

# **BULE HORA UNIVERSITY**



## **FACULTY OF ENGINEERING AND TECHNOLOGY**

### **DEPARTMENT OF COMPUTER SCIENCE**

#### **PROJECT TITLE- ONLINE TRADE LICENSE MANAGEMENT SYSTEM FOR BULE HORA TOWN**

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## Approval sheet

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Team leaders of the final year project for computer science department.

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2. Mr. Firomsa Taye (cordinator)

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## **Abstract**

The aim of this project document is to design and implement online trade license management systems for Bule Hora town, which consists of website interface and database in amazing way. The system includes two website applications: trader's application and administrator application. Manager of trade office is one type of administrator.

The online trade license management system for Bule Hora town provides the online trade license management process. It should include several basic functions, such as register new traders, give trade license, cancel, update, and renew license, online transaction, and admin management system and so on.

User can browse system for services. Trader can also update or modify his account information. When user is administrator after login online trade and market development office website he can manage all employ and traders.

To design and implement the online trade license management system the team is using UML diagram and programming languages such as, PHP, MYSQL database, java script, CSS, and html.



## List of Acronyms

BR.....	Business Rule
MYSQL.....	MY Structural Query Language
DB.....	Database
RAM.....	Random access Memory
SD.....	Sequence Diagram
TIN.....	Tax Identity Number
UC.....	Use Case
UI.....	User Interface
TLMS.....	Trade license management system
UML.....	Unified Modeling Language
PHP.....	Pre Hyper Processor
HTTP.....	Hyper Text Transfer Protocol
CD.....	Compact Disk
ETB.....	Ethiopian Birr
TCP.....	Transfer Control

# **CHAPTER-1**

## **1.1 INTRODUCTION**

The development of different computer based system has provided tremendous advantages for many organizations and institutions. Many developed countries are using computer technology to accomplish their everyday activities effectively and efficiently. But in our country many organization are still using manual system. Bule Hora town trade and market development office is one of such organization that used paper based system to perform their tasks. The current system is inefficient for better performance of all tasks, for managing trade license related works to give license and control it.

[1]Trade involves the transfer of the goods or services from one person or entity to another in exchange for other goods or services or for money. Possible synonyms of trade include commerce and financial transaction. A network that allows trade to process is called a market. Modern traders negotiate through a medium of exchange, such as money. As a result, buying can be separated from selling, or earning. The invention of money and later credit, paper money and non-physical money greatly simplified and promoted trade. Trade between two traders is called bilateral trade, while trade between more than two traders is called multilateral trade.

Trade license is a certificate or document which grant to permission to carry on a particular trade or business for which it is issued. It is given by government for starting the business. It ensures that the new business or started business is legal.

### **1.1 Background Information of the Organization**

Bule Hora town trade and market development office was formally organized in 2005 E.C. It is located at south of Bule Hora town Ethio telecom office around 700 meters. The organization of Bule Hora town trade and market development office had three (3) offices which they perform different tasks and there are 11 employs with different work assigned for them. Those offices are:

1. Trade registration, license giving and modernization of trade and market office.
2. Trade legality and trade system controlling office.
3. Customers and trader's rights protecting office.

### **Mission**

The organization is mainly aimed to make sure that the people are benefited by providing modern and fast trading system with trade legality and fast market development.

### **Vision**

To automate information system of Bule Hora town trade and market development office and to improve the lives for the people within the town and to stand them with on the behalf of medium income countries at 2012 E.C

## **Goal**

Improve the legal management of all activities done by the organization.

### **Core values**

- Accountability
- Transparency
- Efficiency
- Participation
- Work for change
- Work by cooperation
- Struggle against corruption

## **1.2 Background of the project**

All trade and market development offices have a wide range of long term registration of new coming traders and licensing system as well as payments for the services and annual tax. The registration may be for getting TIN (Tax Identifier Number) or for getting trade license. The license system may be incorporates giving, renewal, and cancellation of the license.

Application for registration for license and TIN number reduces paper work, the need of many manpower and costs. The proposed online registration for trade license and the payment system for the services will eliminate all the manual invention and increase the speed of whole process of licensing and payment system.

Generally, the system is web application especially it will allow applicants to fill their personal information online and submit to the system. A trader will have unique name and login password. In this project we are going to design and implement the online registration systems for trade license and the payment system for the services used for Bule Hora town Trade and Market Development Office.

