WOLKITE UNIVERSITY

COLLEGE OF COMPUTING AND INFORMATICS

DEPARTMENT OF INFORMATION TECHNLOGY

Project Title: Web Based Trade License Management System for Wolkite Trade and Industry Office

BY

Group Members	**IDNO**
1. Semira Mulugeta……	NSR/1298/12
2. Tamralech Birhi …….	NSR/1378/12
3. Nigist Sisay……	CIR/325/08

PROJECT ADVISOR: Mr. Fuad Yimer

Wolkite University, Wolkite, Ethiopia

May, 2015 E.C

COLLEGE OF COMPUTING AND INFORMATICS

DEPARTMENT OF INFORMATION TECHNLOGY

Web Based Trade License Management System for Wolkite Trade and Industry Office

SUBMITED TO DEPARTMENT OF INFORMATION TECHNLOGY

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF BACHLER OF SCIENCE IN INFORMATION TECHNLOGY

BY

1. Semira Mulugeta…….…… NSR/1298/12
2. Tamralech Birhi …….……. NSR/1378/12
3. Nigist Sisay…… CIR/325/08

PROJECT ADVISOR: Mr. Fuad Yimer

Wolkite University, Wolkite, Ethiopia

May, 2015 E.C

DECLARATION

This is to declare that this project work which is done under the supervision of Mr. Fuad Y.and having the title Web Based Trade License Management System for Wolkite Trade and Industry Officethe sole contribution of: Semira Mulugeta, Tamralech Birhi and Nigist Sisay. No part of the project work has been reproduced illegally (copy and paste) which can be considered as Plagiarism. All referenced parts have been used to argue the idea and have been cited properly. We will be responsible and liable for any consequence if violation of this declaration is proven.

Date: _____

Group Members:

Full Name	Signature
_____	_____
_____	_____
_____	_____

Approval Form

This is to confirm that the project report entitled **Web Based Trade License Management System for Wolkite Trade and Industry Office** submitted to **Wolkite University, College of Computing and Informatics Department of Information Technology** by: Semira Mulugeta, Tamralech Birhi and Nigist Sisayis approved for submission.

Advisor Name	**Signature**	**Date**
Department Head Name	**Signature**	**Date**
Examiner 1 Name	**Signature**	**Date**
Examiner 2 Name	**Signature**	**Date**
Examiner 3 Name	**Signature**	**Date**

Acknowledgment

We would like to thank God for giving us strength and health to start this project proposal. We are also grateful to our advisor for his constructive guidance from the beginning of the project up to now, and then we would like to thanks our college for giving as this chance to do this final project. Finally, we want to extend our thanks to our parents for their encouragement, motivation and support throughout our study. And also, we also would like to thanks all Wolkite Trade License office members.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

Abbreviation

GUI	Graphical User Interface
BR	Business rule
UML	Unified Modeling Language
UI	User Interface
TIN	Tax Identification Number
OOSAD	Object Oriented System Analysis and Design
TLMS	Trade License Management System
Id	Identification
API	Application Programming Interface
MySQL	My Structural Query Language
FK	Foreign Key
PK	Primary key

ABSTRACT

The project developing as Web Based Trade License Management System (TLMS) for Wolkite Trade and Industry Office. The purpose of this project is changing the existing system in to computerized and improved accessibility of data. In tradelicense management system for Wolkite trade and industry office is very difficult to keep and manage a large number of information involve in the trade service. This may lead them for lack of security, resource consumption. Proper generation of report take time to produce, Retrieval of information takes a lot of time, need large space to store file and human energy loss. The main objective of this project is solving problems by identifying problems in the existing system and we analyse the problem, gather requirements and designing of the system to solve existing system problem. This project can perform many functions like account management, notice management, report generating, the project is web based so it is user-friendly system and it provide more significant for the employees, developer, and the organization.

CHAPTER ONE

1. INTRODUCTION

ICT (information communication technology) refers to the combination of manufacturing and services industries that capture transmit and display data and information electrically. ICT also deals with information law and communication law. ICT are rapid involving and taking center stage in everyday life in the 21st century alongside increasing importance and value information.

Now a day, the use of information communication technology in all over the global is becoming very advantageous in every activity. More specifically, due to this reason, there is a rapid and considerable advancement in the trade sector owning to the application of computer technology, and the great break through, the sector is showing in terms of simplifying the way that things are done in organization are mainly the result of information technology.

Trade license system allows traders to register their trade nationally. Many traders are legally required to register in order to operate in Ethiopia. It is important to include certifications and professional references, as well as a detailed outline of the structure of the company creates standard in trade license according to customer needs, satisfying their general comfort. Trade license in manual very difficult to keep and manage a large number of information involve in the trade service system. The objective of this proposed system is to develop computerized trade license system to make the system easy and error free in which the users can access their data easily.

1.1. Background of the Organization

Wolkite Trade and industry office found in Wolkite City, Gurage zone and established around 1896 E.C. The trade registration and license office 10 meter far from Wolkite bus station in north direction and near to Wolkite ethio-telecom. This government organization serves people by giving different kind of service that depends on the trade license and controls the activity that are related to trade. Currently, the trade license office has 21 staff member's the office have its own distribution of work flow to give better service for the customer generally the trade license office works hard to give good service for the customer's. Generally, the office work performed in manual method.

1.2. Statement of the problem

The traders have been increasing all the time. This increasing number of traders from time to time makes the paperwork hard to handle. This means we have to use more paper and this lead us to data complexity we might not found the data we need on time, waste more paper this is the main problem in the trade registration system. This implies that in the trade registration office, storing data in paper is not suitable. The current trade registration activities and trade licenses without theuse of modern technology is inappropriate for data management. Beside to the difficulty in data management there is a problem of proper authorization of trade name, difficulty in modifying of trader data when changing the trade name. More than that processing of the registration and license certification is time consuming. The project will use the information technology for managing all the required traders' data. That will make more performance and more reliability of data storing. Therefore, this project is best alternative for the trade registration office to turn their trade registration and licensing process to more organized form and simplify access of data, designing and implementing as automated data management system and simplify the record tracking and modification process of trader's record in addition to this trader can view their status and current updated policy and work information on office business activities. Wolkite Trade registration Office's vision is to deliver modern efficient, secured, productive, fair and free services for all citizens. Some problems in the current system are the following:

- Difficult store data: More space and time needed to keep all records of traders and there is no use of database for file storage, which is susceptible for natural disaster like fire and flood.
- Unproductive use of resources: Paper takes up a massive amount of room in the site.
- Difficult to modifying and editing data regarding with traders: The existing traders' record is difficult to be edited and updated.
- Lack of immediate data retrievals: The information is very difficult to retrieve and to find particular information like to find out particular trader's information, the user has to go through various lists of all trader information. This results wastage of time.

- Data redundancy: There is no data redundancy control, for example, the same registration number can be assigned to different trader due to human errors.

1.3. Objective of the Project

1.3.1 General Objective

The general objective of this project is to design and develop Web Based Trade License Management System for Wolkite Trade and Industry Office.

1.3.2 Specific Objective

The specific objective of web-based trade license management system is:

- To identify the problem of the current system
- To assess the existing reliable services in trade license user
- To analyze the existing system
- To identify and design the requirement of the new system
- To test the existing system
- To implement user friendly interface

1.4. Feasibility Analysis

Feasibility study is to get user acceptance and making the system easily understandable and accessible the new system. This important phase in the software development process of this project. We consider the following feasibility:

1.9.1. Operational feasibility

The system to be developed will provide accurate, secured service and decrease the labor workload. In addition, the system will be easily operation; it does not affect the existing organization structure. Therefore, the system will be operation feasibility.

1.9.2. Technical feasibility

Our project can be done with current equipment, existing software technology and available personnel and therefore it can be concluding that the system is technical feasibility.

1.9.3. Economic feasibility

System to be developed is economically feasible and the benefit is out weighting the cost. Since this project already computerize the existing system by now there is decrease of cost for materials used in manual operation becomes beneficiary to the organization.

1.5. Scope and Limitation of the Project

1.5.1. Scopes of the project

Although, design concepts, outputs and other components of the project can be used for different purpose, the implementation of this project is on web-based trade license management system. The scope of the project mainly deals with providing online trader registration, renewal license, generate trader and payment report, deactivate license, the system supports Amharic language for page and online payment with simulation and license certification.

1.5.2. Limitation

- The system not include the trader that displeasure about trade tax.

1.6. Significance of the Project

- Reduce the workload of employee.
- Files can store for long period of time.
- Reduce resource usage.
- License officer can search files easily.
- To give effective and efficient services to customers.

1.6.1. Target Beneficiaries of the System

For trader

- Save the trader time and cost.
- Trader can get their documents easily.

For employees

- Provide Security: only authenticated user can get access to the system.
- Provide performance and efficiency: in data retrieval and form filling during registering resident information into the system.
- Better data storage: by the use of database for file storage.
- Productive use of resources: save resources like time and space and reduce wastages.
- Reduce the workload: simplify the trade registration process.

For students

- ❖ When we develop this project, we get good knowledge and to understand the way how to solve given problem.

1.7. Methodology for the Project

1.7.1. Data collection techniques

The project will use the following data collection methodologies

- ➢ **Interview**: The project team had interviewed Wolkite city trade license manager and other member of office as well as some peoples who live in the city too deeply understand the manual system and to develop the proposed system perfectly.
- ➢ **Observation:** The project team observed different things to get the overview of the existing system, understanding the overall work flow and how everything is handled in and its overall system.
- ➢ **Document analysis:** We use this method we try to discover written documents about the organizations structure, business rule, and to know all about the trade license office mission, vision, function and overall of their work in short and brief.

1.7.2. System Analysis and Design

- ➢ We use Object oriented system analysis and design methodology because the software development methodology by building self-contained modules or objects. This methodology has the Following futures increased extensibility, proved quality, and managed complexity.

1.7.3. System Development Model

- ➢ We use Iterative Model because in iterative model we can iterate back if error is occurring in one phase and we can return back to other phase to fix errors at any phase of the project life cycle.

1.7.4. Testing Methodology

- ➢ We use Unit Testing because testing individual components independently from one another. This testing method reduces the complexity of the overall test activities, easier to pinpoint and correct faults andallows parallelism in the testing activities.

1.7.5. Development Tools and Technologies

For implementation of this system, we follow the common project development Processes- Requirement elicitation, Designing, implementation, verification and maintenance.

1.7.5.1. Frontend Technologies

- ✓ Sublime: to write different codes for front end technology like Html, Bootstrap, CSS and JavaScript.

1.7.5.2. Backend Technologies

- ✓ MYSQL database: to store information in table form.
- ✓ PHP: it is a server-side personal home page programming.

1.7.5.3. Documentation and Modeling Tools

- ✓ Microsoft word 2016: to prepare documentation.
- ✓ Microsoft PowerPoint: to prepare slide shows.
- ✓ Edraw max: to Design UML diagrams.

1.8. Document Organization

This project document deals all about Trade License management system for Wolkite Trade and Industry Office. It has five chapters: introduction, existing system, proposed, analysis, design phase. The introduction part deals with the background for the project area and office, statement of the problem, scope, limitation, methodology in terms of data collection, system analysis and design, system development, testing as well as development tools and feasibility study of the project in terms of operational, technical and economic feasibility. The second chapter shows the user of existing system, major function, drawback in terms of performance, input/output, security as well as efficiency and business rule of the existing system. The third chapter shows discussions of the new proposed system detailed description of system functionalities in terms of functional and nonfunctional requirement in the case of nonfunctional requirement we included here user interface, hardware consideration, security issues, performance, error handling, quality and resource issue. The fourth chapter deeply deals system design with using a UML (Unified Modeling Language) diagrams like, Use case diagram, class diagram, Sequence diagram, activity diagrams, and state chart diagram thus diagram generally shows three system model mean functional, object and dynamic. The fifth chapter It shows the design goal in terms of performance, dependability, maintenance, end user and priority of design

goal, and proposed architecture of the solution including subsystem decomposition, deployment diagram, detail class diagram, persistence model for tables mapping followed with the access control as well as package and algorithm design are included in this chapter.

CHAPTER TWO

2. DESCRIPTION OF THE EXISTING SYSTEM

Based on our data gathered, the current trade license system of Wolkite town is a manual. In the existing system documenting, writing, finding and searching of the specific information of the trade license is done manual. Moreover, there is no logging function available so that each process or workflow cannot be traced from the database. These types of system make the worker to document erroneous and redundancy information and it also consume the time of worker for completing specific task.

2.1. Introduction of existing system

In this chapter we studied the existing system deeply, since it is necessary to know the existing working system to develop a better system. When we studied the existing system we gave emphasis for here under listed questions.

- How the existing system is working?
- What are the criteria to get trade license?

After studying the existing system, we also determined the requirement or the feature that must be included in the proposed system. Furthermore, by analyzing the current system, we could also estimate how the propose system solve the setbacks of the existing system.

2.2. Users of the existing system

The users and their activities are described as follows:

- Traders: are peoples wanted to get trade service.
- License officer: are employee's give service for trader for example approve license, renew license, deactive license and other activities related to trader.
- Office manager: is a person controls activities of trade office.
- Revenue Authority Officer: is a person who give TIN numbers for traders.

2.3. Major Functions of the Current System

The main functions of the existing system are: register trader, give license, renew license, deactivate license, generate report, give comment through paper, send news through letter. In registration process, the trader applies for registration or license certification. The workers of the trade registration office ask the requirements for the registration or license certification like Trader Identification card, TIN, house number and passport size

photo. After seeing the above requirement, the license officer filling the registration form and the trader pay required money then trader registered after that the trader take license certification from license officer. The closing or deactivate process is described as follows. There will be two cases for license deactivate the first is, by the will of the trader. When the trader closes his trade activity. In this case, the license deactivation will be done as soon as the trader request is arrived in formal letter. The second case.is, when the trader does not renew the license with in renewal time. In this case, before the deactivation takes place, the trade registration process coordinator will send a letter to the trader for requesting the reason why the license is not renewed, then if the trader response is satisfactory the license will not be deactivating otherwise deactivate will be done on un-renewed license. Trader must have renewed trade license certificate every year from July 1 to November 30 by paying the required money to trade office otherwise, trade license will be deactivated. In the existing system, records of traders are managed in their registration number and categorized in years. All this information is recorded on the paper.

2.4. Drawback of the Existing System

2.4.1 Performance

- ✓ When they search data about specific person there is performance issue like response time.
- ✓ There is always delay in information search and retrieval.

2.4.2 Input and Output

Input

- ✓ Most of the time input data is not accurate due to human error.
- ✓ The data entry method is manual. There may be data redundancy.

Output

- ✓ If the input is not correct output also incorrect or not get relevant information.

2.4.3 Security and Controls

- ✓ The data we have recorded access by others.
- ✓ Duplicating the data in to different box file, but it is not sufficient.
- ✓ Place of storage is no secure, so that it is very difficult to control the data. This shows that, existing system data storage is not secure and low control.
- ✓ Processing errors are occurring by people.

2.4.4. Efficiency

As we have seen, the existing system encounter different problems related with efficiency like,

- ✓ The existing system consumes man effort, time and space.
- ✓ Data is redundantly processed. Because of such problems, the existing system is not enough efficient.

2.5. Business Rules of the Existing System

A business rule is an organization running principle or guide for practitioners of a system. These always used for a specific system to be control over the policies of the whole organization. The following are some of the business rules of the target organization. [1]

Table 2.1 Business rule1

Name	Traders must register to participate in trade
ID	BR112
Description	No person shall participate in any trade activity unless registered in a trade registration and register only once even though he carries on different trade activities.

Table 2.2 Business rule2

Name	Any trader age must greater than 18
ID	BR113
Description	Any trader want to trade license certificate, his/her age is greater than or equal to 18 years old this is check from identification card.

Table 2.3 Business rule3

Name	Traders must have kebele id card
ID	BR114
Description	Trader must have Keble Identification Card in order getting license and operate Any trade activity.

Table 2.4 Business rule4

Name	Any Traders 4 recent passport size photo
ID	BR115
Description	Any traders must submit 4 recent passport size photographs for getting license certificate.

Table 2.5 Business rule5

Name	Traders must paid the required money
ID	BR116
Description	Trade workers can only renew their license if and only the paid the required money. The registration will be successful if registering body check tax identification card number (TIN)

Table 2.6 Business rule6

Name	Traders must renew license with specified time
ID	BR117
Description	If a trade license is not renewed within a year, the licenses to be Deactive. The term for trade license renewal is once a year from July 1 E.C to December as 30 without penalty and from January to June 30 E.C with penalty.

Table 2.7 Business rule7

Name	Any traders must have active account
ID	BR118
Description	The traders must have active and credited bank account.

CHAPTER THREE

3. PROPOSED SYSTEM

The project entitled is for automating Wolkite city trade License office. The main aim of this project is to automate the existing system and it will solve the problems that are exists in the manual system. We are going to design a web-based system that address the existing system problems. Therefore, this project is best alternative for the trade license registration office to turn their trade registration and licensing system. The system stores the records of traders in organized, simply accessible, easily controllable and modifiable form

3.1. Functional Requirement

The proposed system is designed to do the following functionalities:

- **Send request:** The trader send the request in order to get the license
- **Register trader:** The system would be able to register the traders who wants to trade license with fulfilling the requirement. Trade office they can able to register online by only home page click register button.
- **Manage account:** The system should provide create, deactive, and update the account of the trader.
- **Give comment:** The trader gives any suggestion and question with regarding to trade license.
- **View notice:** The trader views the necessary information that are send by the trade license officer.
- **Deactive license:** The trade license officers deactive the license of the trader if the trader aborted and not renew the license in the given time.
- **Renew license:** The trade license officer renews the license of the trader first, the trader wants to renew the license send the request to the officer unless the officer send notice to the trader in order to renew the license.
- **Post notice:** The system can post news and notice for the trader in order to make them informed by the trade license officer.
- **Approve License:** license officer approves the trader request.
- **View comment:** The trade license officer views the comment that send by the trader.

