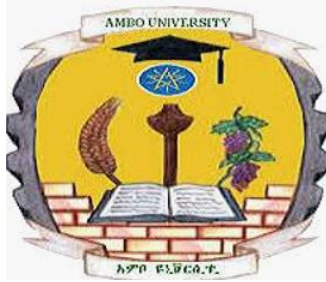# AMBO UNIVERSITY HACHALU HUNDESSA CAMPUS

INTERNSHIP REPORT

A report submitted for the Award of Degree of

BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE

by Adugna Tefera

ID: TUGR/7001/13

Under Supervision of

Mr Daniel Asefu

Hosting Company: ASTU-ICT Directorate Software Department

Duration of Internship stay: [Duration: 21th july, 2022 to 21th Sept, 2022]

Adama, Ethiopia

Date 08/09/2022 GC

ACKNOWLEDGEMENTS

ADUGNA TEFERA

(TUGR/7001/13)

EXECUTIVE SUMMARY

As I have assigned by the department of Computer Science to work as an intern in the offices related to our field of study in order to apply my theoretical knowledge, and skill that i got from our 3 years of education in our university, i have been working as an intern in the ASTU ICT Center software development team from july 21, 2022 until Sept 21, 2022**.** The overall analysis of my work experience during the internship program is explained in this Report Paper.

Most Computer Science students face difficulties on how to convert the theoretical skills they have to the real world practical skills, so that they can apply the knowledge and skill they get during their university experience to solve problems and come up with technological advancements. I have found this internship program very helpful for me to overcome the above problem and to be qualified for working in companies effectively.

My internship report paper work is consisted of 4 main parts. In the first part i briefly introduce my hosting company ASTU ICT center. I described the company's brief history, company's main vision and aim, main customer of the company and over all organization and workflow of the company. In the second part of the report i have covered about over all internship experience including; how i get into the company, in which section i have been working in, the work task i have been executing in the company, and the challenge i faced in the work place, how i solve the problem and procedure i have used to complete the task. The third part describes the benefit i get during the internship program in terms of practical skill, theoretical knowledge, inter-personal communication skill, team playing skill, leader ship skill and entrepreneurship skill. The fourth part is about the project i assigned to work on which includes; problem identified and solution proposed, methods and tools used to achieve the project, system design, final result and sinpet codes of the project. And finally conclusion is written.

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List of Acronyms

ASTU --Adama Science and Technology University

ICT --Information Communication Technology

NTC-- Nazareth Technical College

NCTTE --Nazareth College of Technical Teacher Education

TVET--Technical and Vocational Education and Training

PhD --Doctor of Philosophy

MA/MSC- ------------------------------------Master of Arts/Master of Science

FTI---Further Training Institute

GTP- ---Growth and Transformation Plan

ICDE- --Institute of Continuing and Distance Education

ER---Entity relationship

ICT-- Information communication technology

PHP -- Hypertext PreProssecer

XAMPP--Window Apache Mysql PHP

HTML--Hypertext Markup Language

CSS--Cascading Style Sheet

DB--Database

GUI --Graphical User Interface

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CHAPTER ONE
BACKGROUND OF ASTU

1.1 Historical Overview of ASTU

Adama Science and Technology University (ASTU) were first established in 1993 as NTC, offering degree and diploma level education in technology fields. Later, the institution was renamed as NCTTE, a self-explanatory label that describes what the institution used to train back then candidates who would become technical teachers for TVET colleges/Schools across the country. In 2003, a new addition to NCTTE came about introduction of business education. Nonetheless, the new entries were solely meant for similar purposes these graduates were also expected to help overcome the existing dearth of educators in vocational institutions.

Although it is an institution with a history of only two decades, ASTU is known for its dynamic past. It has always been responsive to the realization of national policies: training of technologists at its infant stage, and later shifting to training of technical trainers, as well as business educators, to fill the gap in TVETs. Following its inauguration in May 2006 as Adama University, the full-fledged university started opening other academic programs in other areas an extension to its original mission.

However, it was not until it was nominated by the Ministry of Education as Center of Excellence in Technology in 2008 that it opened various programs in applied engineering and technology. For its realization, it became a university modeled after the German paradigm: it not only became the only technical university in the nation, but also the only one led by a German professor.

Notwithstanding closure of some disciplines as per the new vision and mission, the ensuing three years saw flourishing of graduate programs, of which some (like a few in the undergraduate program) were exceptional to our university. The same period saw pioneering of the university in introducing PhD by Research and MA/MSC by Research programs. Before 2008, the university was stratified into faculties, and ASTU's reach was limited to its only campus in Adama town. The university has now extended its reach to Asella, where two of the total seven schools are

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program) were exceptional to our university. The same period saw pioneering of the university in introducing PhD by Research and MA/MSC by Research programs. Before 2008, the university was stratified into faculties, and ASTU's reach was limited to its only campus in Adama town. The university has now extended its reach to Asella, where two of the total seven schools are located. The faculties at the main campus include: School of Business, School of Engineering and Information Technologies, School of Humanities and Law, School of Natural Sciences, and School of Educational Science and Technology Teachers Education. On the other hand, the two schools in Asella are the School of Agriculture and School of Health and Hospital.

In addition to its main concern (academics), ASTU is also host of research Institutes and enterprises. In the main campus, apart from the Institute of Continuing and Distance Education (ICDE), there exist two others: the Further Training Institute (better known as FTI) and Adama Institute of Sustainable Energy. The sister town where the two schools are located, Asella, is also host to the Artificial Insemination Institute and Asella model Agricultural Enterprise.

Following its renaming by the Council of Ministers as Adama Science and Technology University in May 2011, the university has started working towards the attainment of becoming a center of excellence in science and technology, thereby allowing for the realization of goals set in the Growth and Transformation Plan (GTP). To this end, a South Korean has been appointed as President of the University. Currently, ASTU is setting up a Research Park, in collaboration with stakeholders and other concerned bodies: one of a kind in the Ethiopian context. The university is also venturing out to the wider community and is currently engaged in various joint undertakings.

1.2 Objective, Mission and Vision of ASTU

Mission

The mission of ASTU is to provide ethical and competent graduates in applied science and technology through quality education, demand driven research and community service. ASTU also provides innovative knowledge to support the socio-economic development of the nation.

- Delivering world class education and training in strategically priority science and technology disciplines based on national economic demand.

- Conducting problem solving applied research to support the productivity and competitiveness of industries.
- Serving as a center of knowledge and technological adaption, innovation and transfer
- Building technical and managerial capabilities of industries and
- Becoming a national hub of science and technology

Vision

- ASTU aspires to be the first choice in Ethiopia and the premier center of excellence in applied science and technology in Africa by 2030.