## **1.3 Statement of problem**

The office of Bule Hora town trade and market development office is undertaking its works manually. All the activities like License giving, to updates license, to cancelling license and others are done through manual process.

## **Currently faced problem.**

Applicants have to come to the office for every services like for registration, getting Tin, this lead more cost and time.

- Trader waits much time to get services
- Bule Hora town trade and market development office has a manual application system. This system is time taking when
  - Registering applicants
  - Giving license
  - Renewal license
  - Cancelling license
- It needs many numbers of employs to do a few tasks.
- Time loss to give information about trade codes for each applicant.
- Searching any files and information is very difficult.
- Add more problems currently existing in the organization
- Difficult access to customer request.
- No more place to store file of all people.
- No more office and office equipment to give service for traders.
- Travel problem and waiting in queue.
- More expert professional is required.
- Customer service is not guaranteed more.
- They do not keep strict deadlines.
- Work is more difficult for that organization secretaries

## **1.4 Objectives of the project**

### **1.4.1 General Objectives**

The main objective of this project is to develop online application for taking trade license for Bule Hora town trade and market development office.

### **1.4.2 Specific objectives**

Some of the Specific Objects are the followings:-

- To understand process and its efficiency of the existing system(Understand the existing system processes and its efficiencies)
- To review the current system to know the problem.
- To Identify functional and nonfunctional requirements.
- To Propose possible solutions for current system.
- To model the new system using object oriented methodologies.

- Finally to implement and test the new system.

## **1.5 Significance of the project**

At the end this project has the significance listed bellows:-

- Each task is going to be performed easily
- Can perform many tasks in short periods of time
- Change the manual system of the organization to computerized system
- Reduce unnecessary resource wastage.
- Reduce employee overload work.
- Information accessing is easy and fast.
- System gives fast service to the customer
- Unauthorized person will be out of service

## **1.6 Scope and Limitation of the project**

### **❖ Scope**

The system includes functionalities of registering applicants for license, give the license for those who fulfill the requirements, update license annually, and cancel license.

An applicant who to be a trader performs the registration process through online application by accessing the organizations website. Applicant has to submit or fill his/her bank details and the tax identity number (TIN) taken from the revenues authority. Having the TIN number an applicant performs registering for license. The scope of this project is limited to only the details listed below.

1. Online registration for applicants.
2. Giving trade license
3. Updating trade license
4. Deleting trade license
5. Confirming applicant whether he/she fulfills the necessary rule and regulation of the organization.
6. Payment system through transaction

### ❖ Limitation

- Trading system has much functionality. But we are limited only to trade license giving, renewal, and its legal cancelation. The annual tax payment system is not included because of the authority to collect tax is not a power of the office.
- The trade controlling system is not included in the system.

## 1.7 Feasibility Analysis

In this phase we have seen different feasibility measures such as operational feasibility, technical feasibility, economic feasibility, behavioral/political feasibility and schedule feasibility of new system.

### 1.7.1 Operational feasibility

The new system is operationally feasible because:-

Satisfy the user needs or requirements Provides the end users and administrator with timely, accurate, reliable, flexible and usefully formatted information. Provide adequate throughput and response time. The system offers adequate control to protect against fraud.

### 1.7.2 Technical feasibility

The new system does not require new professional person that process the implemented Web based because the system does not need many employees which need special computer skill.

The system help human power should not be much loose. As much as possible the system is easily understandable. So, each and every customer in the organization can access without any confusion. The team of project has also understanding of php, MySQL, html, JavaScript, to do project.

### 1.7.3 Economic feasibility

When the system is totally computerized it does not be require much more cost beyond the capacity of the organization by automating the system. This is one advantage of solving problems with Bule Hora town trade and market development office. But to develop good project it needs more than 20000 ETB.

#### 1.7.3.1 Tangible feasibility

This Trade license management system is expected that it will be free from wastage economy of organization. Because, it will save the budget of organization. That is spending on papers and employees.

#### 1.7.3.2 Intangible feasibility

The intangible benefits we suggest from the developing system are:

- Increase reliability
- Increase portability








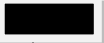






- Increase efficiency
- Faster processing
- Organized file management
- Reduce cost for manual data management
- Easy update & retrieval on stored records
- Less errors occur



#### **1.7.4 Behavioral/political feasibility**

Online line trade license is politically feasible because, it is used for citizen of the country and government. so developing of online trade license system has nothing effect on society. And also it has high acceptance before the government. It support government development goal and it is not out of government policy.