- **Reply comment:** the license officer comment back to the trader.
- **View reply comment:** The trader views the comment that replied by the license officer.
- **Change language:** Trader, License officer, Administrator, Manager Change language the system support Amharic and English language for each page.
- **Check payment:** License officer check the payment that are pay money by the trader.
- **Check identification card:** License officer check identification card of trader from kebele database.

3.2. Non-Functional Requirement

Non-functional requirements describe user-visible aspects of the system or constraint of the system.Generally, the nonfunctional requirements of the system are listed below:

3.2.1. User Interface and Human Factors

User-friendly interface: Simple and interactive user interface components should be part of the system. This user-friendly interface requirement of the system will be available in any end user and system administrator interface of the application.

3.2.2. Hardware Consideration

The system should run on a desktop and pc (personal computer) with a dedicated serve to contain the database and other server components. It requires at least 1.5 GB RAM to run easily the system.

3.2.3. Security Issues

This system provides an access to privilege to an authorized user by giving account for each and users can only access information and perform any operation through their privilege with session-controlled.

3.2.4. Performance Consideration

The system is accessible by specified actors. It should not make wasteful use of system resources; includes responsiveness, processing time and memory utilization so our project will be effective and efficient as compared to the existing system.

3.2.5. Error Handling and Validation

Generate error message for invalid inputs: wrong input entry should not be accepted by the system it should prevent and notify for the user so that wrong output will not be

generated. In order to validate the input, we use front-end scripting language such as java script.

3.2.6. Quality Issues

Reliability: the system should be reliable in retrieving and displaying only the requested data for the user. Users can rely on the information be gotten would be true and dependable. Information in database should be accurate.

3.2.7. Documentation

The system should provide, help file and different pdf files that are useful for the user.

CHAPTER FOUR

4. SYSTEM ANALYSIS

This Chapter explains the system analysis by designing use case diagrams, use case description for each use case identified in the use case diagram, object model class diagram, sequence diagram, activity diagram and state chart diagram.

4.1. System Model

In the system model, we analyze three models: functional model, deals with our system functionality and we describe by using use case diagram. Object model describe, the structure of our system. The object model described by the UML class diagram. Dynamic models, deal with the internal behavior of the system. We express this model by the sequence, state chart and activity diagrams.

4.1.1. Use Case Model

In the use case model first we identify the use cases from scenario or functional requirement as well as identify the Actors based on which is initiate the use of the system and which is more reactionary so, we construct the use case diagram. Our proposed system has the following actors and their own task.

1. Traders

- Send request
- Change language
- Give comment
- View reply comment
- View notice
- Update account
- Apply Registration
- Pay money

2. License officer

- Post Notice
- Renew License
- Deactivate License
- View Request
- Approve request

- View Comment
- Reply comment
- Change language
- Update account

3. Office manager

- View report
- Change language
- Update account
- View notice

4. Administrator

- Create account
- Update account
- Deactive account
- Change language

4.1.1.1. Use Case Diagram

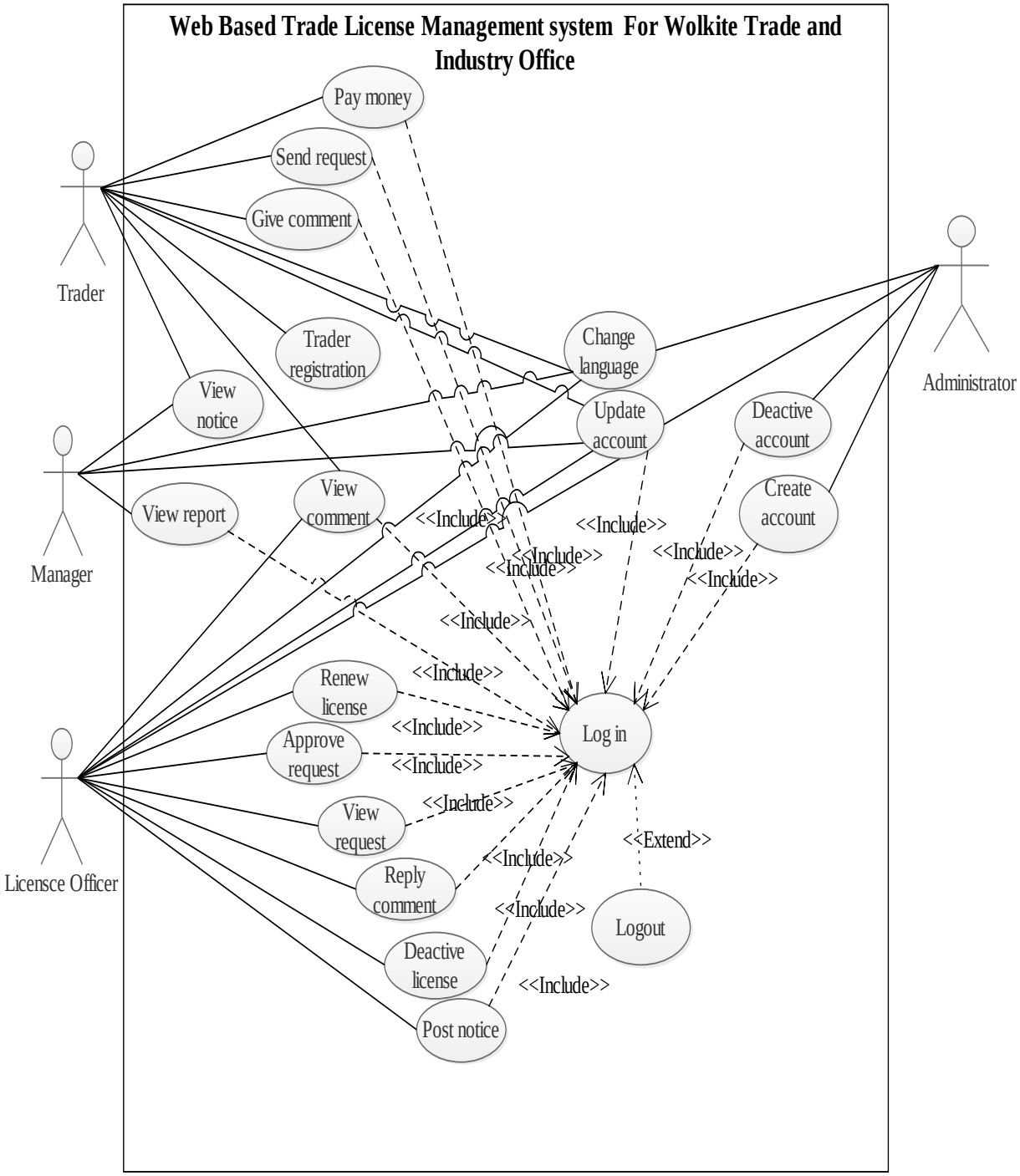


Figure 4.1 Use case diagram

4.1.1.2. Use Case Description

Table 4.8 Use case description for login

Use case name	**Login**	
Actors	Trader, License Officer, Office Manager, Administrator	
Precondition	All users must know correct user name and password.	
Use case description	All actors have login account to enter the system.	
	User Action	**System Response**
Basic course of action	1. User opens the home page. 2. Click login link. 4. Enter user name and password 5. Clicks on login button	3. Login form displayed. 6. Validate as well as verify data entry. 7. User's page displayed Use case end.
Alternative course of action	Step 1-5 remain the same. 6. The user did not type the correct username and password. 7. The system displays the corresponding error and enter correct user name and password message.	
Post Conditions	The user is logged in the system and provided with privileges for actions according to their roles.	

Table 4.9 Use case description for register trader

Use case name	**Register trader**	
Actor	Trader	
Precondition	Trader fulfill criteria of kebele.	
Use case description	Trader registers for new license.	
	User Action	**System Response**
Basic course of action	1. User opens the home page. 2. Click apply registrationlink and Click register trader button. 4. Fill the form and clicks on register button.	3. Display registration form. 5. Validate data entry. 6. Successfully registered. Use case end.
Alternative course of	Step 1-4 remain the same.	

action	5. The user did not type correct input data. 6. The system displays the corresponding error message.
Post Conditions	Successfully registered for new license.

Table 4.10 Use case description for reply comment

Use case name	**Reply comment**	
Actor	License officer	
Precondition	The License officer must log to the system.	
Use case description	License officer give feedback for arising comment.	
	User Action	**System Response**
Basic course of action	1. Browse page. 2. Click view comment link and Click replybutton. 4. Write reply comment then clicks on submit button.	3. Display the reply comment form. 5. Validate data entry. 6. Successfully replied. Use case end.
Alternative course of action	Step 1-4 remain the same. 5. The user did not type correct input data. 6. The system displays enter correct input error message.	
Post Conditions	Successfully replied the comment.	

Table 4.11 Use case description for create account

Use case name	**Create account**	
Actor	Administrator	
Precondition	System administrator must login.	
Use case description	Administrator create account for license officer and office manager.	
	User Action	**System Response**
Basic course of action	1. Browse the page. 2. Click view account link and Click on Create account button. 4. Fill the form and clicks on create button.	3. Create account form displayed. 5. Validate data entry. 6. Display successfully create account message. Use case end
Alternative course of action	Step 1-4 remain the same 5. The user did not type correct input data. 6. The system displays the corresponding error message.	
Post Conditions	The Account issuccessfully created.	

Table 4.12 Use case description for update account

Use case name	**Update account**	
Actors	Administrator, License officer, Trader, Office manager	
Precondition	System administrator, Trader, Office manager, License officer must login	
Use case description	Administrator, License officer update the account of trader	
	User Action	**System Response**
Basic course of action	1. Browse the page. 2. Click on view account, click edit button and update account button. 4. Edit the data you want to update and click update button.	3. The system display updating data. 5. Validate data entered. 6. Display successfully updated message. Use case end.
Alternative course of action	Step 1-4 remain the same 5. The user did not type correct input data.	

	6. The system displays the corresponding error message.
Post Conditions	The account will be updated massage displayed.

Table 4.13 Use case description for deactive license

Use case name	**Deactive license**	
Actor	License officer	
Precondition	License officer must login to the system	
Use case description	License officer deactive license of trader	
	User Action	**System Response**
Basic course of action	1. Open the page. 2. Click on view request link to on click deactive request button and 3. License officer search trader information by id and trader send by deactive request. 4. Clicks deactive button.	5. Display successfully deactive message. Use case end.
Alternative course of action	Step 1-3remain the same 3. If the search information is does not found. 4.The system displays record not found message displayed.	
Post Conditions	Deactivate license successfully.	

Table 4.14 Use case description for view report

Use case name	**View report**	
Actors	Office manager	
Precondition	Office manager must have an account	
Use case description	Office manager view generated report	
	User Action	**System Response**
Basic course of action	1.Open the page. 2. Officemanager click view report link and click trader registration, renewal, deactive button. 4. View the reported information.	3. Display the report.

Alternative course of action	Step 1-4 remain the same 5. If there is no reported data. 6.The system displays report not found message.
Post Conditions	Successfully viewed report

Table 4.15 Use case description for view reply comment

Use case name	**View reply comment**	
Actor	Trader	
Precondition	traders must have logged to the system	
Use case description	Traders view the replied comment	
	User Action	**System Response**
Basic course of action	1.Open the page. 2.Click view replied commentbutton. 4.View the reply comment. Use case end	3. Display the replied comment.
Alternative course of action	Step 1-4 remain the same 5. If there is no replied data. 6.The system displays not reply comment message.	
Post Conditions	Successfully seen reply comment.	

Table 4.16 Use case description for post notice

Use case name	**Post notice**	
Actor	License officer	
Precondition	License officer must have an account.	
Use case description	License officer post the new notice	
	User Action	**System Response**
Basic course of action	1.Browse the page. 2. Click on post new notice link. 4. Fill the form and click notice button.	3. Display notice form. 5. Validate data entered. 6. Display successfully notice. Use case end.

Alternative course of action	Step 1-4 remain the same. 5. The user didn't type correct input data. 6.The system displays the corresponding error message.
Post Conditions	Notice posted successfully.

Table 4.17 Use case description for view notice

Use case name	**View notice**	
Actors	Trader, office manager	
Precondition	manager must have logged to the system	
Use case description	Traders view the posted notice	
	User Action	**System Response**
Basic course of action	1.Open the page. 2.Click view notice link. 4.View the notice. Use case end.	3. Display the notice.
Alternative course of action	Step 1-4 remain the same. 5. If there is no noticed data. 6.The system displays not notice error message.	
Post Conditions	Successfully notice viewed.	

Table 4.18 Use case description for view request

Use case name	**View request**	
Actor	License officer	
Precondition	License officer must logged to the system	
Use case description	License officer view requests that send by traders	
	User Action	**System Response**
Basic course of action	1.Open the page. 2.Click view request link and click renew, deactive trader button. 4.View the request. Use case end.	3. Display the request.

Alternative course of action	Step 1-4 remain the same. 5. If there is no requested data. 6.The system displays not request error message.
Post Conditions	Successfully viewed request.

Table 4.19 Use case description for approve license request

Use case name	**Approve request**	
Actor	License officer	
Precondition	License officer must have logged to the system	
Use case description	License officer approve the request of trader.	
	User Action	**System Response**
Basic course of action	1.Open the home page 2.Click view deactive link by selecting the request option. 4.View the renew request if it selected renew option unless if selected is deactive request view deactive request. 5. Click renew button if it is renewal option unless deactive button if it is deactive request.	3. Display request information and form 6.The system Approve the request. 8. The System approve successfully. Use case end
Alternative course of action	Step 1-5 remain the same 6. The user didn't click renew or deactive button. 7. The system didn’t approve the request.	
Post Conditions	Successfully approve then print the license.	

Table 4.20 Use case description for send request

Use case name	**Send request**	
Actor	Trader	
Precondition	Trader must have logged to the system	
Use case description	Trader send request to License officer	
	User Action	**System Response**
Basic course of action	1.Open home page. 2. Click send renew requestlink. 4. Click license renew request button. 5. Click send request button.	3. Display request button. 6. Check the validity of input data. 7. Successfully send request. Use case end.
Alternative course of action	Step 1-5 remain the same. 5. The user did not full fill the requirement or without time. 6.The system displays the corresponding error message.	
Post Conditions	Send request successfully.	

Table 4.21 Use case description for view comment

Use case name	**View comment**	
Actor	License officer	
Precondition	License officer have an account.	
Use case description	License officer view comment	
	User Action	**System Response**
Basic course of action	1.Open the page. 2.Click view comment link. 4.View the comment Use case end	3. Display the comment.
Alternative course of action	Step 1-2 remain the same. 3. If there is no committed data. 4.The user can't view comment that arise by the trader.	
Post Conditions	Successfully Viewed comment.	

Table 4.22 Use case description for give comment

Use case name	**Give comment**	
Actor	Trader	
Precondition	Trader must logged to the system.	
Use case description	Trader give any comment to License officer	
	User Action	**System Response**
Basic course of action	1.Open the page. 2. Click give comment link. 4. Fill comment form. 5. Click give comment button.	3. Display comment form. 6. Check the validity of input data. 7. Successfully give comment. Use case end
Alternative course of action	Step 1-5 remain the same. 6. The user didn't type correct input data. 7.The system displays the corresponding error message.	
Post Conditions	Give comment successfully.	

Table 4.23 Use case description for renew license

Use case name	**Renew license**	
Actor	License officer	
Precondition	License officer must login to system	
Use case description	License officer renew the license of trader	
	User Action	**System Response**
Basic course of action	1.Open home page. 2.Click view request link. 3. Click renew license button.	4. System check the validity of process in trader pay money. 5. Successfully renewed the license. Use case end.
Alternative course of action	Step 1-3 remain the same. 4. The user didn't type correct input data. 5.The system displays the corresponding error message.	
Post Conditions	License officer renewed for the year.	

Table 4.24 Use case description for deactive account

Use case name	**Deactivate account**	
Actor	Administrator	
Precondition	System administrator must login.	
Use case description	Administrator deactive account of trader	
	User Action	**System Response**
Basic course of action	1.Open the home page 2Click deactive account link. 4. Click on deactivate button.	3. Display trader information. 5. The system deactivate the selected one. Use case end.
Alternative course of action	Step 1-2 remain the same. 3. If the search information is does not found. 4.The system displays the corresponding error message.	
Post Conditions	Successfully deactivate the account.	

Table 4.25 Use case description for change password

Use case name	**Change password**	
Actors	Trader, License officer, Manager, Administrator	
Precondition	All actors must logged to the system.	
Use case description	All actors change their own password	
	User Action	**System Response**
Basic course of action	1.Open the home page 2.Click on change password setting. 4. Fill form and click change password button.	3. Display change password form. 5. Display successfully password changed message. Use case end
Alternative course of action	Step 1-4 remain the same. 3. If user enter incorrect username and form input. 4.The system displays the corresponding error message.	
Post Conditions	Successfully changed password.	