Core Values

Core values of ASTU written below are the operating principles that guide the organizations internal conduct as well as their Relationship with their customers, partners, and shareholders

- Originality and Innovativeness
- Academic freedom and integrity
- Sense of belongingness and ownership
- Nurturing diversity
- Transparency and accountability
- Professional ethics
- Responsiveness

1.3 Service and products of ASTU

- E-learning services
- Video conference
- University-industry linkages
- VSAT communication with MOST and AASTU.
- Ethernet service network infrastructure (that connects ASTU to other universities).

- Networking and installation

- Website development

- Data center administration

- Software and hardware maintenance

- Maintenance and assessment of ICT equipment

- Community data center service

1.4 Main customers and end users of ASTU

- Students of the university
- Teachers of the university
- Other university's community
- The society around the university

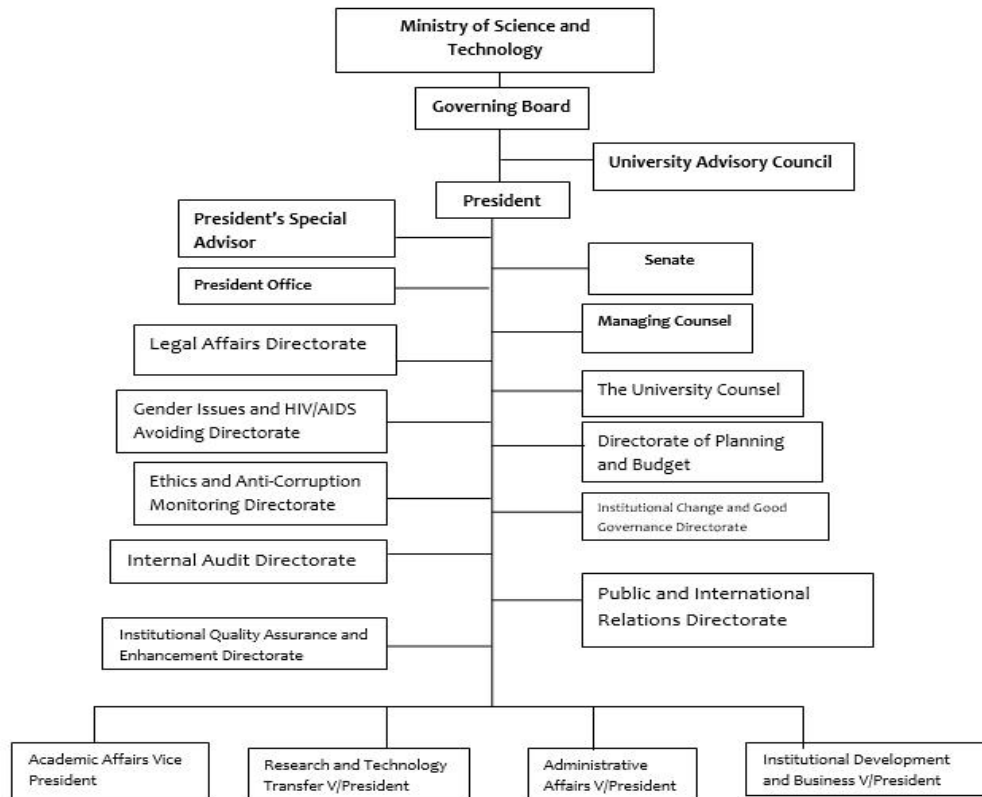## 1.5 Overall structure and work flow of ASTU

Figure 1 Overall structure

CHAPTER TWO

OVERALL INTERNSHIP EXPERIENCE

Generally the Internship Program gives me the opportunity to link theory with practice, to see the capacity how i can make a solution for real world problem, to be part of the modern technology development. During my internship program i have gained so much experience and technical skills on web based system development, application development and website design as well. I had a great encounter to the working environment of our specific field of study.

2.1 How I get into the company

As i have been learning at the Ambo University Department of Computer Science I have the knowledge of Database designing, software development and any computer related tasks. So for the internship program I was looking for companies with related areas. So i have applied accordingly to the ASTU ICT CENTER .And they showed their willingness to accept me and then they gave me the acceptance letter. i arrived at the company on scheduled day july 21th and reported the letter that has given from our university. As promised on the confirmation form, they accept and encourage me to involve in all tasks to make the internship program more practical and fruitful.

2.2 Sections in the company I have been working

- ✓ As i have mentioned earlier in the company introduction part there are 6 teams under the supervision of the ICT center. Each team has its own tasks and working area. Under these teams, there are volunteers and interns participating in various projects. The main activity performed by the students on an internship program under the department of computer engineering are busily found in software development team. So I was assigned to work in the software development office under the supervision of our team advisor who is assigned for me. There are certain general activities performed by software development team. These are

✓ Developing application software for the Adama Science and Technology University, other Universities, governmental companies, non-government companies and also for individuals as the specification of the customers.

✓ Website developments for offices in ASTU and other companies.
✓ Giving technical support on the software design and development for students in the university