#### **1.7.5 Schedule feasibility**

The schedule for this project will be feasible due to proper information exchange between the developing team and the Advisor. And also the time set to develop the system is enough to complete at the predefined day and time since the project is supposed to be completed in 8 months i.e. 4 months for documentation and the rest 4 months for implementation and testing.

Tasks	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Title selection								
Planning								
Literature review								
Data collection								
Analysis propose solution								
Proposal submission								
Proposal Presentation								
Design the project								
Interface design								
Design the database(coding)								
Testing								
Error handling								
Report writing								
Final project Presentation								

**Keys:**  It indicates the works which is completed.  
 It indicates the work which is not completed.

**Table 1 Time scheduling**

#### 1.7.5.1 Cost Benefit analysis

The team of developing project had analyzed benefits that are gained from project. The cost which is specified under cost breakdown are sufficient to do the project. When we compare with total cost which is perish for getting service in manual way is very high. Because of this the proposed will access successfully by minimum cost when compared with the existing system we can say it requires minimum cost.



### 1.7.5.2 Cost of the project

cost project should be determined by developing team if any wants to take, and we have no purpose to sold it but for the future we have plan to sell it if it is good project

### 1.7.5.3 Cost Breakdown

As any requirement of the project, the business issue also should be considered for the sake of task handling and the organization objectives to be attained and covers the following lists.

- Cost related to Developers
- Cost related Hardware Materials
- Cost related to Software

We divide it into different tasks to decide developer costs (payment) that are:-

**Table 2 cost related to developer**

No	Task	Cost
1	Requirement Gathering	200
2	Requirement Analysis	400
3	Design	600
4	Implementation	1000
5	Testing Code	500
6	Maintenance	4000
	Total	6400

**Table 3 cost related hardware**

No	Material	Quantity	Unit price	Total Price
1	Laptop	1	14000	14000
2	CD	10	7	70
3	Flash	4	100	400
4	Pens and paper	10	4	40
5	Copy and Print	160	3	480
			Total	14990

**Table 4 Cost Related To Software**

<b>No</b>	<b>Software</b>	<b>Cost</b>
1	Microsoft Visio 2013	20
2	Windows 7 ,8.1& 8 Operating system	30
3	Microsoft office 2007	20
4	Macromedia Dreamweaver	20
5	Wamp Server	20
6	MYSQL	20
7	A vast anti-virus	15
8	Other necessary software	15
	Total	200

Total cost for the Project = 19000.00ETB

#### **1.7.5.4 Work breakdown**

Work Breakdown Structure: Is a deliverable oriented decomposition of a project into smaller components. It defines and groups a project's discrete work elements in a way that helps organize and define the total work scope of the project.

Whatever tasks which are operated by responsible person require time, so to manage and process each and every task; the time should be divided for specific task.

Scheduling the project tasks is an important project planning activity. It involves deciding which tasks would be taken up when. In order to schedule the project activities, a software project manager needs to do the following:

- Identify all the tasks needed to complete the project.
- Break down large tasks into small activities.
- Determine the dependencies among different activities.
- Establish the most likely estimates for the time durations necessary to complete the activities.
- Plan the starting and ending dates for various activities.
- Determine the critical path; a critical path is the chain of activities that determines the duration of the project.

Id	Tasks	Duration	Responsible
1	Project Initiation and planning <ul style="list-style-type: none"> <li>➤ Gathering Information</li> <li>➤ Title selection</li> </ul>	1 weak	All
2	Description of the project <ul style="list-style-type: none"> <li>➤ Introduction:</li> <li>➤ Background Information</li> <li>➤ Statement of the Problem</li> <li>➤ Objective of the problem</li> <li>➤ Scope &amp; Limitation of the project</li> <li>➤ Methodology</li> <li>➤ Feasibility study</li> <li>➤ Project Plan Activity</li> </ul>	2 weak	All
3	Current system <ul style="list-style-type: none"> <li>➤ Description of current system</li> <li>➤ Major Functions of Existing system with Clear Inputs, Outputs and Process</li> <li>➤ Problem in the existing system</li> <li>➤ Business Rules</li> <li>➤ Proposed solution for the new system</li> </ul>	3 weak	All
4	<ul style="list-style-type: none"> <li>➤ Proposed System</li> <li>➤ Functional Requirements</li> <li>➤ Non Functional Requirements</li> <li>➤ User Interface identifying</li> <li>➤ Security and access permission</li> </ul>	4 weak	All
5	<ul style="list-style-type: none"> <li>➤ System analysis and System Modeling</li> <li>➤ System Requirement Specifications (SRS)</li> </ul>	5 weak	All