Table 4.26 Use case description for deposit money

Use case name	**Pay money**	
Actor	Trader	
Precondition	System trader must login.	
Use case description	Traders pay money for getting license and renew their license.	
	User Action	**System Response**
Basic course of action	1.Open the home page 2. Click registration or renewal payment link to on click pay license button. 4. Select bank and fill theaccount and pin number. 5. Click proceed to online payment button. 7.Pay the required money by clicking the pay button.	6. Display Account information of the trader. 6. Display operation completed successfully message. Use case end.
Alternative course of action	Step 1-2 remain the same. 3. If traders type incorrect account number. 4.The system displays the account not found message.	
Post Conditions	Operation completed successfully.	

4.1.1.3. Use Case Scenario

Scenarios are instance of a use case explaining a concrete major set of action. we have identified the following scenarios.

#01. Login Scenario

W/ro Semira open the system by clicking the login icon from the home page and the system will display the login page. Then she enters username, password and click login button. After that the system checks the validity of the user name and password. If the user name and password is correct, the system verify user name and password from data

base if it is verified, the system will load the user page otherwise the system displays an error message.

#02. Send Request Scenario

Wro Semira open the system by clicking the request icon from the home page and the system displays the request form. Then after she fills the form and click send button. The system will check the validity of the entered data automatically. If the data are valid, the system displays the successfulness of the request otherwise the system displays error message.

#03. View Request Scenario

WroNigst launch, the system and click, the view request icon from the page and the system will display trader data. So, she can view the trader requested data if it is found in database table, unless there no request message display.

#04. Register Trader Scenario

WroNigst browse the system and click the registration icon from the page. After that, the system will display the registration form and she fills the registration form. Then click register button and the system will check the validity of the entered data. If the data are valid the system display the successfulness of the registration otherwise, it displays error message.

#05. Give Comment Scenario

Wro Tamralech open, the system by clicking the comment icon from the page and the system will display the comment form. Then she fills the form and click send button. After that, the system will check the validity of the entered data. If it is valid, the system displays the successfulness of the comment unless it displays error message.

#06. Approve Request Scenario

Wro Tamralech open, the system by clicking the approve icon from the page and the system will display the request information and form she fills the form then clicks approve button. After that, the system will check the validity of data and displays the successfulness of the approval otherwise, it displays error message.

#07. View Notice Scenario

WroNigst open, the system by click the view notice icon from the page and the system will display notice by searching then she views notice if it is there. Unless not found message displayed.

#08. View reply comment Scenario:

WroTamralech opens the system by clicking the view reply comment icon from the page and the system will display comment. She can view comment if there is feedback in the table. Unless, not found message will be displayed.

#09. View Report Scenario

WroSemira launches the system by clicking the view report icon from the page and the system will display report data so, she can view the data if there is any report in database otherwise, “there is no report” will be displayed.

#10. View Comment Scenario

W/roSemira opens the system by clicking the view comment icon from the page and the system will display comment. She can view comment if there is any new comment. Unless, the system will displays not found message.to her.

#11. Reply comment Scenario

W/ro Tamralech opens the system by clicking the reply comment icon from the page and the system will display the reply comment form. Then she fills the form and click reply button. After that, the system will check the validity of the entered data. If the data are valid the system will display the successfulness of the reply comment otherwise, it will display error message.

#12. Deactive License Scenario

W/ro Tamralech opens the system by clicking the deactive license icon from the license page and the system will display deactive license button. She clicks deactive button. The system will display ‘license deactivate successful’ message.

#13. Create Account Scenario

WroNigst opens the system by clicking the create account icon from the administrator page and the system will displays create account form. She fills data and click create account button after, that the system will checks the validity of the entered data. If the data are valid, it will display the successfulness of the create account otherwise, it will display error message.

#14. Update Account Scenario

WroNigst opens the system by clicking the update account icon from the page and the system will display update account form. She fills data and click update account button after that the system will check the validity of the entered data. If the data are valid it will display the successfulness of the update account otherwise it displays error message.

#15. Renew License Scenario

W/roTamralech opens the system by clicking the renew license icon from the license officer page and the system will displays renew license form. She can fill the data and click renew button. The system will check the validity of the entered data. If the data are valid, it will display the successfulness of the renewed license otherwise, it will display error message.

#16. Pay Money Scenario

W/ro Tamralech opens the system by clicking the pay icon from the page and the system will display account information and amount of pay form. She can fill the amount of money and click pay button. The system will check the validity of the entered data. If the data are valid, it will display the successfulness of operation completed otherwise, it will display error message.

4.2. Object Model

Object modelling develops the static structure of the software system in terms of objects. The object model described by class diagram.

4.2.1. Class Diagram

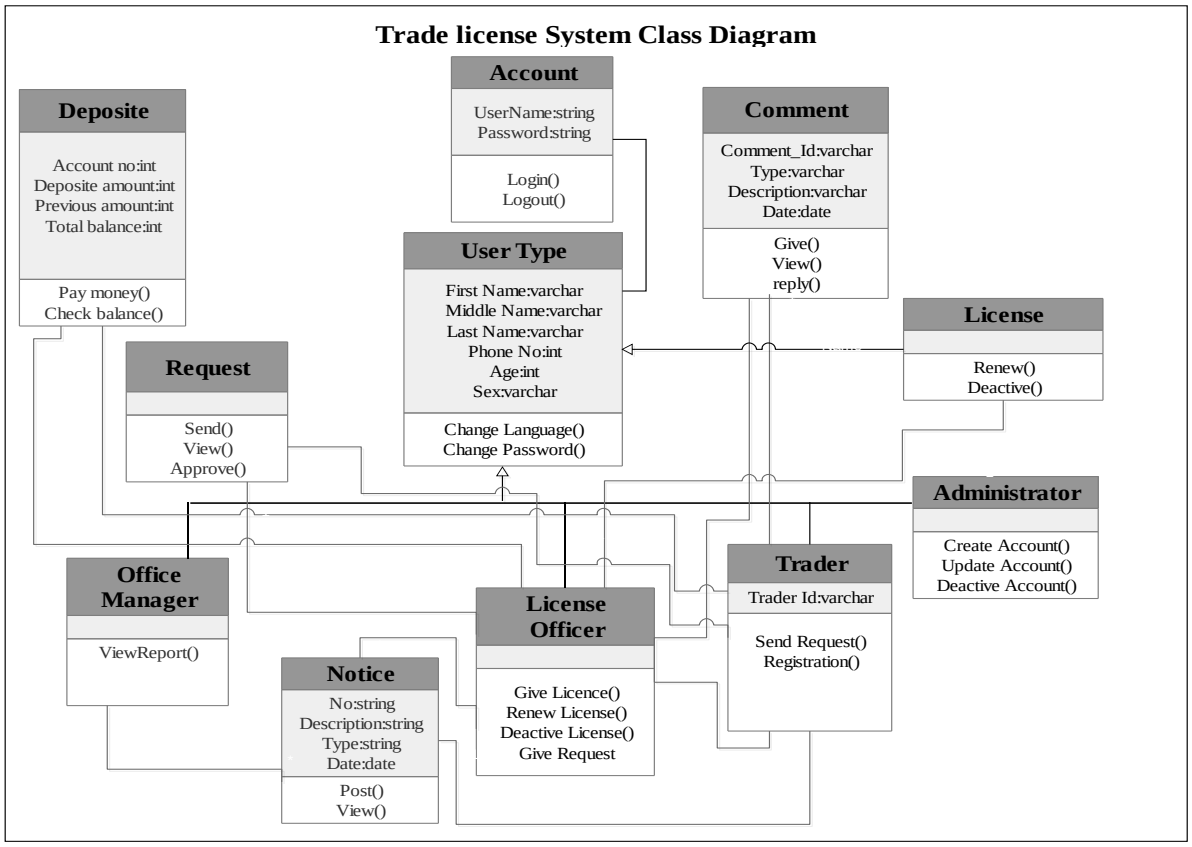


Figure 4.2 Class diagram

4.2.2. Data Dictionary

The following are some data dictionaries for TLSM.

Table 4.27 Data dictionary for Administrator

Primary key	Field name	Caption	Data type	Field size	Constraint
P	ID	Identification	Varchar	7	NOT NULL
	Fname	First Name	Varchar	16	NOT NULL
	Lname	Last Name	Varchar	16	NOT NULL
	Age	Age	Integer	---	NOT NULL
	Ph_no	Phone number	Varchar	10	NOT NULL

Table 4.28 Data dictionary for License Officer

Primary key	Field name	Caption	Data type	Field size	Constraint
P	ID	Identification	varchar	7	NOT NULL
	Fname	First Name	varchar	16	NOT NULL
	Lname	Last Name	varchar	16	NOT NULL
	Age	Age	Integer	---	NOT NULL
	Ph_no	Phone number	varchar	10	NOT NULL

Table 4.29 Data dictionary for Trader

Primary key	Field name	Caption	Data type	Field size	Constraint
P	ID	Identification	varchar	7	NOT NULL
	Fname	First Name	varchar	16	NOT NULL
	Lname	Last Name	varchar	16	NOT NULL
	Age	Age	Integer	---	NOT NULL
	Ph.no	Phone number	varchar	10	NOT NULL

Table 4.30 Data dictionary for Notice

Primary key	Field name	Caption	Data type	Field size	Constraint
P	Not_ID	Notice identification	varchar	6	NOT NULL
	Description	Description	varchar	255	NOT NULL
	Type	Type	varchar	10	NOT NULL
	Date	Date	Date	10	NOT NULL

Table 4.31 Data dictionary for Generate Report

Primary key	Field name	Caption	Data type	Field size	Constraint
P	Rep_ID	Report Identification	Varchar	6	NOT NULL
	Description	Description	Varchar	255	NOT NULL
	Type	Type	Varchar	20	NOT NULL
	Date	Date	Date	10	NOT NULL

Table 4.32 Data dictionary for Request

Primary key	Field name	Caption	Data type	Field size	Constraint
P	Req_ID	Request Identification	Varchar	6	NOT NULL
	Description	Description	Varchar	255	NOT NULL
	Type	Type	Varchar	20	NOT NULL
	Date	Date	Date	10	NOT NULL

Table 4.33 Data dictionary for Comment

Primary key	Field name	Caption	Data type	Field size	Constraint
P	Comm_ID	Comment Identification	Varchar	6	NOT NULL
	Description	Description	Varchar	255	NOT NULL
	Type	Type	Varchar	20	NOT NULL
	Date	Date	Date	10	NOT NULL

4.3. Dynamic Model

After the static behavior of the system is analyzed, its behavior with respect to time and external changes needs to be examined.

4.3.1. Sequence Diagram

Showing the sequence of interactions among objects participating in the use case. The following are some sequence diagram in our system.