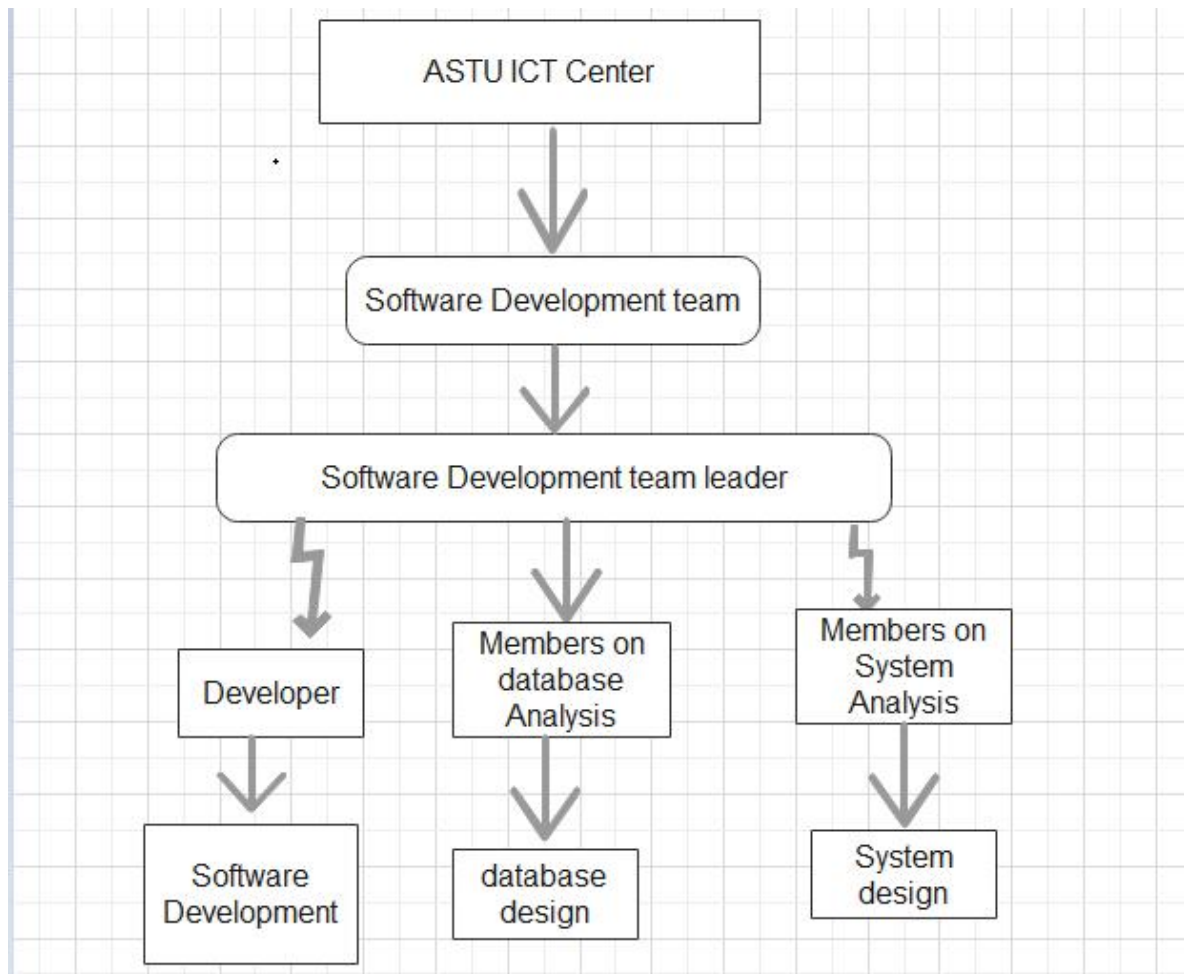## 2.3 The workflow in this section looks like

Figure 2: Workflow of software development team

2.4 The work piece of tasks we have been executing

By the time i start my internship program, the software development team was working on other unfinished software projects, After joining the software team and taking some guidance for 1 weeks, i started my contributions by developing a web based Plan Report Management System which is proposed by the team leader of the software development department. Since ASTU ICT center has many teams, offices and departments under it, the web based Plan Report Management System was in a high demand in order to introduce a digitalized system of reporting that can save time and advance the working environment.

2.5 Procedures i have been using while performing my work tasks

Before directly start my project I have asked our adviser to guide me on how the team has been performing diffident projects on software development area. After I clearly understand the procedures that have already being used by the team for so long, we have started performing the tasks accordingly. I have achieved my project by using the following procedures.

- **Gathering information:** First we gathered information about the project title from the team leaders, developers and other staff members. I got the information of how they used to report projects in the old report management system.

- **Preparing proposal:** I prepared a proposal for the project. Then I presented my proposal to my adviser. Our adviser gave me useful comments and suggestions on the proposal.

- **Prepare the software documentation:** I have reviewed the proposal by including improvements guided by my adviser. Then I prepared the software documentation.

- **System designing:** Then i start system design which includes database design , Software design and

- **Server side design and coding:** Next i start server side design and coding. i have instructed to use a Laravel framework for the project. i installed laravel and composer related setup.

- **Final presentation:** My final works are evaluated by our adviser and lastly i present the project for the whole team. I have been evaluated and suggested by the developers. I got so many constructive comments which provide us advanced insight on the area of study.

2.6 How good I have been in performing my work tasks

When I began the Internship program, my experience was almost to little. From the experience i had in campus, it was very difficult to engage and perform the tasks given to me by our team leaders because of mainly limitations in programming skill and practical work experience but after working hard and spending time with it, now i learnt how to work and knew the easiest way to accomplish tasks. I can say that Internship period helped me to increase my performance of work.

First i feared that i lack practical skill since it was my first time working in such environment. But, when i proceeded I was able to do the project and solve the company's problem successfully. I studied some user guides and search on internet to get information about new things I faced throughout the process. I had a good relation with our advisor and he regularly gives me comment to my work and I correct my mistakes in order to get good output.

- I had also improved team working skill by actively participating in team work. This had made me to increase personal confidence in problem solving and also coming up with new ideas during work and get some experiences of problem solving. I was also encouraged to be punctual when i perform my tasks. I presented my project to our advisor and to the software development team. According to their remark, they appreciated my effort that i have showed throughout the internship period and my success in the project.

2.7 Challenges I face during the internship period

During the internship period i face some challenges. These are:-

- ➢ **Programing skill:** Since I have no sufficient practical programming skill background in the University, It was not easy for me to get along with the tasks which basically require high programing language skills. The language and the framework that i have been working with was latest and i had no experience before, so it was like starting from the scratch. In addition, i had to teach my self through Internet and other supportive materials. Learning new programming language was the biggest challenge I faced during the internship period.

- ➢ **Time limitation:** The time I was allowed to work in the company is very short to get sufficient work experience. This has also limit the number of projects I can participate, and skill trainings held by the ICT department.

CHAPTER THREE

OVERALL BENEFITS GAINED FROM THE INTERNSHIP

During the internship in Adama Science and Technology University, I have gained a lot benefits from the internship experience throughout the 7 weeks of i stay. This internship program was an important occasion for me to develop confidence. I have presented my final project for all the staff and was remarked and given comments. I also asked different people in their areas of specialization. This, in turn, enabled me to communicate with different employees. Moreover, the internship had opened the opportunity to communicate with different positions in the company's hierarchy and such trends help me to have valuable work experience.

The overall benefits that i have been gained are grouped into different categories. Such as:

- Improving practical skills

- Upgrading theoretical knowledge

- Improving interpersonal communication skills

- Improving team playing skills

- Improving leadership skills

- Understanding about work ethics related issues

- Entrepreneurship skills

3.1 Improving practical skills

Theory is the basement of any activity for information technology. However, it is not enough by itself to know the real situation. It needs practical skill to carry out every activity within a project. In my internship program, i have developed my practical skill in many ways some of them are as follow:-

- How SRS is prepared for software development.