	<ul style="list-style-type: none"> <li>➤ Use case diagram, and there description</li> <li>➤ Actor specification</li> <li>➤ Sequence diagram</li> <li>➤ Activity diagram</li> <li>➤ Class diagram</li> </ul>		
6	<ul style="list-style-type: none"> <li>➤ System Design</li> <li>➤ System architecture</li> <li>➤ State chart diagram</li> <li>➤ Collaboration diagram</li> <li>➤ Deployment diagram</li> <li>➤ Persistence data management</li> <li>➤ Access control and security</li> <li>➤ User Interface design</li> </ul>	13 week	All

**Table 5 work breakdown**

## **1.8 Beneficiaries of the project**

### **❖ For Traders**

- Can apply the registration for trade license, license renewal, canceling license, and payments for services and the annual tax from anywhere at a given time.
- Allow traders to get information online where they are and can be easily awarded.
- Increase profit by decreasing the distance barrier that traders were affected by, when they are taking, updating, and cancelling the license.

### **❖ For organization**

Bule Hora town trade and market development office will be get benefit after completion of the project in many ways for example,

- To be competitive, profitable, and manage all traders affairs easily.
- The access to information will be easier, faster, safer, and also in a neat and well organized way.
- Employee cost will be reduced with respect to both time and money.

## 1.9 Methodology

To perform our project we used the following techniques,

### ❖ Data collection methods

**Observation:** The project team has conducted both office of Bule Hora town trade and market development office and Revenue administration office to know the activities performed and studied the working environment and also we observed how the trader document or file is stored.

**Interview:** The teams were also interviewed to gather information concerning our topic for the overall functionalities, activities, and process of the trading system Mr. Amza Sayid (The General Manager office of organization)

**Questionnaire's:** we also prepared a number of question and we asked them.

**Document analysis:** We have analysed documents like the registration form which helps to build the contents of the registration form.

## 1.10 Development tools

Development tool includes both the hardware and the software tools or requirements that are used to complete the given research (project).

The project we desire to develop is by following software engineering process which consists of proven tools. These tools are technological products like computer programs.

In this project, we will use some software and hardware tools, to list them like:

**Table 6 Hardware tool**

Item no	Hardware	Capacity	Specification
1	RAM	4GB	To store data temporarily.
2	LAPTOP	4GB	To collect information at the place
3	Desktop computer	500GB	To do overall activities
4	Digital camera	18mega pixel	To capture photo

5	Flash	8GB	To hold file
6	Paper		
7	CD ROM	4.7GB	To take backup
8	Pen	1 packet	To write any things

**Table 7 Software tool**

Item no	Software	Specification
1	Microsoft word	To write, edit and save documents.
2	Visio	To draw diagram.
3	Adobe reader	To read PDF documents portable document format.
4	WAMP Server& MYSQL	To store and access the data and database.
5	Notepad++	To write code in simple way.
6.	Php, html, JavaScript, css	To write code
7.	Mysql	For database

### 1.11 Testing Methodology

Testing methodology is the way to know the system functionality whether it is working according to the specification, behavioral and performance requirements or error. To find out type of error which occurs during implementation time, it is better to use black-box testing procedure. Because through this testing approach it is possible to test the following errors. Those errors are:-

- Incorrect or missing function error
- Initialization and termination error
- Performance error
- Errors in data structure

## 1.12 Team composition

The followings are tasks of team and their roll on trade license management system project.

Task	Responsible
Data collection & problem analysis	All members
Requirement specifying	All members
Design & construction	All members
Coding	All members
Testing	All members

**Table 8 team composition**


## **CHAPTER 2**

### **DESCRIPTION OF EXISTING SYSTEM**

#### **2.1 Overview of Existing system**

The current system of trade license management system is manual. The existing system working process has no speed and not give timely information for traders. In order to give, update, renew, and cancel license along with collecting the service fee. For an applicant to be a trader or to have a trade license, he/she must come with a Kebele identification card given from the Kebele administrator and the tax identity number (TIN) which is given by the revenues authority by verifying his/her fingerprint if the applicant is an individual or who is willing to work alone. Genetic fingerprint is not mandatory for those who apply for trade license as a group. An applicant should have a house for built for trading purpose, if the house is rented he/she has to show the legal agreement made in between them. Applicants must provide the documents that are originals or copies certified by the issuer for his/her identity, age and citizenship. Applicants should have valid bank account. After having registered he/she has to select one of the trade codes and the manager checks the requirements. An applicant should pay for the registration, for the license when he/she wants to have, or in updating and cancellation. If all are ok the trader take trade license which allows him/her to do any trade activity based on that trade code.