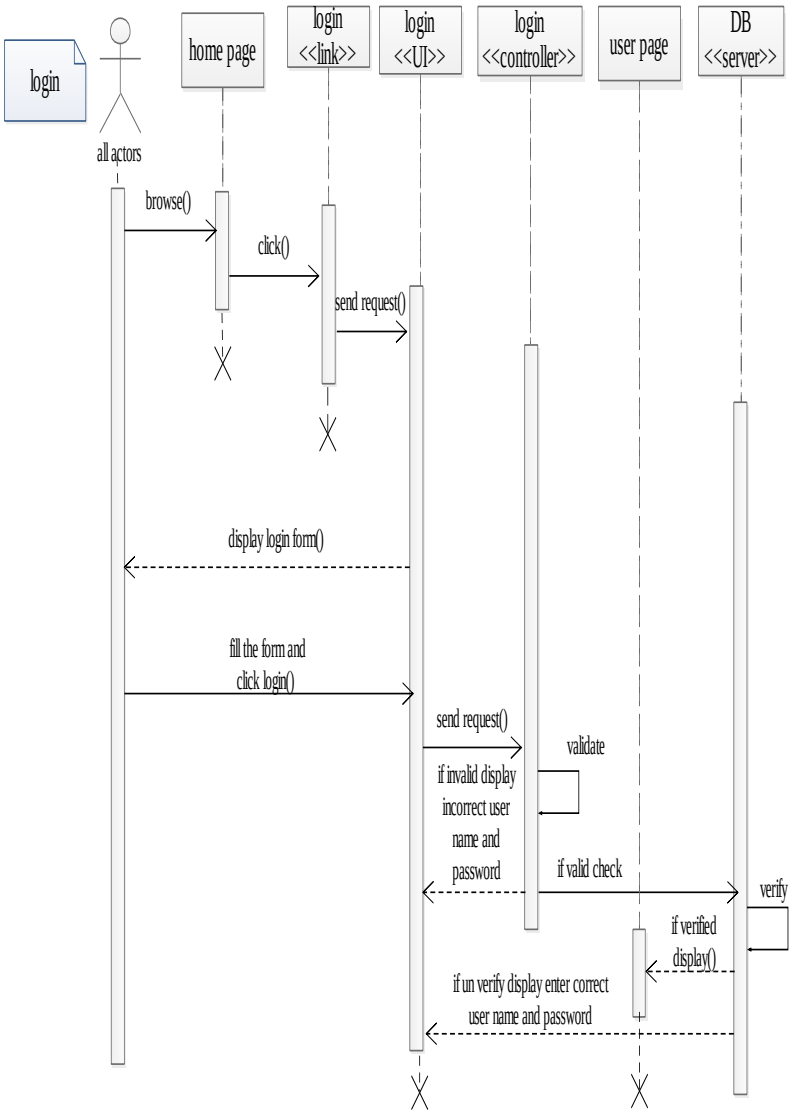


Figure 4.3 Sequence diagram for login

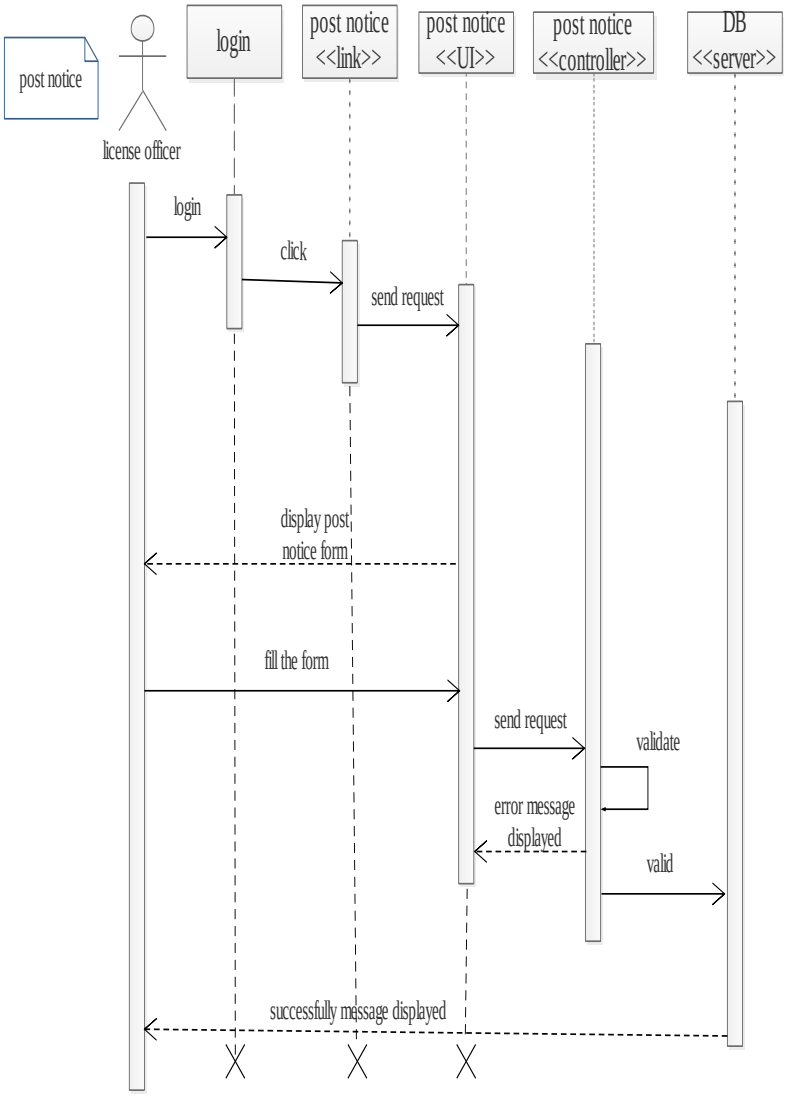


Figure 4.4 Sequence diagram for post notice

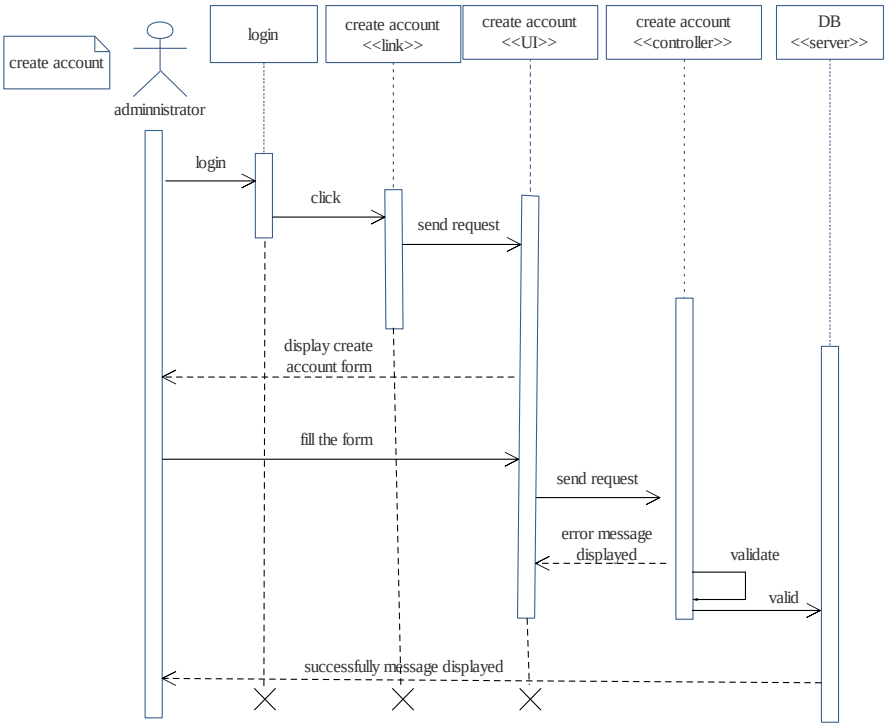


Figure 4.5 Sequence diagram for create account

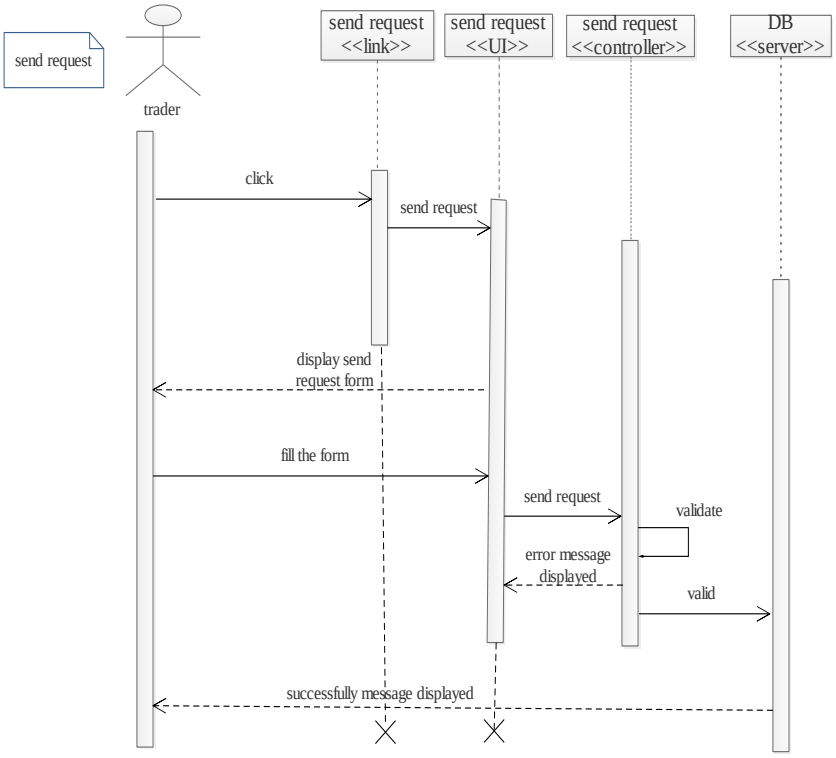


Figure 4.6 Sequence diagram for send request

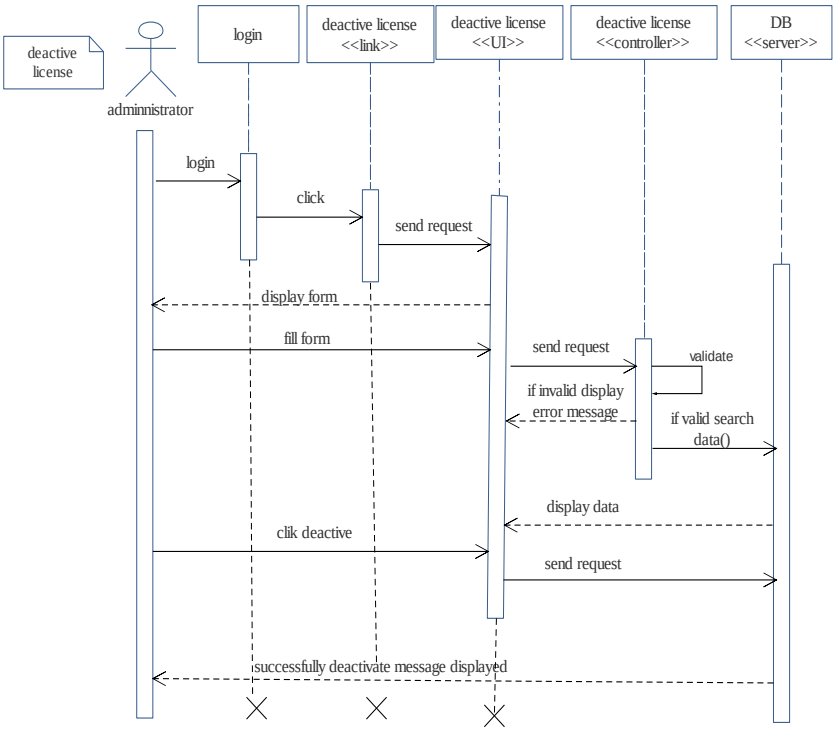


Figure 4.7 Sequence diagram for deactive license

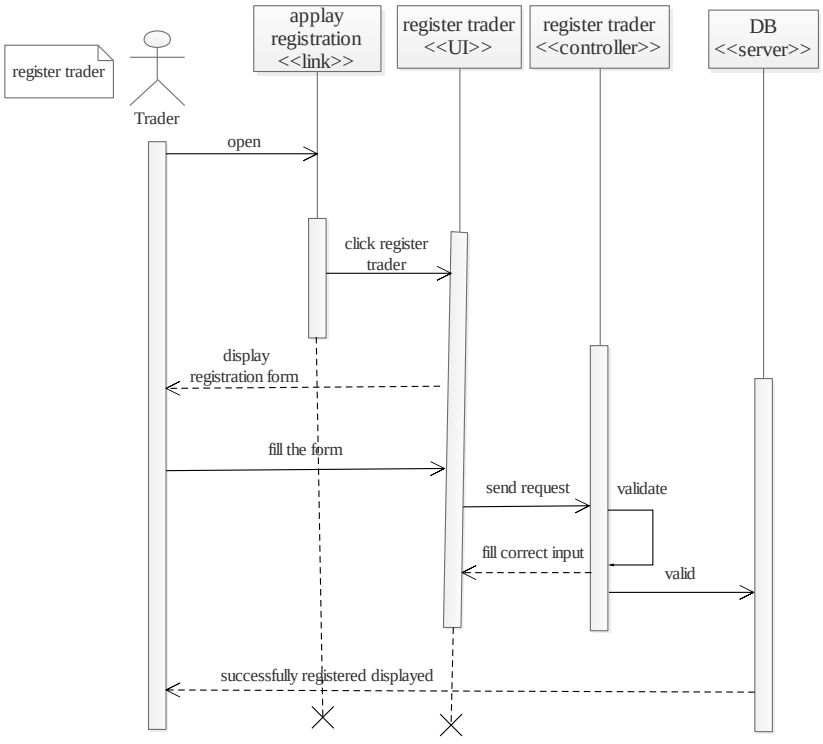


Figure 4.8 Sequence diagram for register trader

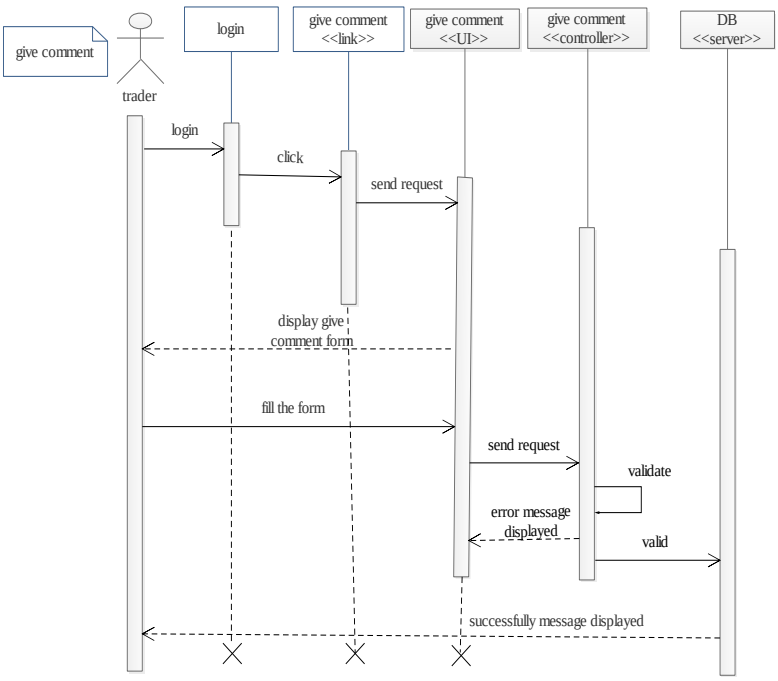


Figure 4.9 Sequence diagram for give comment

4.3.2. Activity diagram

Activity diagram is another important diagram in UML to describe dynamic aspects of the system. Activity diagram is basically a flow chart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