- Detailed Database design as the specification in designing a web application.

- Coding with different programing language for web application development.

After all when i join the real world, i won't be new for real world problems and the internship program was a great opportunity in improving practical skills.

3.2 Upgrading theoretical knowledge

When i worked on my projects, i referred different websites to upgrading my theoretical knowledge's or to have more information about what I was going to conduct. In short, i developed good theoretical skill about software development especially web application during the internship period. Theoretically i know some about the way of system development by the concept of database, PHP. But on the field of work I need to understand them to solve the problem by developing the software.

As a result:-

- I have upgraded my theoretical knowledge by reading courses that i have learned in the previous class to complete my project.
- In addition to academic theoretical knowledge, i have gained different theories in relation to different business related environment.
- I have also upgraded my theoretical knowledge on the important steps needed for designing my project.

3.3 In terms of Interpersonal Communication Skill

The internship has aims of improving interpersonal communication skill, since in the company there are different employers and labor workers, who interact properly with others, so that to give the desired end products for the customers, smooth interpersonal communication skills must be exist. During internship time the first thing would be communicate with employers and department managers. What we see during internship was the way of communication to be honest fully and respect for my customers. To get the desired response, our communication skill should be persuade others attitude.

After i know the advantages of interpersonal communication, i have begun communicating with each person who works in the company. But at the beginning of the internship, I communicated

hardly. This does not allow me to get things which i require to develop academic knowledge. After a certain day i developed my communication with each person also a good interpersonal communication skills are a pre requisite for many positions in an organization Therefore, the internship improves the interpersonal communication skills.

3.4 In terms of Improving team playing skill

I have understood that working as a team is very important to have different ideas and alternatives to achieve better solution. I have learned how different idea comes in one direction and difference is a best way to do better thing. A person with good team playing skill will upgrade the following:

- To help and co-operate with others
- To share ideas with workers openly
- To give comment the team and find possible solutions to the problems
- To increase the ability of active participation

3.5 In terms of Leadership skill

A leader ship skill is a critical management skill, which is the ability to motivate a group of people towards a common goal. During the internship period we develop a leadership skill by observing the managers, team leader, developer and each section employers of the company when they do their major tasks.

To develop good leadership ability, the following points are necessary:

✓ motivate company workers to do their task

✓ solve the problems which are raised by the customers

3.6 In terms of understanding about work ethics related issues

Ethics at work is very important. During my stay at ASTU, I have observed how the team treats customers ethically and how much it is important. Punctuality, honesty, being responsible for actions that I perform and other related issues needed at workplace are some of the ethical issues that i adapt. Some of the work ethics are as follows: -

- The office discipline
- Loyalty
- Honesty
- Cooperation
- Accountability
- responsibility
- Punctuality

3.7 In terms of Entrepreneurship skill

Entrepreneurship skills are making certain individuals able to create a new set of ideas that may help in the software development.

Entrepreneurship is an individual who organizes, manages and operates any enterprise, specifically business, usually with considerable initiative and taking of finance risk. Success full entrepreneurs have skill which increases the productivity of the organization. These skills are:

- Self confidence

- Self-motivation

- Time management, so that the internship has a great role to improve these entrepreneur skills.

CHAPTER FOUR

PROJECT

4.1 Introduction

Reporting of information is a critical process in any organization. Information is used to let stakeholders to know about the status of the project and it often involves multistage activities. The project managers need to treat the information as harvestable data which can be summarized and interpreted using reporting systems.

Report is a means of communication which is in written form and it is useful for management, for the purpose of planning, decision-making and controlling. The aim of the reporting process is to establish whether project objective have been achieved, what resource have been expended, what problem have been encountered, and whether the project is completed on expected time. This helps the company to understand where to make improvements and which of the project is succeeding at.

Back in the days workers used to submit report manually or by deliver the report in person. This way of report management system is very time consuming and relatively slow. So in order to advance the current reporting system of our company, we have come up with web based report management system.

In the web based report management system of ASTU ICT center every developer, team leader and administrator register on the website and have the access to write, view, update, approve, and submit a report. This will make the working environment very easy to access and improve efficiency.

4.2 Statement of the problem

For many years ASTU applied different system to track, monitor, report activities and accomplishment. For example ASTU ICT center software developing team uses Microsoft Excel spreadsheet platform for monitoring and reporting outcomes and impacts. This type of report management system has certain downsides such as:-

✓ Back in the days workers in a company must go to the offices in person in order to submit a report. They can not report where ever they are. This type of report submision wastes the time of the workers.

✓ It is hard to organize report in a way that is easy to organize and access previous reports easily. There is limited access to refer back reports of the past.

✓ It is not easy to communicate with the reporter to notify him if his report is valid or if there are things that should be improve in the report since the communication is in person.

The above problems show that the functionality of Microsoft Excel spreadsheet which is used in the ICT center for the past years, is limited to address the problem, So my project come up with web based plan report management system in order to solve this problem.

4.3 Objectives

4.3.1 General objective

The main goal of this project is to design a web based plan report management system that will be implemented in ASTU ICT department software development team.

4.3.2 Specific Objectives

To Assess requirements and specification

To Design database to store information.

To register new users easily.

Enable the software development team to propose and make changes on the project easily.

To manage the task of employee.

Secure report transmission between administrator and the team.

4.4 Scope

The introducing system, Plan report management system, which is going to be implemented for Adama University ICT center will automate the operation of reporting system of the center. This web based plan report management system provides users (developers, team leaders and administrator) to get registered on the web platform and gives the access to write report and submit to the team leaders and then to administrator. It is supported with a well-designed database. A friendly user interface is provided to facilitate different services such as login, generate, submit and update task report.

Although this system is designed for software team, we can make it available to all team since it is flexible.

4.5 Methodology and Tools

4.5.1 Methodology

Methodology specifies the method and technology used to develop the software system such as, the methods used to gather data, approach used to design the software system, software and hardware requirements used to implement the system. We have used the following phases:-

Data Gathering

Before i start the project I gathered information by interviewing the workers in the ICT center and team leaders of the department about the problem that they are facing on not using web based plan reporting management system and how the normal reporting process held in the company.

Requirements Analysis

Based on the data i gathered and information that have given to me by our advisor, I have set certain requirements that our project must meet. These are:-

i. Functional requirement

ii. Nonfunctional requirement

i. Functional requirements: - Detail description of what the system can do as well as input and Output of the System with respect to role of the actor.