In Oromia Regional State

Trade and Market Development Office

Certificate for Trade license Registration

Image

File No

Tin No

Trade registration No

Registration date

Renewal date

Update date

This license is based on legal trade license Registration proclamation no 686/2002.

1. Name

2. Trade code name

Trading place address:

Region  Zone  woreda  Town  m.phone

This applicant are registered with Tin No

Name  Sign.

Seal

**Figure 1 Applicants Registration Form**

### 2.1.1 Problem of existing system

The existing system has many problems currently because it is manual. The followings are problem of the existing system they used to provides services for their peoples

- File loss, and damage of file
- Ordering and placing of file is very difficult.
- The system is manual and so many error are faced.

- Applicants has to come to the office for every service, this lead more cost and time.
- Trader waits much time to get service
- Bule Hora town trade and market development office has a manual application system. This system is time taking when
  - ♦ Registering applicants
  - ♦ Giving license
  - ♦ Renewal license
  - ♦ Cancelling license

### **2.1.2 Strength and weakness of current system**

Currently Bule Hora town trade and market development office is using manual methods to all activities concerning trade license like registering, and license giving system so since it is manual it had the following weakness and strength

#### **Strength of current system**

- The payment of service was added on the organization account; this reduces the extravagance of birr.
- Any task could not be done without permission of manager/signature.
- The license can be prepared and given for an applicant if the conditions are met.

#### **Weakness of current system**

- Activities performed in the Trade license management system is done manually.
- License giving can take much time, much manpower effort and many losses of trader information
- Getting necessary report about the license management is difficult and takes long time.
- Officials not being able to search the created file on time.
- There is error in operation since it is so manual.
- Approving trade by several designations is time consuming activity.

### **2.1.3 Business rule of the existing system**

A business rule is effectively an operating principle or polices that we try to specify for both the existing system and the new system must satisfy. The organization has the following principles in the existing system which includes:

**#BR1:** Applicant must have Keble Identification Card.

**#BR2:** Applicant must come with TIN number given from the revenues authority.

**#BR3:** Applicant must have a built house for trading purpose. If it is rented he/she has to show the legal agreement made between them.

**#BR4:** Applicant must have valid bank account.

**#BR 5:** Applicant should pay 5 ETB to be successfully registered.

**#BR6:** Trader must pay 105 ETB to take trade license.

**#BR7:** Trader must pay 105 ETB to update trade license.

**#BR8:** Trader must pay 105 ETB to renewal trade license.

## **Business rule of new system**

Our proposed system includes the following operating principles or rules:

**BR1:** Authorized to the system.

Users must have a valid user name and password

**BR2:** An applicant he/she must pay service fees otherwise cannot get the service.

**BR3:** An applicant he/she must select trade code for the license.

**BR4:** An applicant he/she must has a TIN number taken from the revenues authority.

**BR5:** System administrator creates, delete and update account for other Actors.

### **2.1.4 Major Functions of Existing system with clear Inputs, outputs and process**

The major functions of the existing system are the following:

- Trader's application and license giving
- Renewal of license
- Update license
- Cancel trade license

**Table 9 Trader's application and license giving**

Trader's application and license giving	
Input	Trader's application and license giving form
Process	The applicant he/she must come with the following. The TIN number is given by revenues authority by taking the applicant fingerprint if applicant is coming alone. Fingerprint is not needed for group applicants. If the house is rented he/she has to show the common agreement approved by the legal body. After this all the requirement can be checked by the office. The coming trader selects one trade code

	and applies to the office after filling the written form.
Output	Then the license giving office after checking the above requirements give's the licenses to the applicant.

**Table 10 Renewal of license**

Renewal of license	
Input	Renewal of license form
Process	The license holder has to go to the office having a clearance from the revenues authority showing details of annual tax payment
Output	License is renewed annually.

**Table 11 Update license**

Update license	
Input	Update license form
Process	License holder can request the office to update his/her license when <ul style="list-style-type: none"> <li>➤ There is loss in capital (means when budget or capital crisis happen).</li> <li>➤ There is upgrade in capital.</li> </ul>
Output	If the requirements meet update for the license is completed and the manager makes changes to the traders profile in the cabinet.