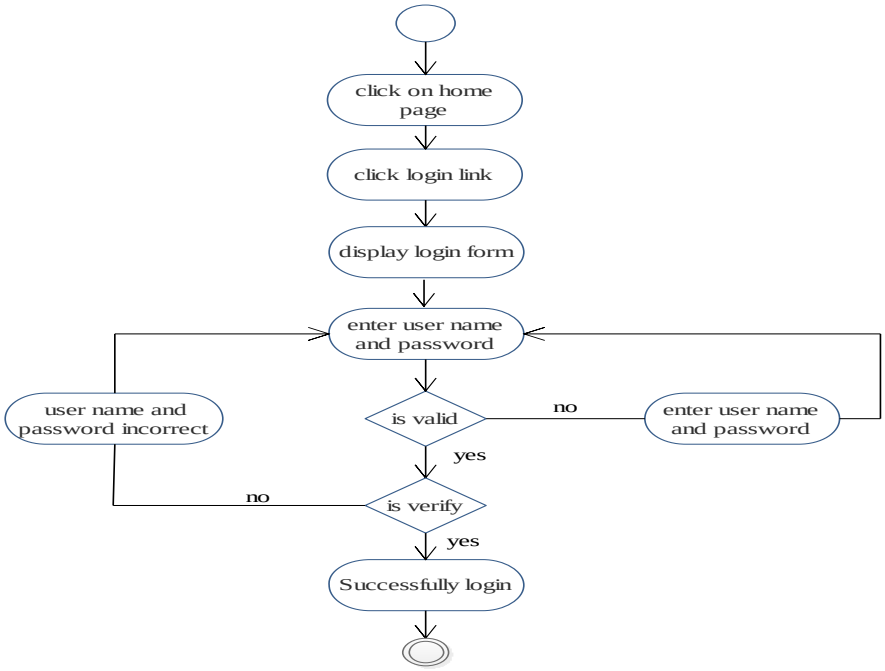


Figure 4.10 Activity diagram for login

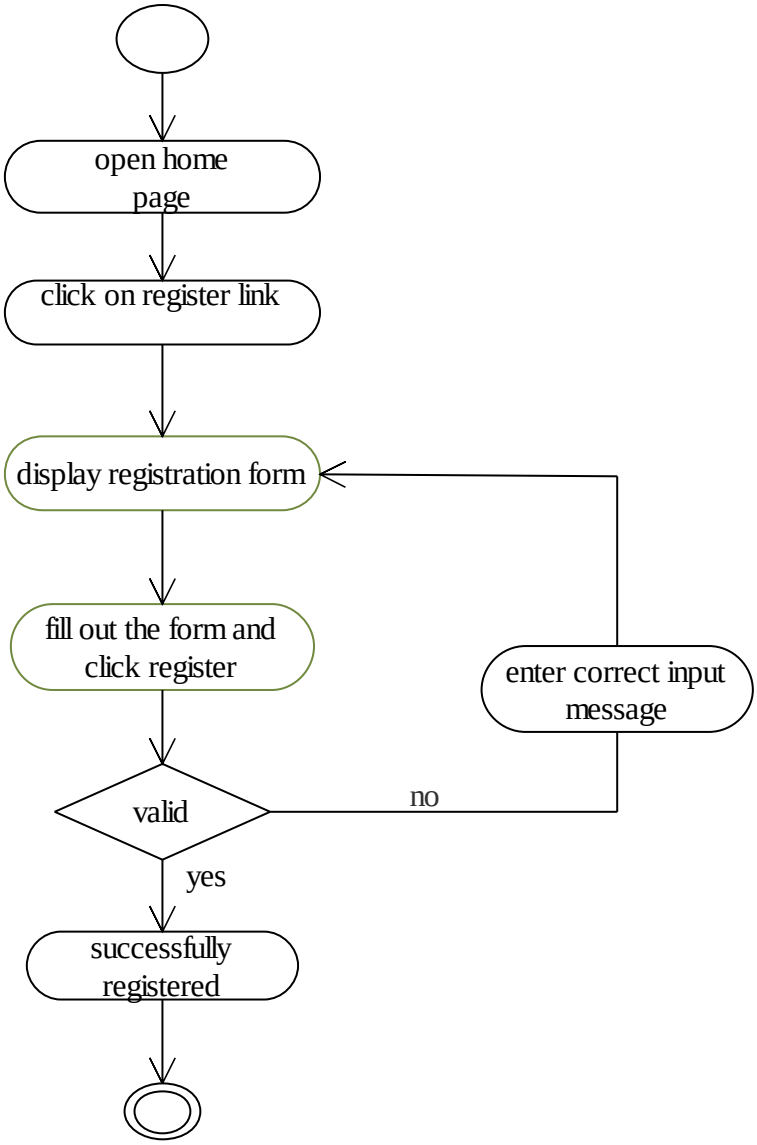


Figure 4.11 Activity diagram for register trader

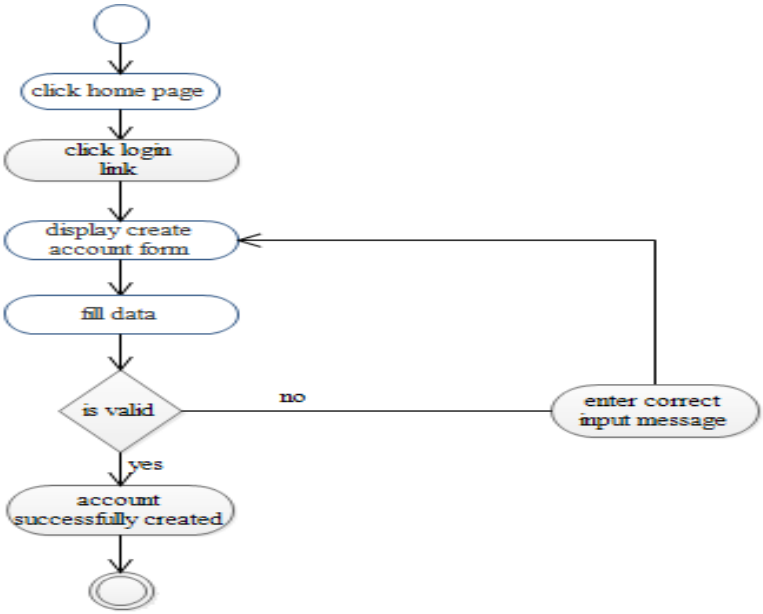


Figure 4.12 Activity diagram for create account

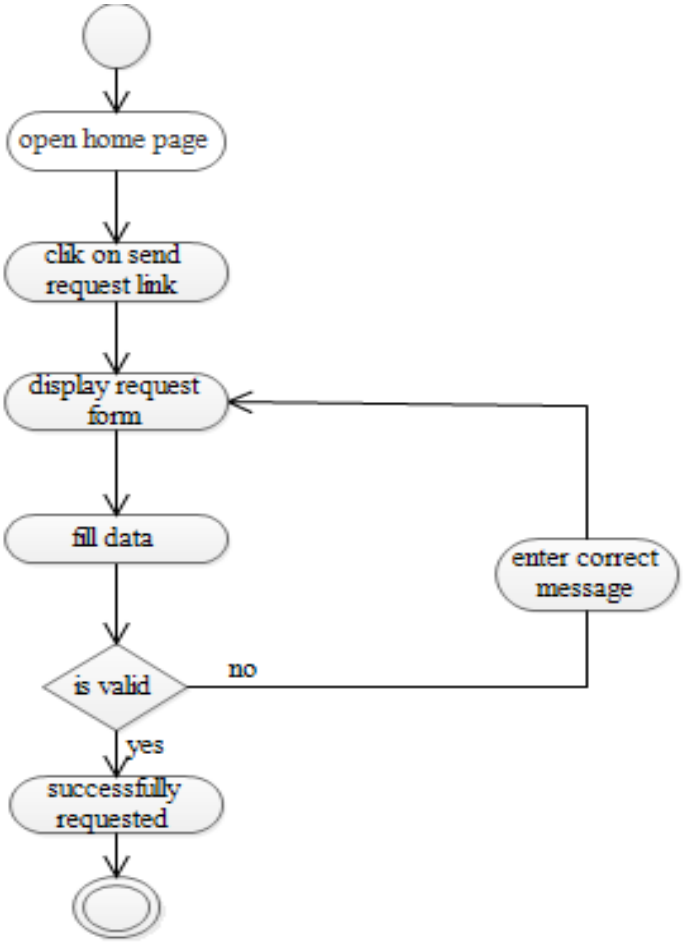


Figure 4.13 Activity diagram for send request

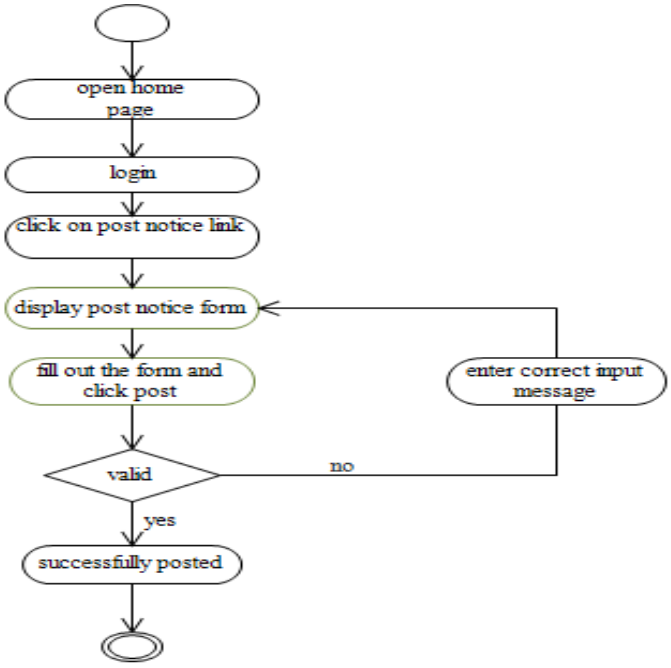


Figure 4.14 Activity diagram for post notice

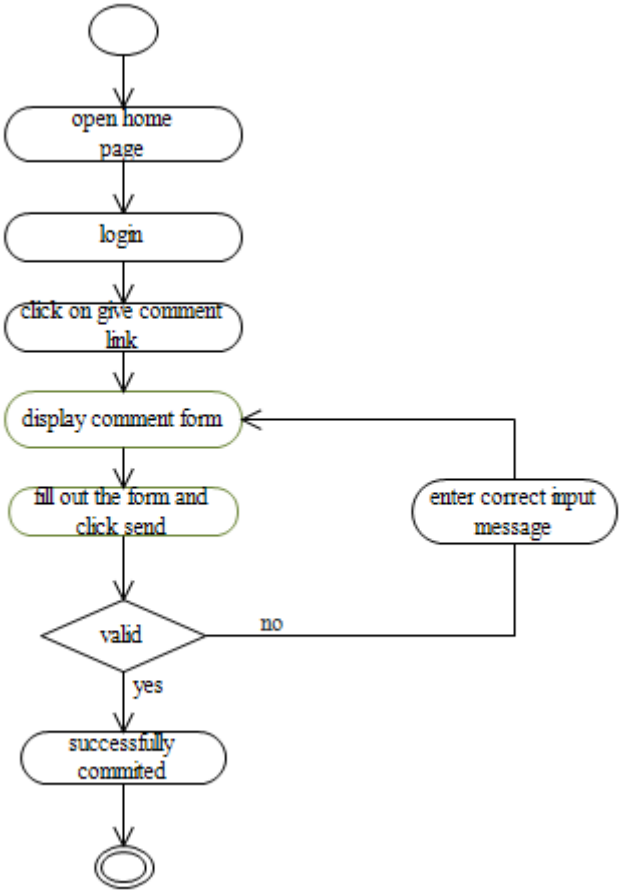


Figure 4.15 Activity diagram for give comment

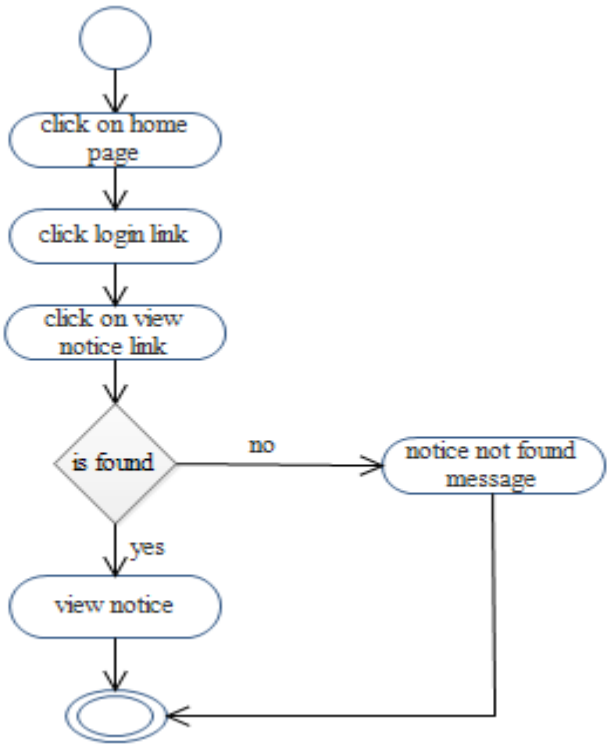


Figure 4.16 Activity diagram for view notice

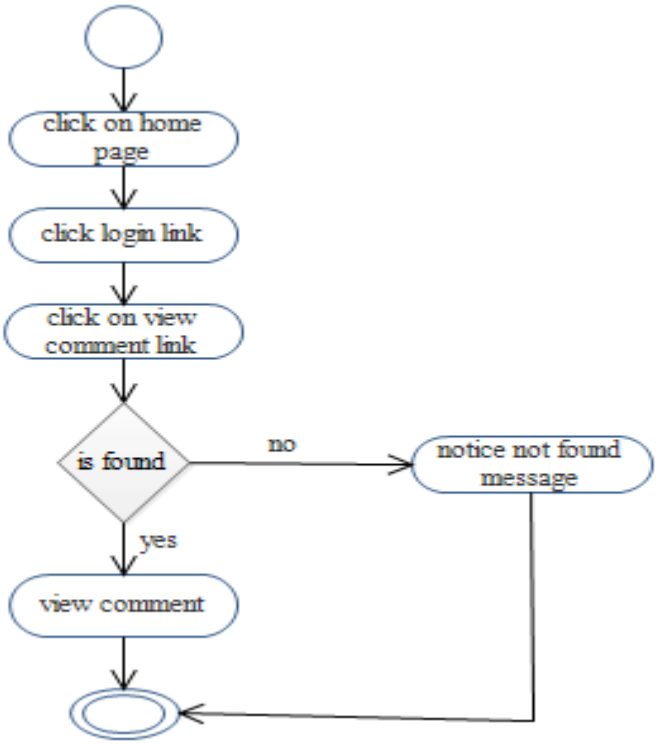


Figure 4.17 Activity diagram for view comment

4.3.3. State chart diagram

UML state diagrams depicts the various states that an object may be in and the transitions between those states. A state represents a stage in the behavior pattern of an object, and like UML activity diagrams it is possible to have initial states and final states.