The product consists of the following the functional requirements based on the role of the actors.

a) Developer

✓ can create new report

✓ can update his own report before approval

b) Team leader

✓ can create projects

✓ can create project activities under projects and assign it to developer

✓ can create report

✓ can update his own report

✓ can approve reports which reported by developers

c) ICT administrator

✓ can view and approve reports which is reported by team leader

ii. Non-functional requirements: - Describe user visible aspects of the system that are not designated to the functional behavior of the system. The requirement includes from user interface to resource issues.

Generally, Non-Functional requirements of the system can be viewed as follows.

a) User interface and human factors: - Since users of the system will interface with the software to be deployed on a personal computer. When we consider the user interface on the personal computer since there is going to be different type of users. Generally it will include the necessary features for each user with a user friendly and attractive interface

b) Security issues :- The system has login page it allow only the user who have privilege to access the system therefore the system can't be accessed by unauthorized user. When the user want to access the RMS they must be registered and sign in to the system. Each system users can access the system based on their access right.

c) Error handling and extreme conditions: - The system can handle errors encountered during run time like data duplication to save memory space error when user submit report without filling out the necessary information required on the field.

d) Performance characteristics: - Since the system is going to be accessed by different users with different needs, it should be capable of handling and processing their queries quickly and it is accessible at any time as far as the internet connection is available all the time.

e) Physical Environment:- The system is deployed or installed on the server side script but for more feature we recommend that the system to deploy on Adama university server that is free from any disaster.

4.5.2 Tools

Hardware Tools

- Personal computer (PC) or laptop: almost all tasks of our project are performed on computer.
- Flash: required for data movement.
- Ethernet cable: to connect with the internet.

Software Tools

- Laravel : PHP framework
- Free admin : Laravel template

- Xampp: Web server
- Chrome: Web browser
- VS code: Text editor

4.6 System design

System design is a process through which requirement are translated in to representation of software. Initially the representation provides the general view of software, subsequent refinement leads to design representation that is very close to source code .Design is a place where quality assured in the software development .It provides us with representation of software that can be assessed for quality this is the only way that can accurately translated the customers' requirements in to finished software product.

The approach I used in system design is unified modeling language (UML) in which it depends on the visual modeling of the system. Visual modeling is the process of taking the information from the modeling and displaying it graphical using some sort of standard set of graphical element that includes:-

4.6.1 Database design ER diagram

A basic ER model is composed of entity types and specifies relationship that can exist between entities.

Figure 3 ER diagram

4.6.2 Database table

Table ▲	Action						Rows	Type	Collation	Size	Overhead
activities	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	64.0 KiB	-
departments	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
employees	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
evaluations	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	64.0 KiB	-
migrations	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	10	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
password_resets	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
plans	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
progresses	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	64.0 KiB	-
roles	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	4	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
subactivities	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	0	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
users	⭐	🗏 Browse	🔧 Structure	🔍 Search	🖉 Insert	🗑 Empty	⊖ Drop	13	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
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Figure 4 Database table

4.6.3 Use case diagram

Use case diagrams are graphical representation of overview of behavior of the system. Use case diagram shows the relationship between the actors and use cases in the system. Technically the use case diagram helps in defining the boundary of the system. The most important role of a use case diagram is to communicate the systems functionality and behavior to the customer or end user.

Figure 5 Usecase diagram

4.6.4 Use case description

An Actor is an idealization of the external person, process or the thing interacting with the system. From the analysis, system's actors are identified as follows:-

➢ Head Office

➢ Developer

➢ Team leader

➢ ICT administrator

4.6.5 Usecase description using table

Usecase name	manage account
Participating actor	System admin
description	allows to provide functionalities to users
Entry condition	Admin must be login to the system to their own page
Exit condition	Every users account and system maintenance manages as required.

Table 1: Manage account usecase description

Usecase name	login
Participating actor	Head office, Developer, Team leader, ICT administrator
description	Any user who wants to access the system's functionality must be Authenticated and Authorized and login to the system.
Entry condition	The user must be already registered (the user must have user name, password)
Exit condition	The system user logged in to the system.

Table 2: Login usecase description

Usecase name	Create plan
Participating actor	ICT administrator
description	This use case helps ICT administrator to create any plan.
Entry condition	If there is new plan to be done.
Exit condition	New plan is created.

Table 3: Create usecase description

Usecase name	View Plan ad create Activitiy
Participating actor	Head office
description	This use case helps Head officer to view plan and create any activity.
Entry condition	If there is new plan to be done.then based on that new create activity
Exit condition	New activity is created.

Table 4 Create usecase description

Usecase name	View Activitiy and create Sub Activitiy
Participating actor	Team leader
description	This use case helps Team leader to view plan and create any Sub Activitiy.
Entry condition	If there is new activity to be done.
Exit condition	New sub activity is created.

Table 5: Create usecase description

Usecase name	generate and submit report
Participating actor	Developer, Team leader and head office
description	This use case helps Every developer,Head office and team leader to generate and submit a report
Entry condition	User must be login in to the system and if monthly or bi-annual report is required.
Exit condition	The required information on report is Filled and submitted.

Table 6: Generate report usecase description

Usecase name	Evaluate report
Participating actor	Team leader, ICT administrator and head office
description	This use case helps to evaluate a report according to efficiency of the activity.
Entry condition	The developer or team leader Must be Requesting for report approval.
Exit condition	The proposed report is approved.

Table 7: Report approval usecase description

Usecase name	update report
Participating actor	Developer, Team leader and head office
description	Helps to update the report if it is necessary.
Entry condition	if report needs to be modified
Exit condition	Report records updated as necessarily.

Table 8: update report usecase description

4.6.5 Class Diagram

The Class diagram captures the logical structure of the system; the classes and things that make up the model. It is a static model, describing what exists and what attributes and behavior it has, rather than how something is done. Class diagrams are most useful to illustrate relationships between classes and interfaces.