**Table 12 Cancel trade license**

Cancel trade license	
Input	Cancel trade license form
Process	Trade license can be cancelled if the one of the following situations happen and get acceptance. <ul style="list-style-type: none"> <li>➤ Where there is less competence.</li> <li>➤ Where there is falling of the risk in business.</li> <li>➤ During death of holder.</li> <li>➤ During leaving the country.</li> <li>➤ When holder does not pay annual tax payment.</li> <li>➤ When holder performs illegally</li> </ul>
Output	Cancel trade license

### **2.1.5 Report generation in the existing system**

In an existing system there are different reports generated for different purposes. Those reports include about giving of license and renewal of license, about the update and cancel licenses.

The manager generates report monthly and annually what activities are performed, the report is manual and it takes time.

## **2.2 Proposed solution for the new system that address problems of the existing system**

The proposed solutions for the new system that will address problems of the existing system that are declared by the team of project's are the followings:

- Trade license operation such as registration for trade license, approval of trade license, updating of trade licenses are based on website rather than not website based.
- All information of organization like rules and regulation, notification will be posted to website.
- Files of all stacks holders will be posted to database and this will survive it from any file lose.
- Every error does not rise and if it would be created it would be corrected in easy ways.
- There is no payment error in new system.
- It is easy to control trade license activity.

## **2.3 Overview of proposed system**

To overcome problem of manual system online trade license management is proposed. After observing the current manual system and identifying all the problems occurred during every activity on the existing system, the project team has decided to design and implement online system for Bule Hora town trade and market development office. The online trade license automates each and every activities of manual system and increases throughputs. It was created for trade license management that has the following features:

- The central objective of proposed system is to provide online facilities to trade license office
- The proposed system was very secure since all users inter to the system by their user accounts.
- It can generate various reports when and where required.
- The new system saves employees from time wasting when they gave services to traders.
- The proposed system very fast to do all operation.
- The new system remove weakness, no more travel, no more waiting in queue.
- The entire registration done through online and no physical presence is required.
- Easy access to customer request

### **2.3.1 Functional Requirements**

Functional requirements describe the interactions between the system and its Environment independent of its implementation. The environment includes the user and any other external system with which the system interacts. The system performs its activities by using the database.

After the project is complete the system will do the following:

- Validate data and store it without error.
- The system should Registering applicants for trade license,
- The system should Give license
- The system should Renewal of the license,
- The system should Update the license,
- The system should Cancel the license,
- Payment system for services fee (transaction).
- The system should Generate reports
- The system should send notification to traders to renounce them that they have to renewal their license through mailing system.

#### **2.3.1.1 Performance Requirements**

A performance requirement specifies the speed or operational effectiveness of a capability that must be delivered by the system.

- Valid login response shall occur within 1 second when request has been made.
- Invalid login response shall occur within 1 second.
- The system shall register applicants for trade license in at most 2 minutes
- The system shall answer the traders question in per one day

#### **2.3.1.2 Process requirements**

- The customer has privilege to access the system through his personal information.
- The skilled person interacts with the system properly.

#### **2.3.1.3 Input requirements**

- The system must be identify what is input happens.
- Search user request.
- Verify the requested information

#### **2.3.1.4 Output requirements**

- The system generates report for traders, managers and administrator.
- The system shall answer user question based on organization task.

#### **2.3.1.5 Storage requirements**

- The system should store all the data related with all the tasks performed into a database.

#### **2.3.2 Nonfunctional Requirements**

- Nonfunctional requirements describe user-visible aspects of the system that are not directly related with the functional behavior of the system.

- Nonfunctional requirements include Quantitative constraints, such as response time (i.e., how fast the system reacts to user Commands) or accuracy (i.e., how precise are the system's numerical answers).

#### **2.3.2.1 Performance**

The system should have a quick response time for a single request made. It is expected that the software would perform functionally all the requirements that are specified by the organization.

#### **2.3.2.2 User interface**

The application should have a user interface which is simple to use and negotiable through each page. The system is user friendly. The system shall be attractive to use.

#### **2.3.2.3 Security and access permission**

Since information about the traders is secret the system should be able to give account for each trader. The system should allow traders to login to the system. If the trader has failed to enter a valid username and password, the system should again prompt to enter valid username and password after displaying a message that tells him/her to enter correct username and password. If the username and password are correct the system should allow them to get the services. so the system must be allow login for only authorized users.