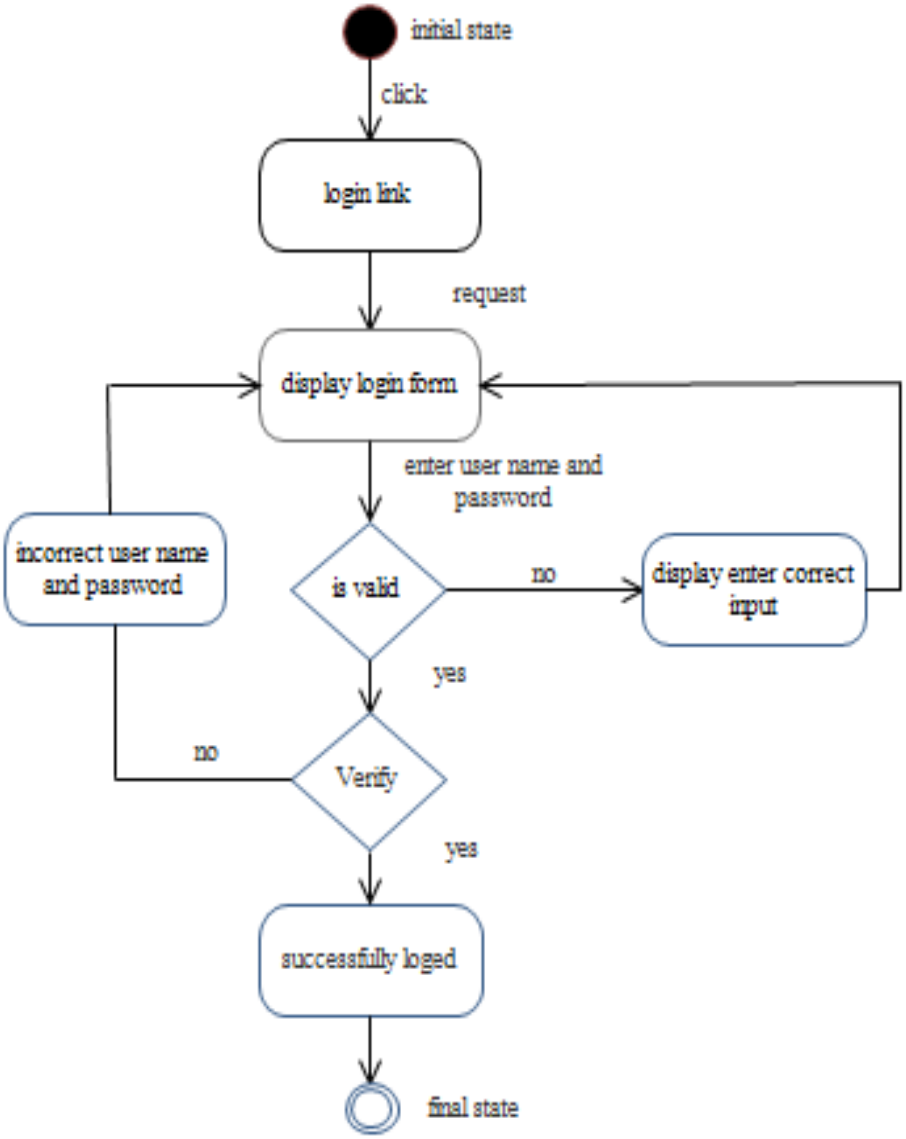


Figure 4.18 State chart diagram for login

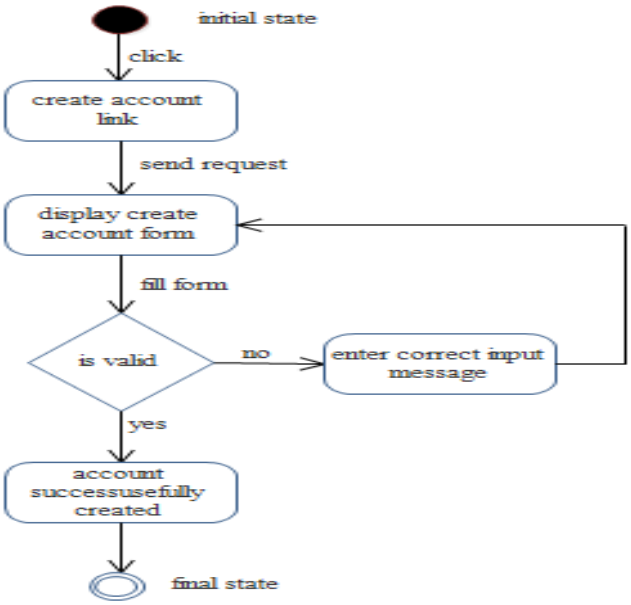


Figure 4.19 State chart diagram for create account

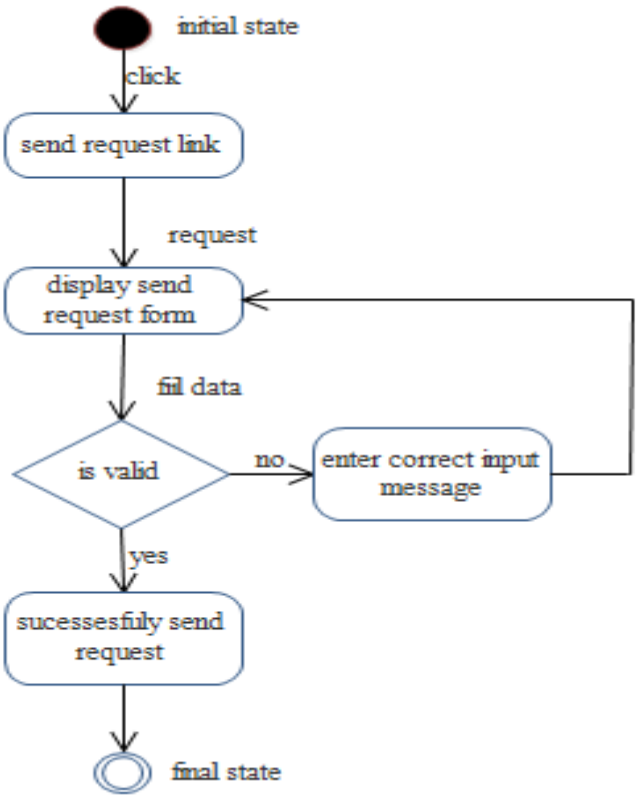


Figure 4.20 State chart diagram for send request

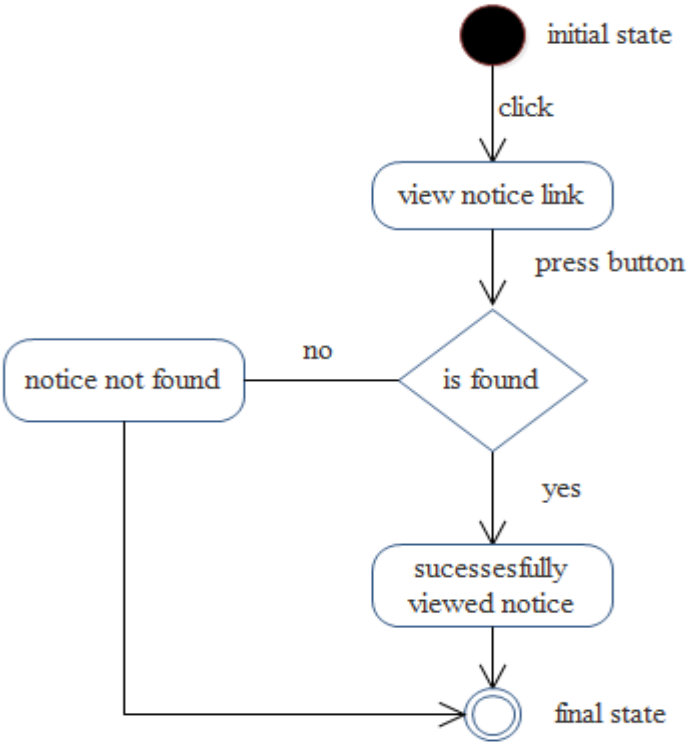


Figure 4.21 State chart diagram for view notice

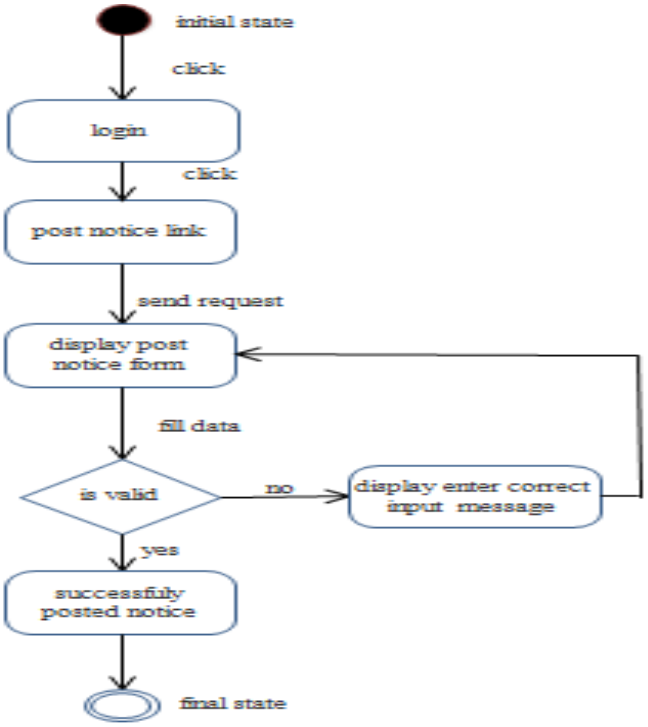


Figure 4.22 State chart diagram for post notice

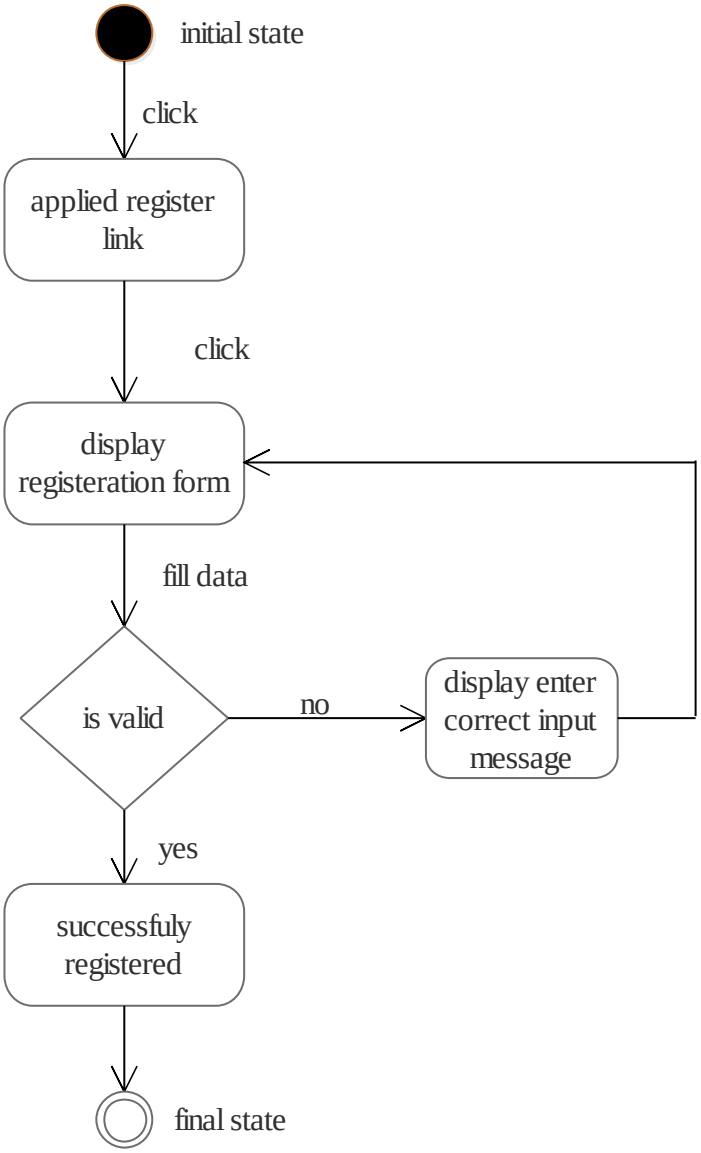


Figure 4.23 State chart diagram for register trader

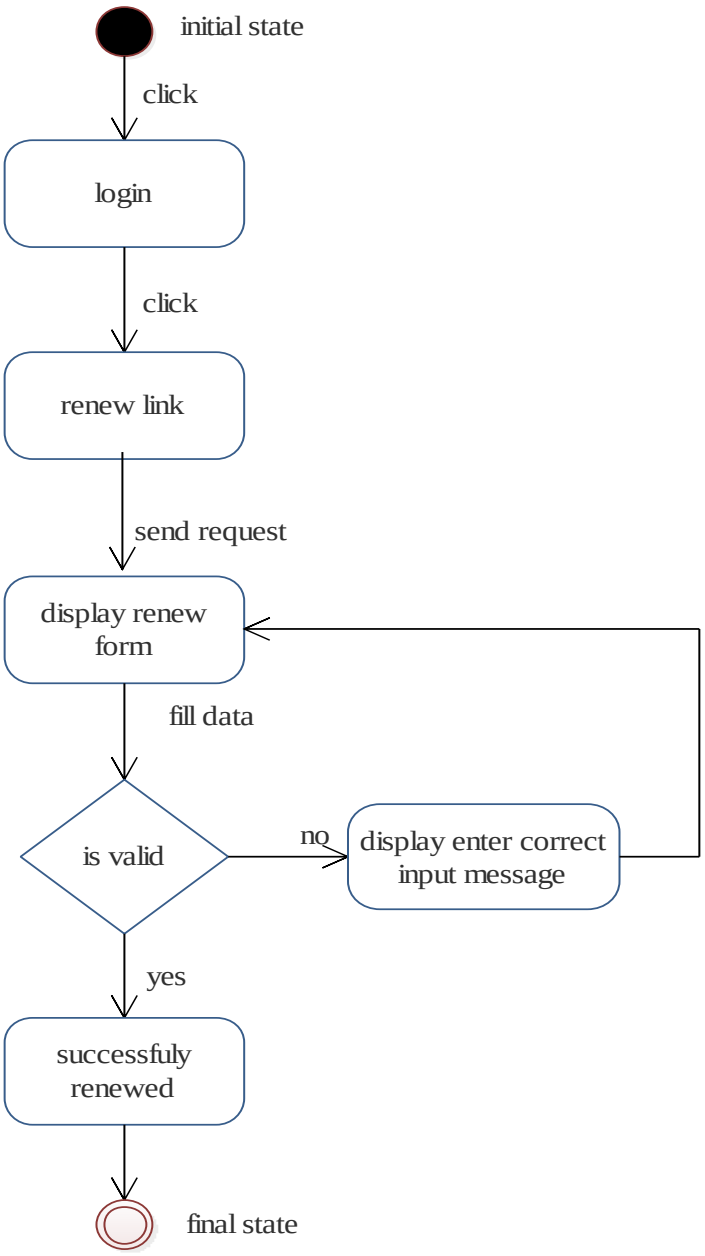


Figure 4.24 State chart diagram for renew license

CHAPTER FIVE

5.SYSTEM DESIGN

System design is the transformation of the analysis model into a system design model. This is the System Design document defining the component, modules, interface and data for a system to satisfy specific requirement document to the trade license management system for Wolkite city trade and industry office. The document includes design considerations, design goals, architecture of the proposed system, deployment design and class interface.

5.1. Design Goals

The Design Goals specify the qualities of the system that should be achieved and addressed during the design of the system. The design goals for the system are grouped into five categories.

5.1.1. Performance

The part of the system to be used for the record office should have a fast response time (real time) with maximum throughput. Furthermore, the system should not be taking up too much space in memory. The record officer has chosen fast response time over throughput and hence the system should try to be more interactive. In the case of the timetabling subsystem, the system should be more reliable in order to satisfy the constraints than fast response time.

5.1.2. Dependability

The Wolkite trade license office needs the system to be highly dependable as it is expected to be used by non- CS professionals. The system should be robust and fault tolerant. Furthermore, as the system is handling sensitive data of the Wolkite trade license office, high emphasis should be given with regards to security, as there are subsystems to be accessed through web.

5.1.3. Maintenance

The system should be easily extensible to add new functionalities at a later stage. It should also be easily modifiable to make changes to the features and functionalities.

5.1.4. End user

Usability: Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. From the end users' perspective, the system should be designed in such a way that it is easy to learn and use, efficient and having few errors if any.

5.1.5. Priorities of Design Goal

Since the system hold an important information (data), the system requires strong security features to protect that valuable information i.e. not allow other users or unauthorized users to access data that has no the right to access it.

5.2. Proposed System Architecture

We use 3-tier for our project because 3- tier architecture provides scalability, performance, availability for the project.

Client Tire (user interface): which runs on the user's computer or in this side trader, manager, License officer and other workers interface exists in this side. It is also called presentation logic is responsible for formatting and presenting data on user's screen.

Server side: This middle tier runs on a server and is often called the application server or the web server connects to the database and gives respond for client request. It handles processing logic, business rule logic and data management logic.

Database Server: that stores the data required by the middle tier. It is also called data storage tire. Database communication, MYSQL queries and completing them via the related API.

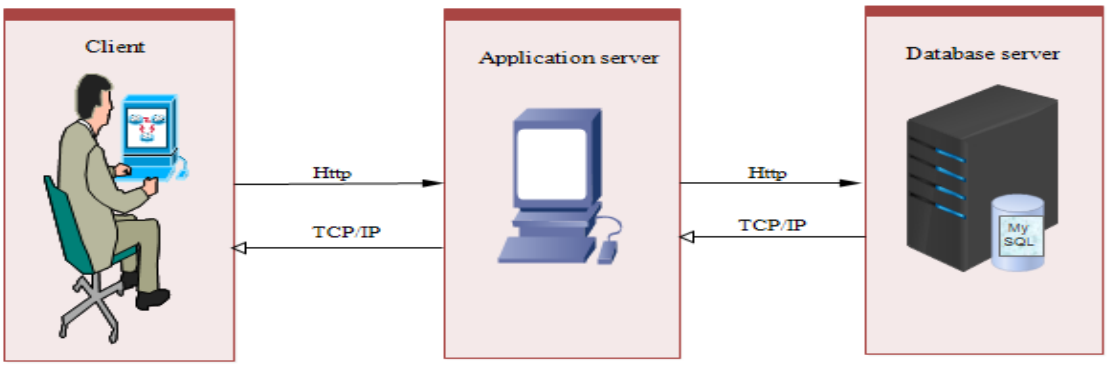


Figure 5.25 Diagram for system architecture

5.2.1. Subsystem Decomposition and Description

Subsystem decompositions will help reduce the complexity of the system. The sub systems that we take the classes that our systems contain and the operation performed in the class. The following are sub systems

Report management sub system: This subsystem allows for managing information and performs this operation.

- View report

Manage account subsystem: in this subsystem, managing of information regard to account and perform.

- Create account
- Deactive account
- Update account

Notice Managing sub system: this sub system handles information of notice and perform.

- Post notice
- View notice

Database Connection Subsystem: this subsystem used for established connection between business class and database management system.

Request management subsystem: This subsystem allows for managing chats and performs the following operation.

- send request
- View request
- Approve request

Comment management subsystem: This subsystem allows for managing comment and performs this operation.

- Reply comment
- Give comment
- View comment

Register management subsystem: This subsystem allows for managing registration process and performs the following activity.

- Register for new license

License management subsystem: this sub system handles information about license and performs the following activity.

- Give license
- Renew license
- Deactive license

Payment management subsystem: this sub system handles information about payment and performs the following activity.

- Pay money
- Check balance

Change language subsystem: this sub system handles all actors (License officer, Manager, Administrator, Trader) choice the corresponding language mean Amharic and English this language choice on the interface of each page. The activity does this is:

- Change language

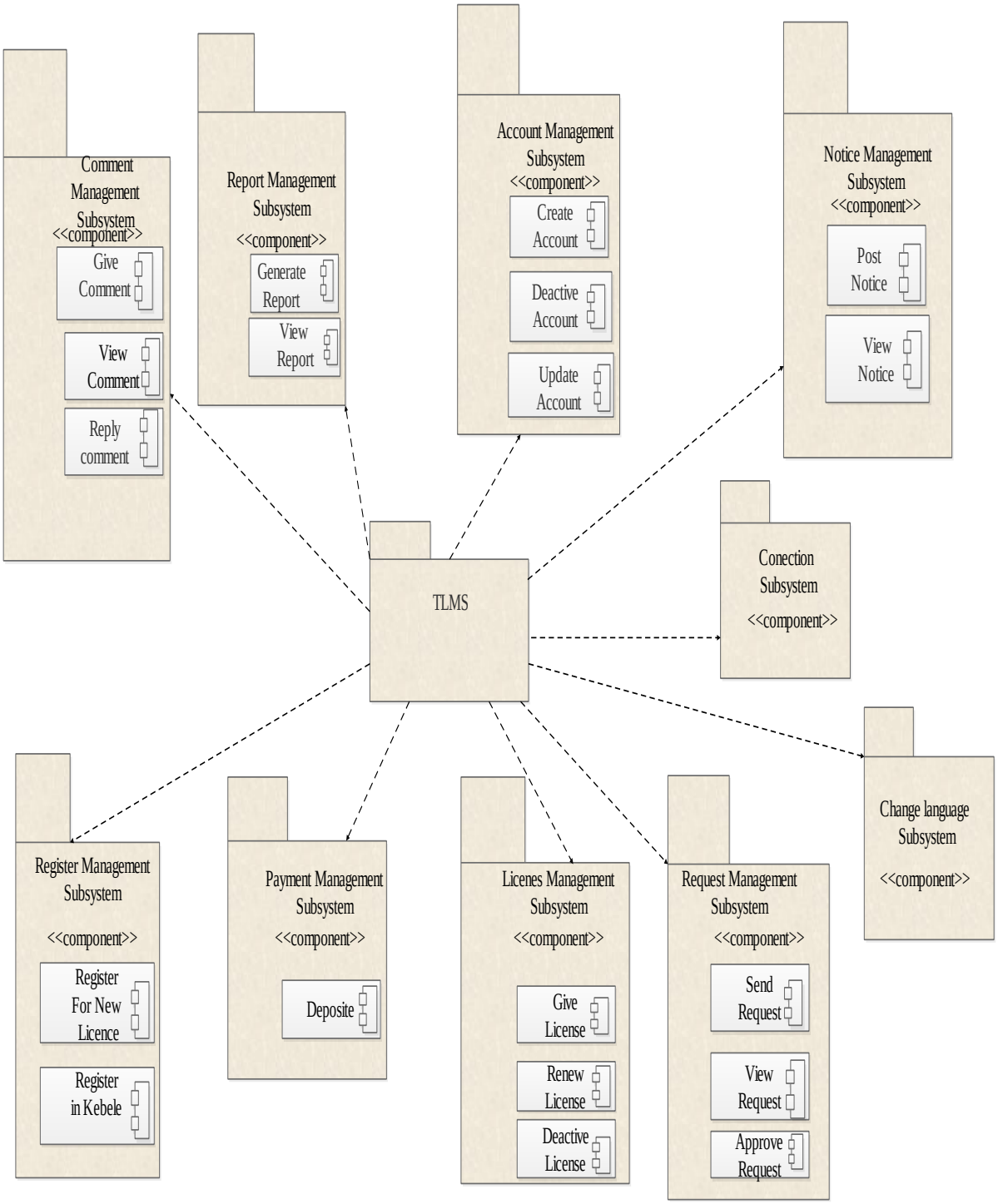


Figure 5.26 Diagram for sub system decomposition

5.2.2. Hardware/Software Mapping

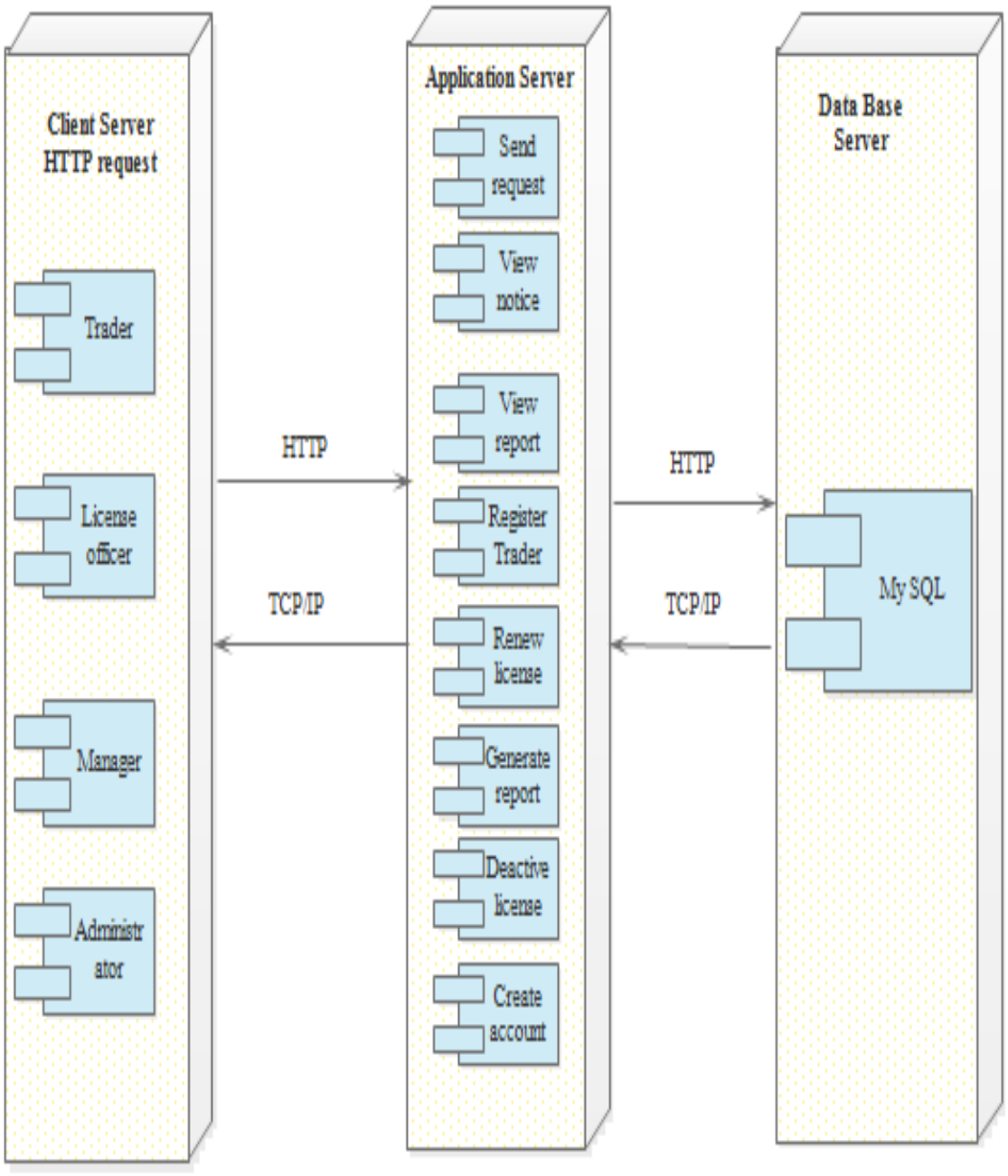


Figure 5.27 Deployment diagram

5.2.3. Detailed Class Diagram

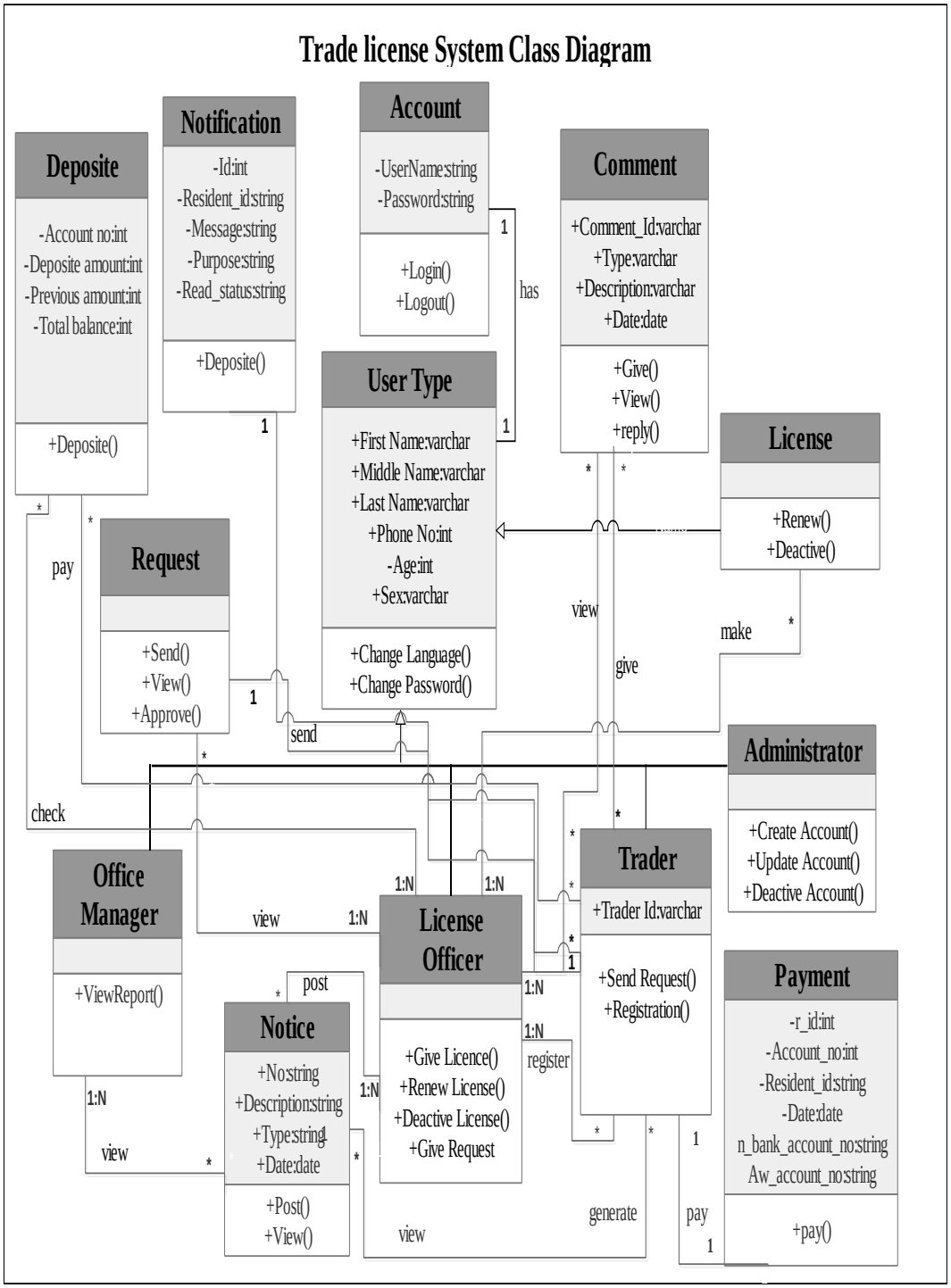
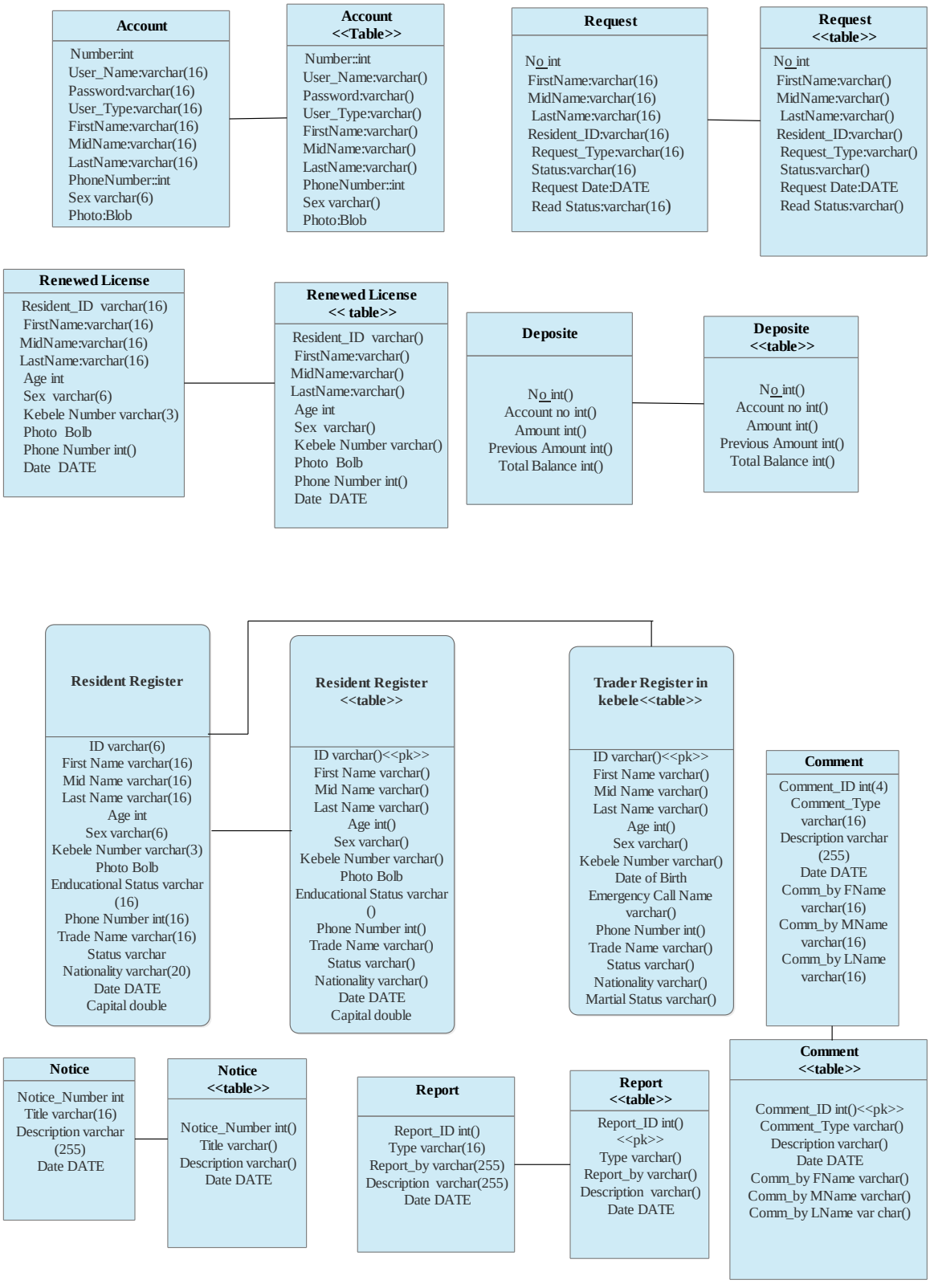


Figure 5.28 Detail class diagram

5.2.4. Persistent Data Management

Mapping class to table



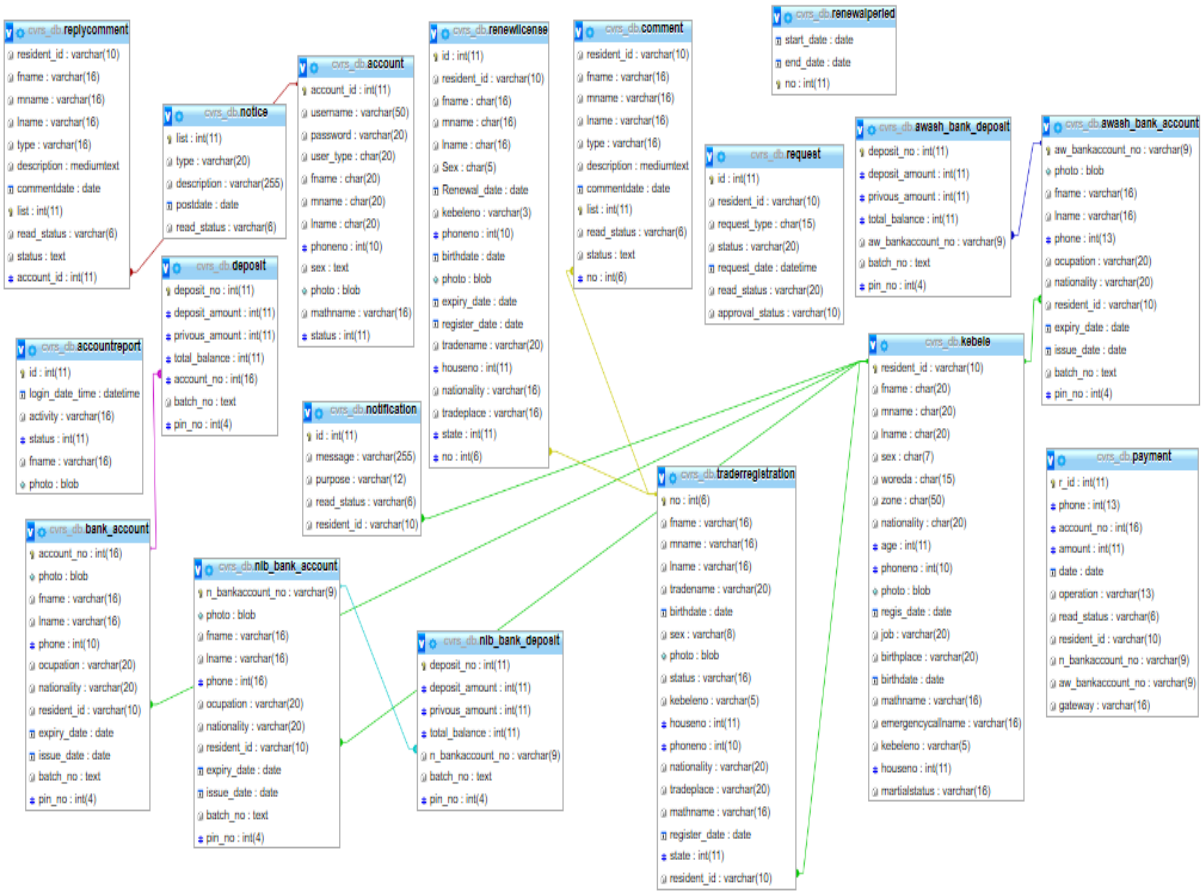


Figure 5.29 Persistent diagram

5.2.5Access Control and Security

	Office Manager	Trader	License Officer	Administrator
Login	YES	YES	YES	YES
Send request	NO	YES	NO	NO
Give comment	NO	YES	NO	NO
View notice	YES	YES	NO	NO
Post notice	NO	NO	YES	NO
View comment	NO	YES	YES	NO
View report	YES	NO	NO	NO
View request	NO	NO	YES	NO
Renew license	NO	NO	YES	NO
Approve request	YES	NO	YES	NO
Reply comment	NO	NO	YES	NO
Deactive license	NO	NO	YES	NO
Register trader	NO	YES	NO	NO
Update account	YES	YES	YES	YES
Deactive account	NO	NO	NO	YES
Create account	NO	NO	NO	YES
Change language	YES	YES	YES	YES

The Access control Matrix for the TLMSas follows:

5.3. Packages

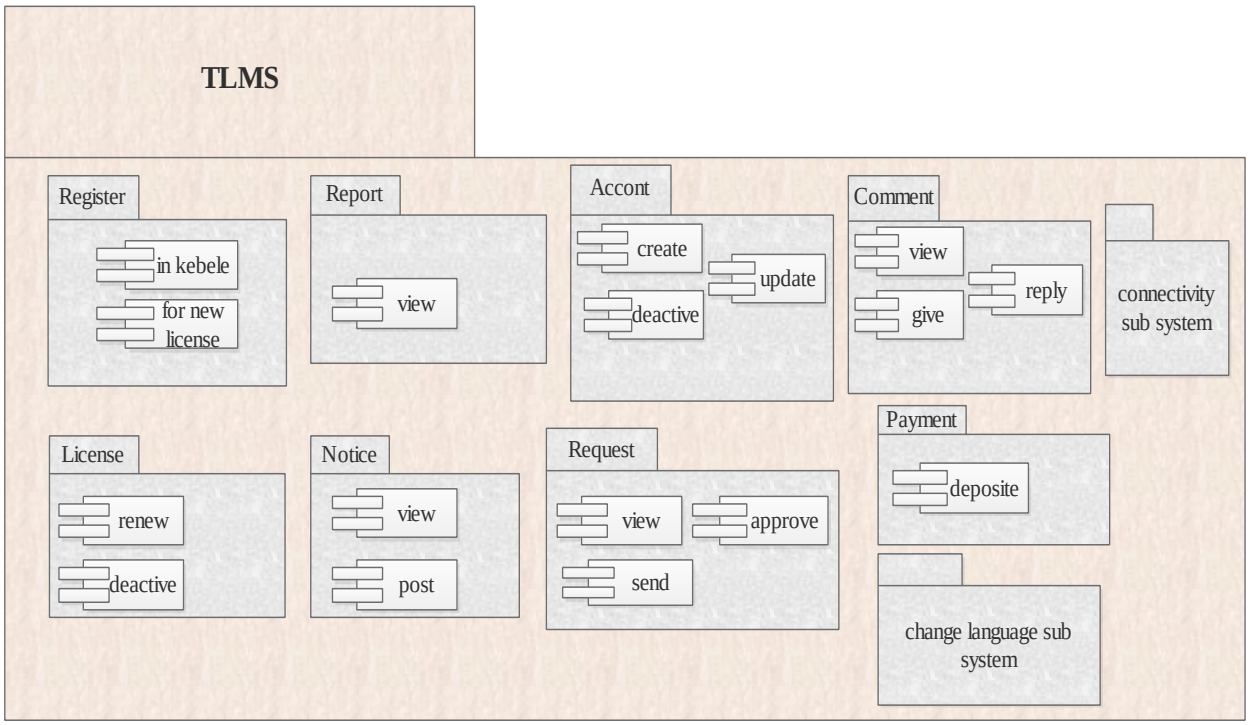


Figure 5.30 Package diagram

5.4. Algorithm Design

Login ()

{

Enter username and password on the login form

validate username and password

If (valid)

If(verify)

Display “the Perspective user page”

Else

Display “error message, and try again”;

}

Give Response ()

{

Fill the required data on the response form

Check the validity of the entered data

If(valid)

{

Display (“Successfully response message “);

Else

Display (“error message, Enter correct input”);

}

Post Notice ()

{

Insert the input data on the post notice form

Check the validity of the input data

If(valid)

{

Display (“The successfulness of message”);

Else

Display (“Incorrect input error message “);

}

Register Trader ()

{

Insert the required data on the registration form

Check the validity of the filled data

If(valid)

{

Display (“The successfully register message”);

}

Else

Display (“Registration failed error message “);

}

Give Comment ()

{

Insert the comment on the comment form

Check the validity of the input data

If(valid)

{

Display (“The successfulness of committed message”);

}

Else

Display (“Insert correct input message coming”);

}

Generate Report ()

{

Insert the report on the report generation form

Check the validity of the input data

If(valid)

{

Display (“The successfulness of the report generated message “);

}

Else

Display (“Enter the correct input error message”);

}

Renew License ()

{

Insert the data on the renew license form

Check the correctness of the input data

IF(valid)

{

Display (“The successfulness renewed message”);

}

Else

Display (“In correct input error message coming”);

}

View Request ()

{

Search the requested information from request table

Check the request is there or not

If(found)

{

Display (“The requested data”);

}

Else

Display (“Data not found message”);

}

Change Password ()

{

Insert the old password on the password change form

Enter the new password on the password change form

Confirm the new password on the password change form

Check if it is match or not all the above input

If(match)

{

Display (“Password successfully changed message”);

}

Else

Display (“Password not changed message coming”);

}

5.5. User Interface Design

Figure 5.31 User interface for home page

Figure 5.32 User interface for login

CHAPTER SIX

6.IMPLEMENTATION AND TESTING

Implementation of a project is the step where all the proper planned activities are put into action. The project implementation process involves preparing, maintaining and use of the final product (result) of the project. It refers to the Coding of the all documents gathered starting from requirement analysis to Design phase. It converts the designed phase into the code so that the system would be implemented for the user to be used for the purpose to develop.

6.1. Implementation of the Database

Now days their lot of databases to implement the server-side system. Database simply it is a collection of data that is called relational database this is also relational table .to implement this there is Oracle database, SQL database, MYSQL database etc…In our system we have used MYSQL database management system to implement tables for manipulation of data. Also, we have used Apache server for loading the application server in the browser. In MYSQL database we identify the table relationship with primary key and foreign key constraint and also unique constraint we also apply user id as well as index to relate two tables. As much as possible all tables have no duplication value by using primary key.