A class diagram is typically modeled rectangles with three-section:

Figure 6: Class diagram

4.6.6 Sequence Diagram

Sequence diagrams are used to model the logic of usage scenarios or the description of the potential way the system used. Sequence diagrams are a great way to validate and flesh out the logic of use case scenarios and to document the design of the system.
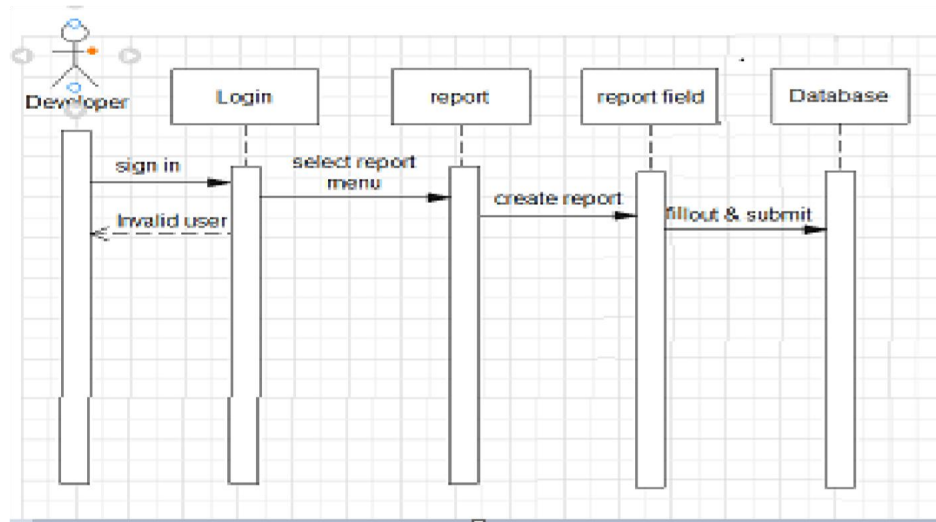
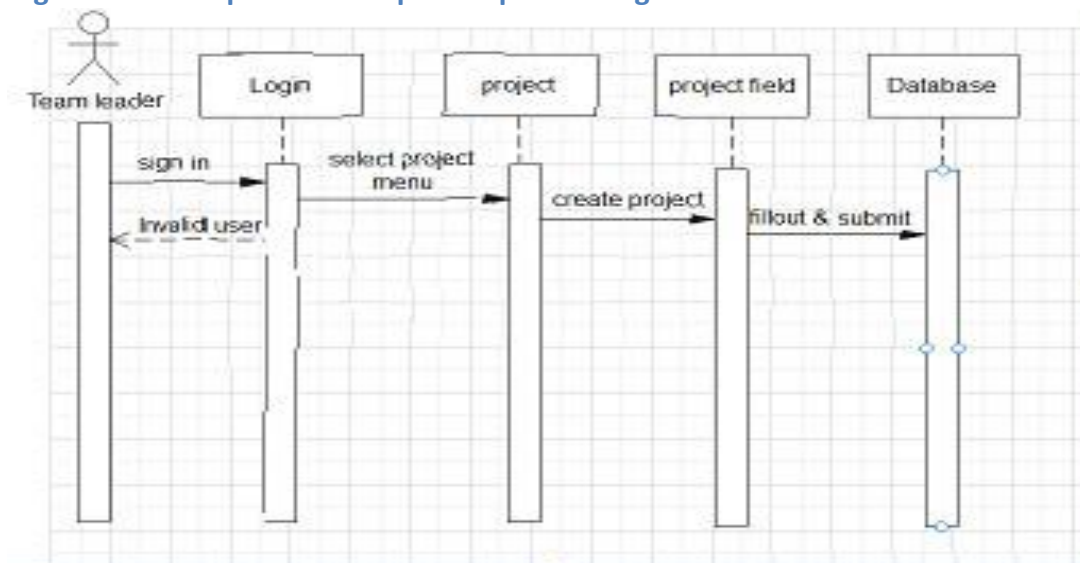**Figure 7: Developer create report sequence diagram**

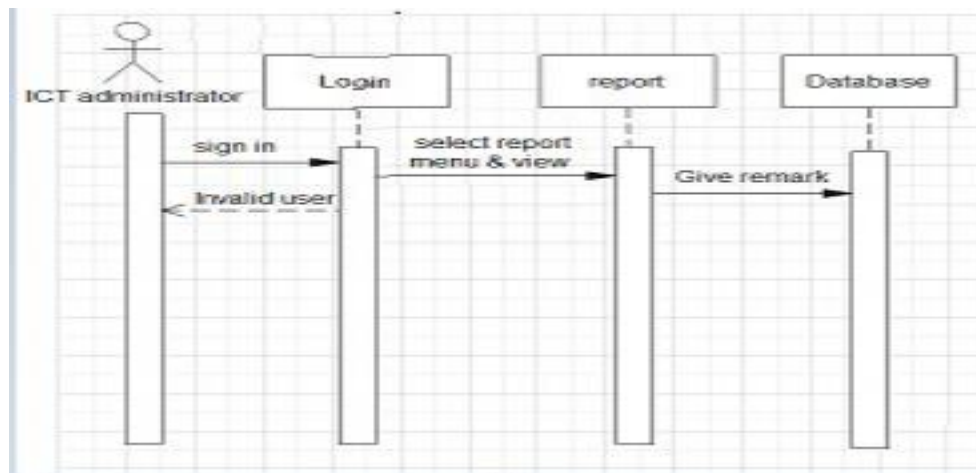**Figure 8: Team Leader create Activity sequence diagram**

Figure 9: ICT administrator give remark sequence diagram

4.7   Result

The final result of this project was a system that enables workers of the ICT center to get
registered and sign in in order to submit ,update ,approve and remark report in a web
based manner. I have used Laravel framework to do the project.

User Interface of PRMS

This section explains the user interface of the PRMS. It consists of the login page,
dashboard page,roles page, Plan page. **Login Page**
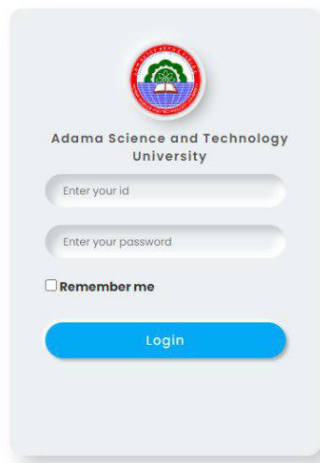
Figure 5 is the login page for the PRMS in *Laravel* on *Windows*.It is the default page that
is displayed after launching the application. Users provide their registered email and password to
access the PRMS.