#### **2.3.2.4 Backup and Recovery**

The system should support back up to database or sql and recovery mechanism

### **2.4 Assumptions and Constraints**

#### **2.4.1 Assumptions**

State the assumptions associated with development of the system, where assumptions are defined as future situations, beyond the control of the project, whose outcomes influence the success of a project. The following are examples of assumptions:

- Availability of a hardware/software platform
- Developments in technology

#### **2.4.2 Constraints**

Constraints are limitations imposed on the project, such as the limitation of cost, schedule, or resources, and you have to work within the boundaries restricted by these constraints.

- Project schedule/time limit
- Experience of working with different program.
- Problem of getting the companies information as needed that means on time.
- Light and internet availability.
- Absence of resources.

## Chapter 3

### System Analysis or System modeling (Modeling of the Existing and Proposed System using the chosen methodology)

#### 3.1 Introduction

System modeling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that system. In this phase we are models the new system based on notation of unified modeling language (UML). Modeling of system helps us to know functionality of the system. The models includes

- Environment of the system.
- Interactions between a system and its environment, or between the components of a system
- The structure of the data that is processed by the system.
- Model of the dynamic behavior of the system and how it responds to events.

In this chapter we use **sequence diagram** (to shows how processes operate with one another and in what order), **use case diagram** (to represent the interaction of user with system), **activity diagram** (to show the representations of workflow of stepwise activities and actions with support for choice, iteration and concurrency) and **class diagram** (to describe the structure of a the system by showing the system's class their attributes, operations (or methods) and the relationships among objects).

#### 3.2 System Requirement Specifications (SRS)

We can divide requirements in to two parts. Hardware and Software requirements.

Hardware and software requirements for this project are listed below.

##### Hardware Requirements

- Computer
- Printer
- Pen Drive

##### Software Requirements

- Notepad++
- E-draw
- Xampp server or Wampserver
- Microsoft Windows



- Microsoft-Office
- Adobe Dreamweaver.

Browsers like, Firefox, chrome, baidu and uc browser.

### **3.3 Use case diagrams**

Use case diagram is a UML diagram that is used for describing user scenarios and capturing user needs. It is used during the analysis phase to represent the external behaviors (actors, the boundary and use cases including the association in between them).

The system which we are proposing has 14 use cases and 4 actors.

**Use cases are:**

- UC-01:- Apply Registration
- UC-02:- Login
- UC-03:- Pay service fee
- UC-04:- Transfer money
- UC-05:- add tradecode
- UC-06:- Give License
- UC-07:- Renew License
- UC-08:- Update License
- UC-09:- Cancel License
- UC-10:- Generate Report
- UC-11:- View Report
- UC-12:- Manage Account
- UC-13:- Manage Tradecode
- UC-14:- View payment

