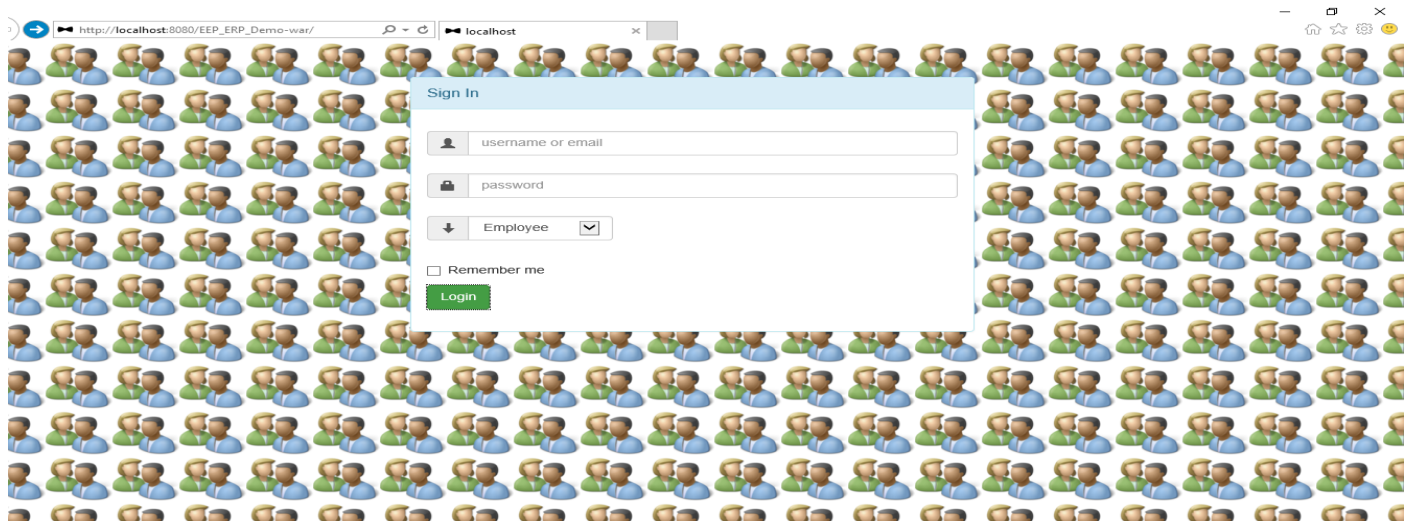
➢ System admin home page and can register employees

➢ System admin can search employee and update his/her profile

CONCLUSION

The past months of our internship have been very instructive for us. INSA has offered us opportunities to learn and develop our self in many areas. We   gained a lotof experience, especially in the database design and steps of implementation . A lot of the tasks and activitiesthat we   have worked on during our internship are familiar with what we are   studying at themoment. We   worked in many areas where we did different work. This gave us thechance to find out which areas we want work in after our education. The area that we found most interesting is database design and implementation . By working on a project on employee management system, we learned many new technologies and gained a lot of knowledge.

Before our internship started our ideas did not match the experiences have gainedduring our internship. There is a big difference in the school projects and the tasksand activities during the actual work. In school we learn how to describe the work inprojects, where in work you learn how to implement them in reality. This internshipwas definitely an introduction to the actual work field for us. we have learned to workin a organization and apply our knowledge into practice. We learned a lot from the different interns that we have been working with during our internship. Each intern had a different educational background and that made itinteresting for us. By working with them we got to learn from them and become aware educational background. Our mentor during our internship was Mr binyam who we   have also learned a lot

from during our internship. We   reallyenjoyed attending this event and was definitely experience to remember.This internship was definitely beneficial for us and we are grateful and thankful that we got to experience and learn many things.

Reference

- ✓ **Some slides that given by our immediate supervisor**

- ✓ **Different video tutorials on YouTube**

- ✓ **Some books like EJB 3in action author duba panda,reza rehaman**

- ✓ **Tutorials points website**