Dashboard

Figure 6 is the dashboard page for the PRMS. After logging in, the user can access the
dashboard. The left navigation bar provides links to the dashboard itself, *User Management*
(*Roles* and *Users*), *Plans* List, Employee,*Change Password,* and *Logout.*
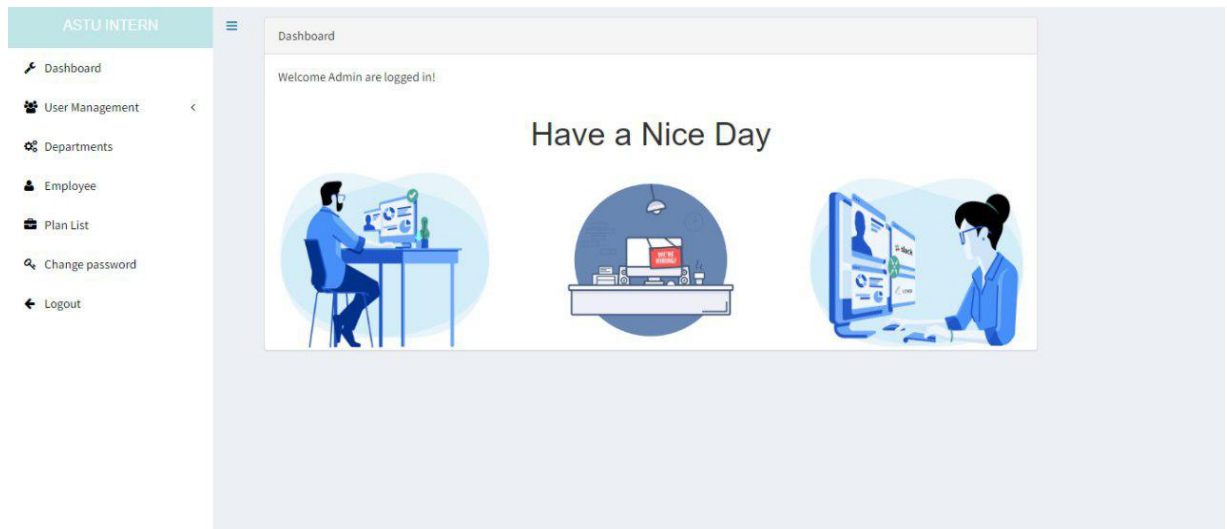
Figure 10 Dashboard Page of PRMS

Roles

The Roles page (Figure 7) lets the *Administrato*r add roles of the users that have access to the PRMS. The roles can be *Administrator* and *User*.
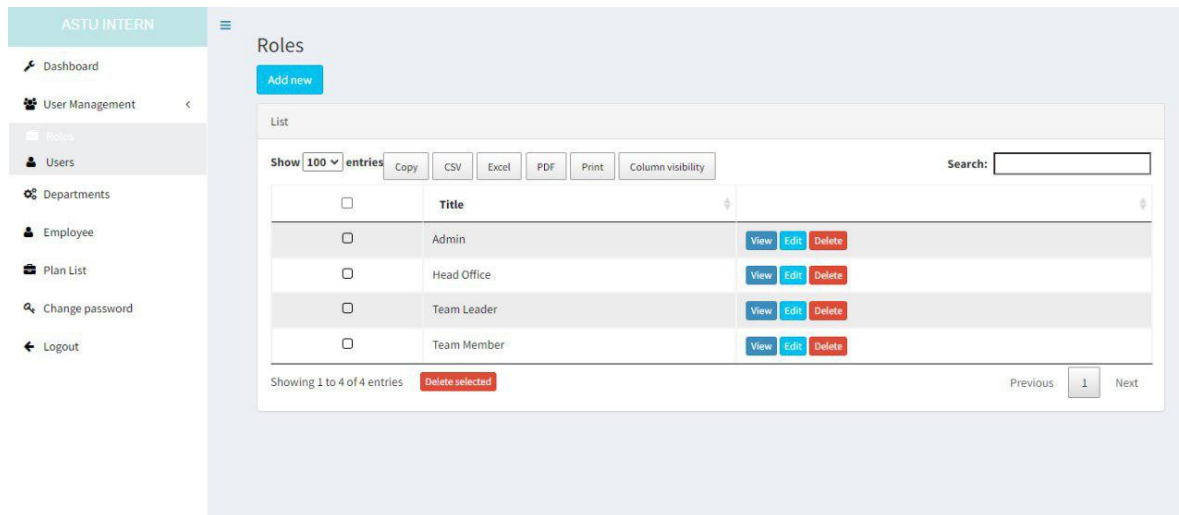

FIGURE 11 Role Management Page of PRMS

Users

The *Users* page (Figure 8) lists the users who were added to the PRMS. The admin assigns users according to the roles with associated permissions. Only users from the list can get

access to the system. The numbers from the *Role* column at the end is the type of access the user

has.

For example, the 2nd row with "Computer Science" is as the Role has the "Head Office" privilege.
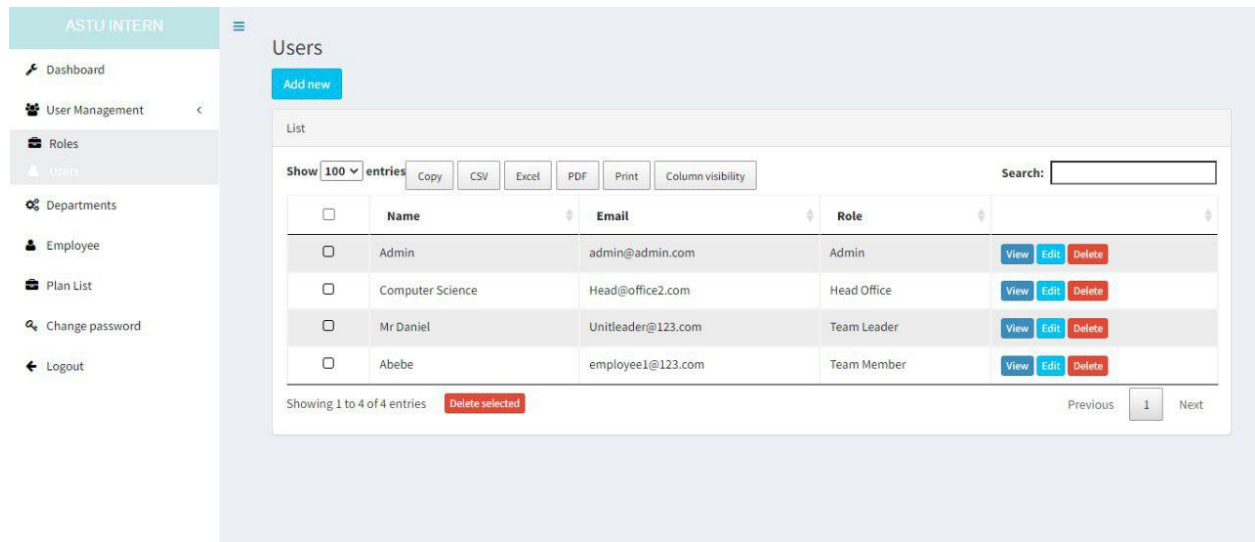
Figure 12 Registered Users in PRMS

The administrator can add new users and assign them roles with *Users* form (Figure 9).