6.2. Implementation of the Class Diagram

We Implement all the classes on the design of class diagram:

1. **Trader**
    - **Attribute:** first Name
        - ✓ **Description**: it contains the name for the trader
        - ✓ **Type:** String
        - ✓ **Visibility:** public
    - **Attribute:** last Name
        - ✓ **Description**: it contains the father's name for the trader
        - ✓ **Type:** String
        - ✓ **Visibility:** public
    - **Attribute:** Resident ID

- ✓ **Description**: it contains the ID of the trader
- ✓ **Type:** string
- ✓ **Visibility:** public

❖ **Attribute:** age

- ✓ **Description**: it contains the age of trader
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Attribute:** sex

- ✓ **Description**: it contains the gender of trader
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Method:** login ()

- ✓ **Description:** enables trader, manager, administrator, license officer to login to the system.
- ✓ **Parameter:** none
- ✓ **Visibility:** public

❖ **Method:** Apply registration ()

- ✓ **Description:** enables trader to register.
- ✓ **Parameter:** void
- ✓ **Visibility:** public

2. License officer

❖ **Attribute:** first Name

- ✓ **Description**: it contains the name for the officer
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Attribute:** last Name

- ✓ **Description**: it contains the father's name for the officer
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Attribute: age**

- ✓ **Description**: it contains the age of the officer
- ✓ **Type:** string
- ✓ **Visibility:** public

- **Attribute:** sex
  - **Description**: it contains the gender of the officer
  - **Type:** String
  - **Visibility:** public
- **Method:** login ()
  - **Description:** enables license officer to login to the system.
  - **Parameter:** none
  - **Visibility:** public

3. **Manager**
   - **Attribute:** first Name
     - **Description**: it contains the name for the manager
     - **Type:** String
     - **Visibility:** public
   - **Attribute:** last Name
     - **Description**: it contains the father's name for the manager
     - **Type:** String
     - **Visibility:** public
   - **Attribute: age**
     - **Description**: it contains the age of the manager
     - **Type:** string
     - **Visibility:** public
   - **Attribute:** sex
     - **Description**: it contains the gender of the manager
     - **Type:** String
     - **Visibility:** public
   - **Method:** login ()
     - **Description:** enables license manager to login to the system.
     - **Parameter:** none
     - **Visibility:** public

4. **Administrator**
   - **Attribute:** first Name
     - **Description**: it contains the name for the administrator
     - **Type:** String

- ✓ **Visibility:** public

❖ **Attribute:** last Name

- ✓ **Description**: it contains the father's name for the administrator
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Attribute: age**

- ✓ **Description**: it contains the age of the administrator
- ✓ **Type:** string
- ✓ **Visibility:** public

❖ **Attribute:** sex

- ✓ **Description**: it contains the gender of the administrator
- ✓ **Type:** String
- ✓ **Visibility:** public

❖ **Method:** login ()

- ✓ **Description:** enables license administrator to login to the system.
- ✓ **Parameter:** none
- ✓ **Visibility:** public

6.3. Configuration of the Application Server

The application server or the web server connects to the database and gives respond for client request. It handles processing logic, business rule logic and data management logic.

6.4. Configuration of Application Security

In our trade license management system, we implement input validation by using scripting language like java script. we validate all appropriate forms take correct input as much as possible and in this system we implement encryption and decryption techniques to assure the security like we have used base_64 encoder and decoder technique to decrypt the password when we logged and in our system we have four actors those are have their own access privilege to logged the system assume in our system actors like Trader, License office, Manager, Administrator for all users have their own role to access the system. So, all actors access their own tasks after logged to the system. We also implement session control the session identify all users mean the system authenticate the user if it is manager, trader, license officer, administrator. In our system we list the nonfunctional requirement is that like availability: our system is available 24 hours and 7 days in week if it is internet connection at anywhere because this system is web based and

the other is performance: our system is falsely accessed by the user depends on the hard ware and computer RAM use as well as connection Fastness and also error handling to assure the security in our system we validate all input form by using java script and also for security purpose we use session management and user role based on privilege authorized users access this system

6.5. Implementation of User Interface

Our system user interface design as much as possible user centered mean user-friendly interface by considering different peoples use this system. And the controller is consistent as much as possible use the same font size, color as well as position when we put the controller. Finally, user memory load is decrease when we load the page simply, we can access the system but, within hard ware consideration.

6.6. Testing

The purpose of testing is test in which the entire system as a whole with some forms, code, and modules are tested. In this procedure, we have tested all the functionalities of the System. All errors in the forms, functions, modules have been tested.

6.6.1. Unit Testing

The unit testing is done during coding phase of data entry forms whether the functions are working properly or not.

Tasks that we have performed under this phase

- Prepare unit test plans.
- Identify the unit test objectives.
- Prepare a test case that includes information such as set of test inputs, execution condition and expected output.
- Perform the tests according to our plan
- Analyses the test results

6.6.2. System Testing

The system will be tested against the system requirement to see whether the entire requirements meet and whether the system performs as specified by the requirement. The bringing together of all the programs is that a system comprises for testing purposes. All results should be documented on the test analysis report, Test problem report and on the test analysis approval determination. Any failed components should

be migrated back to the development phase for rework and the passed components should be migrated ahead for security testing.

6.6.3. Integration Testing

This testing is done by using combining two or more modules and it is testing interface between programs (database) in the system rather than testing interface between modules. The group member has understood how the module integration works,

6.6.4. Acceptance Testing

Acceptance testing is the process of testing system prior to its delivery. A system is mainly developed for an end user normally a customer of the organization. A system is said to be accepted if and only if the user of the system is satisfied. In this perspective acceptance testing is widely used to prove that system performs as per the requirements. In acceptance testing the customers provides the input data to validate the system operation. It is also known as functional testing, black-box testing, release acceptance, application testing, confidence testing, final testing and validation testing.

CHAPTER SEVEN

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

Trade License Management System is one of the main Management System found in the Wolkite town. License service to the user in manual system. That means every service is given by Trade license management is paper based. These paper-based service has a lot of problem to the customers in the organization. Some of the problems are: It takes time to get specific services, it consumes money.

The new system that the researchers have been developed in some instance can reduce the problem that is found in Trade license management system. Some of the solutions that our system brings are: unlike manual system users can get service, it saves the time and effort needed to go from home to the organization, it also reduces space requirement.

To develop web-basedtrade license management system the researcher needs to gather different data. So, to gather those data researchers should have to use different method of data collection. Those methods were interviews, document analysis and observation. In addition to that to design the new system researchers used class diagram, use case diagram, activity diagram, sequence diagram, deployment diagram, and we have using Edraw and Visual paradigm software's to draw diagram.

When web-based Trade license management system started its work, most of trade license community can be beneficial. Especially License officer, administrators are more beneficial. Because it reduces the time, error, cost and effort that is required to get services.

7.2. Recommendation

According to scope of our project we develop online trade license system for Wolkite trade license. While doing this system we faced different types of challenges, but by the License of all the group members and the advisor, we are now able to reach to the final result. Because of the time limitation we cannot do beyond to our scopes, but in the future, we believe that this system can be fully operational by having enough time and full information. We developed the present system based on sample data. Hence, we recommended the future developer.

- ✓ Maintaining the system according to the services of the organization after applying and testing the acceptance of the project by the organization.
- ✓ Adding taxing system .
- ✓ Adding mobile payment transfer.
- ✓ Activate license with penalty by checking trader tax

8.References

[1] S. W, Object Primer, scotland: Douglas Baldwin and Greg W, 2004.

[2] Smath, Object oreinted analysis and design, India: Brahma, 2015.

[3] goorgeberg, "testingcomp," 02 08 2019. [Online]. Available: www.implimentationtesting.com. [Accessed 02 08 2019].

[4] joseph, "google," 15 10 2019. [Online]. Available: www.google.recomendationsample. [Accessed 18 10 2019].

[5] e. system, Interviewee, *trade license.* [Interview]. 03 03 2019.

[6] simon, Object Oriented system analysis and design using UML, India: Bennett, 2005.

9.APPENDICES

9.1. Appendix A: Interview and Questionnaires

1.What are the problems that faced trader related to manual trade license?

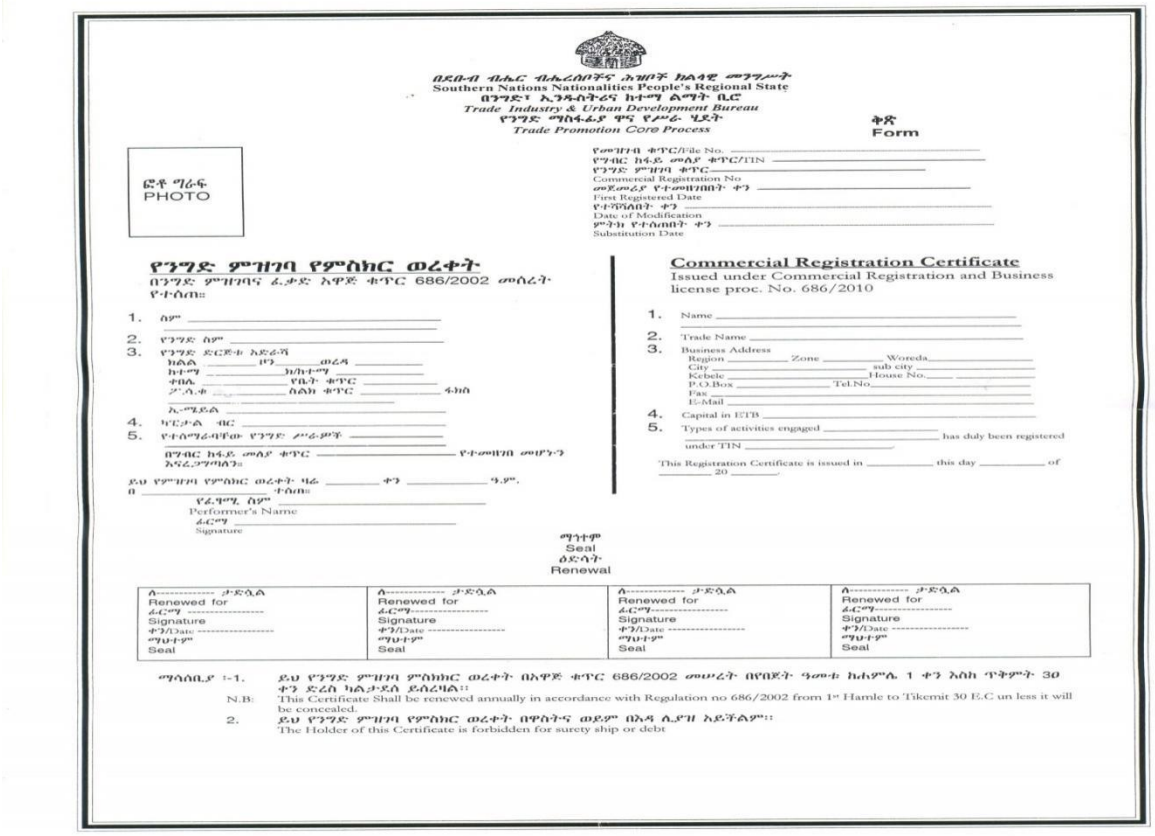
2.How manual trade license system affect the trader and government trade agency?

3.What are the benefits of Automated trade license for trader and industry office?

9.2. Appendix B: Existing System Forms and Reports

ፍቃድ ለማውጣት የሚያስፈልጉ
መስፈርቶች

✓Tin No (የጣት አሻራ) ፎቶ ኮፒ
✓ከገቢዎች ፍቃድ እንዲያወጡ የሚል ደብዳቤ
✓4 ጉርድ ፎቶ ✓
✓የይዞታ ማረጋገጫ (የተከራይ አከራይ ውል) ፎቶ ኮፒ
✓ የቀበሌ መታወቂያ ፎቶ ኮፒ
✓የብቃት ማረጋገጫ ፎቶ ኮፒ
✓ክፍያ 212 ብር ብቻ



የደቡብ ብሔር ብሔረሰቦችና ሕዝቦች ክልላዊ መንግሥት
Southern Nations Nationalities People's Regional State
በንግድ፣ ኢንዱስትሪና ከተማ ልማት ቢሮ
Trade Industry & Urban Development Bureau
የንግድ ማስፋፊያ ዋና የሥራ ሂደት
Trade Promotion Core Process

ቅጽ
Form

ፎቶ ግራፍ
PHOTO

የመዝገብ ቁጥር/File No.
የግብር ከፋይ መለያ ቁጥር/TIN
የንግድ ምዝገባ ቁጥር
Commercial Registration No
መጀመሪያ የተመዘገበበት ቀን
First Registered Date
የተሻሻለበት ቀን
Date of Modification
ምትክ የተሰጠበት ቀን
Substitution Date

የንግድ ምዝገባ የምስክር ወረቀት

በንግድ ምዝገባና ፈቃድ አዋጅ ቁጥር 686/2002 መሰረት የተሰጠ።

1. ስም
2. የንግድ ስም
3. የንግድ ድርጅቱ አድራሻ
   ክልል ዞን ወረዳ
   ከተማ ክ/ከተማ
   ቀበሌ የቤት ቁጥር
   ፖ.ሳ.ቁ ስልክ ቁጥር ፋክስ
   ኢ-ሜይል
4. ካፒታል ብር
5. የተሰማሩባቸው የንግድ ሥራዎች
   በግብር ከፋይ መለያ ቁጥር የተመዘገበ መሆኑን እናረጋግጣለን።

ይህ የምዝገባ የምስክር ወረቀት ዛሬ ቀን ዓ.ም. በ ተሰጠ።

የፈፃሚ ስም
Performer's Name
ፊርማ
Signature

ማኅተም
Seal
ዕድሳት
Renewal

ለ---------- ታድሷል	ለ---------- ታድሷል	ለ---------- ታድሷል	ለ---------- ታድሷል
Renewed for	Renewed for	Renewed for	Renewed for
ፊርማ	ፊርማ	ፊርማ	ፊርማ
Signature	Signature	Signature	Signature
ቀን/Date	ቀን/Date	ቀን/Date	ቀን/Date
ማህተም	ማህተም	ማህተም	ማህተም
Seal	Seal	Seal	Seal

ማሳሰቢያ ፡-1. ይህ የንግድ ምዝገባ የምስክር ወረቀት በአዋጅ ቁጥር 686/2002 መሠረት በየዐደት ዓመቱ ከሐምሌ 1 ቀን እስከ ጥቅምት 30 ቀን ድረስ ካልታደሰ ይሰረዛል።

N.B: This Certificate Shall be renewed annually in accordance with Regulation no 686/2002 from 1st Hamle to Tikemit 30 E.C un less it will be concealed.

2. ይህ የንግድ ምዝገባ የምስክር ወረቀት በዋስትና ወይም በሕጻ ሊያዝ አይችልም።
The Holder of this Certificate is forbidden for surety ship or debt

Commercial Registration Certificate
Issued under Commercial Registration and Business license proc. No. 686/2010

1. Name
2. Trade Name
3. Business Address
   Region Zone Woreda
   City sub city
   Kebele House No.
   P.O.Box Tel.No.
   Fax
   E-Mail
4. Capital in ETB
5. Types of activities engaged has duly been registered under TIN

This Registration Certificate is issued in this day of 20

9.3. Appendix C: Sample Source Code

```
<?php

session_start();

include ('includes/db_con.php');

if (isset($_POST['login'])) {

$username = mysql_real_escape_string($_POST['username']);

$password =mysql_real_escape_string( $_POST['password']);

$pass=base64_encode($password);

//$pass = md5($password);

$query = mysql_query("SELECT *FROM account where username='$username'and
password='$pass'");

if (!$query) {
```

```
echo mysql_error();

}

if (mysql_num_rows($query) > 0) {

$activated = mysql_query("SELECT *FROM account where username='$username' and status='1'");

if (mysql_num_rows($activated) > 0) {

$result = mysql_query("SELECT *FROM account WHERE username='$username' and password='$pass'");

if (mysql_num_rows($result) > 0) {

while ($row = mysql_fetch_assoc($result)) {

$_SESSION['username'] = $username;

$_SESSION['user_type'] = $row['user_type'];

$_SESSION['account_id'] = $row['account_id'];

$name=$row['fname'];

$photo=$row['photo'];


if ($row['user_type'] == 'manager') {

$_SESSION['manager_loged'] = $_SESSION['account_id'] ;

$_SESSION['fname']=$name;

$_SESSION['photo']=$photo;

$fnam= $_SESSION['fname'];

$ph= $_SESSION['photo'];

$sql=mysql_query("insert into
accountreport(fname,photo,login_date_time,activity,status)values(' $fnam','
$ph',now(),'manager_loged','1')");
```

```
header ("Location:manager/OM_index.php");

}

else if ($row['user_type'] == 'Lofficer') {

$_SESSION['Lofficer_loged']=$_SESSION['account_id']; // Initializing Session

$_SESSION['fname']=$name;

$_SESSION['photo']=$photo;

$fnam= $_SESSION['fname'];

$ph= $_SESSION['photo'];


$sql=mysql_query("insert into
accountreport(fname,photo,login_date_time,activity,status)values('$fnam','$ph',now(),'lic
enseOfficer_loged','1')");

header ("Location:Lofficer/LO_index.php");

}

else if ($row['user_type'] == 'Resident') {

$_SESSION['res_loged']=$_SESSION['account_id']; // Initializing Session

$_SESSION['fname']=$name;

$_SESSION['photo']=$photo;

$fnam= $_SESSION['fname'];

$ph= $_SESSION['photo'];

$sql=mysql_query("insert into
accountreport(fname,photo,login_date_time,activity,status)values('$fnam','$ph',now(),'tra
der_loged','1')");

header("Location:trader/R_index.php");
```

```
}

else if ($row['user_type'] == 'system_admin') {

$_SESSION['sys_loged']=$_SESSION['account_id']; // Initializing Session

$_SESSION['fname']=$name;

$_SESSION['photo']=$photo;

$fnam= $_SESSION['fname'];

$ph= $_SESSION['photo'];

$sql=mysql_query("insert into
accountreport(fname,photo,login_date_time,activity,status)values('$fnam','$ph',now(),'Sy
stemAdmin_loged','1')");

header("Location:admin/s_index.php");

}

}

}

else {

echo '<script type="text/javascript">alert("You are entered incorrect username and
password!");window:location=\'login_page.php\';</script>';

}

}

else {

echo '<script type="text/javascript"> alert("Sorry Your Account is Deactivated Contact
With Adminstrator!");window:location=\'login_page.php\';</script>';

}

}
```

```
else {
echo '<script type="text/javascript"> alert("Account  not
found!");window:location=\'login_page.php\';</script>';
}
mysql_close($bd);
}
?>
```