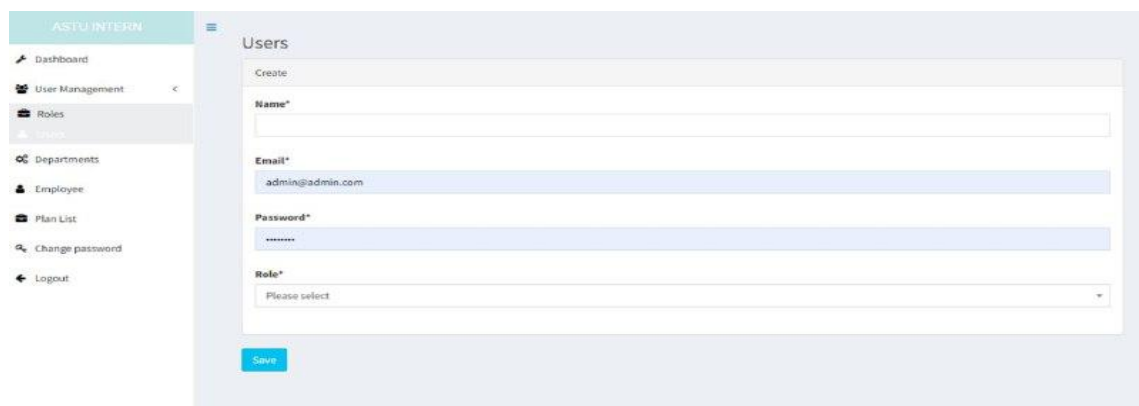The new user can then access the PRMS with the assigned privilege and the password.

Figure 13. Create User Form in PRMS

The *Plan* page (Figure 10) gives the list of Plans added to the PRMS. It provides the plan
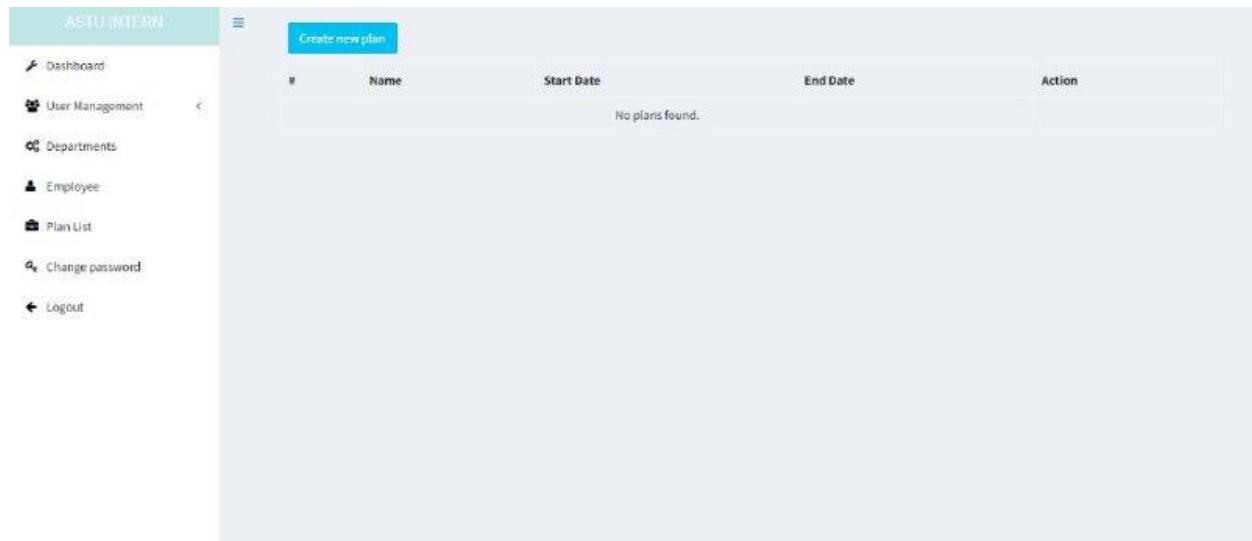
name, start date,end date and Actions.

Figure 14 Plan Page of PRMS

The new *Plan* page (Figure 11) lets admin add a new plan in the PRMS.

The Admin can select a name, start date,end date, select department and description for submit.

A: PRMS File Directory in Laravel

 shows folders and files of the SPMS in the Vscode editor for *Laravel*. Most of the content in the

figure is auto-generated. However, it is the developer's responsibility to modify, add and delete

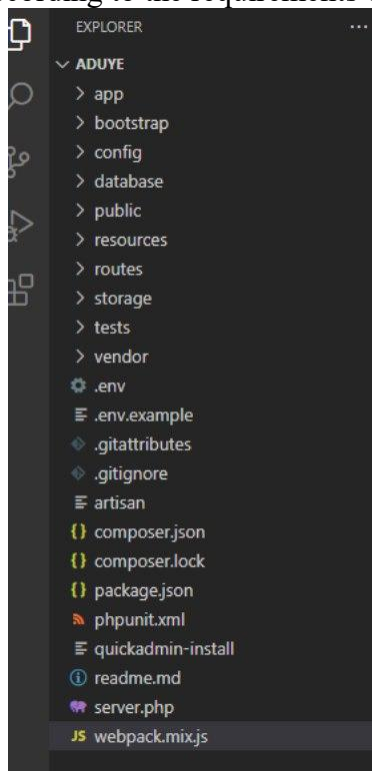files according to the requirements of the web application under development.

Figure 15 File Structure of the PRMS in the Visual studio code

Chapter Five

5.1 Conclusion

In the world full of ongoing digitalized systems and technological advancements, it is mandatory to be well equipped and have practical skill to be competitive. The internship period has provided me this opportunity to acquire practical knowledge and technological solution for real world problems. I get so many experiences by working in ASTU ICT center software development team. The team has highly skilled professional developers, very interactive working environment, up growing technical skills. I learned and grasped knowledge from practical point of view, improving our social skills, how to adapt in a different environment in this case at a work place and respecting the rules and regulation of the office. The internship program was an introductory exposure for the professional life. Moreover, it laid sound foundation for me to start a career. I take pride in contributing what is expected from me by doing the project for the company, and this made me to be self-confident to overcome the challenges I may face in my future endeavors.

References

[1] www.ASTU.edu.et