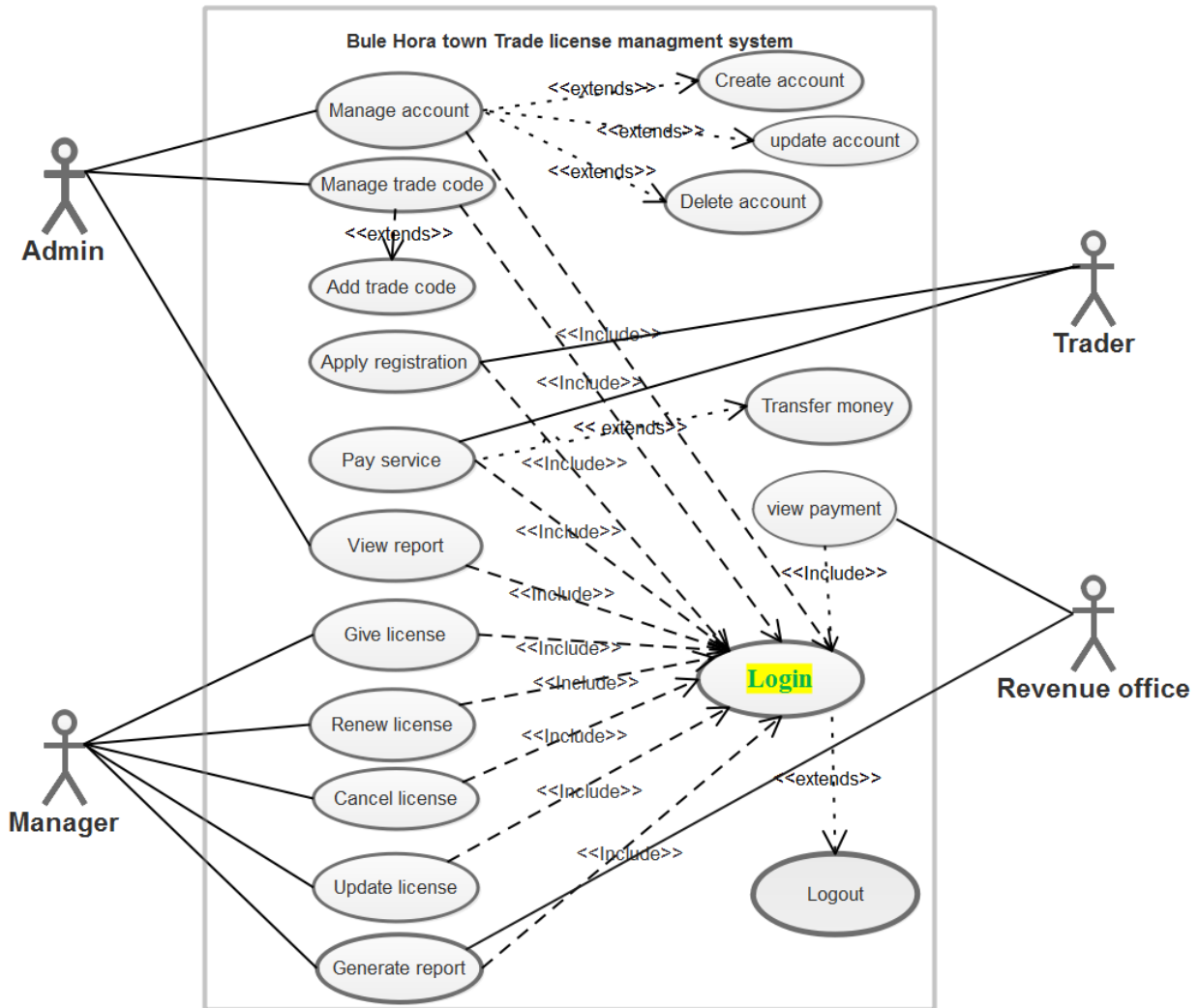


Figure 2 use case diagram

### 3.3.1 Actor specification

The systems contain four (4) actors.

#### Actors

- Administrator
- Manager
- Trader
- Revenue office

### 3.3.2 Use case description

#### Use case description for apply registration

Name: apply registration

**Use case ID: UC-01**

**Primary actor:** Applicant

**Description:** applicant wants to be a trader for this he/she has to have a registration.

**Precondition:** applicant wants to have license.

**Post condition:** applicant can have license.

**Include: Login**

**Basic course of action:**

1. Applicant browses the website of Bule Hora town trade and market development office
2. Applicant select register menu.
3. System displays the registration form.
4. Applicant fills all detail information.
5. Applicant click on register button.
6. System display conformation message.
7. Use case end.

Alternative course of action: 1A. The requested page does not found.

1A.1. applicant get page not found message.

1A.2. applicant refresh browser and click on try again.

1A.3. applicant leaves the page.

Alternative course of action: 4B. Applicant fills wrong information.

4B.1. System displays error message.

4B.2. use case continues at step 4 of basic course of action.

**Use case description for login**

**Name: Login**

**Use case ID: UC-02**

**Primary actor:** Administrator, Manager, Applicant

**Description:** To interact with the system.

**Precondition:** applicant and Manager must have username and password.

**Post condition:** System should transfer control to the user main home page to proceed to the desired further actions.

**Basic Course of Action:**

1. User select login menu.
2. System display login page.
3. User inputs username and password and also selects their status whether they are trader or manager, administrator.
4. System validates username and password.
5. System displays main home page.
6. Use case ends.

**Alternate Course 4A:** user is not eligible to login

4A.1. the system determines the user name or password is incorrect.

4A.2. Display wrong username or password entered.

4A.3. Use case continues at step 3 in main course of action.

**Use case description for pay service fee**

**Name:** pay service fee

**Use case ID:** UC-03

**Primary actor:** Applicant

**Description:** applicant pays for the service he/she has used. Traders transfer money from his account to organization account.

**Precondition:** applicant has registered for license and has account.

**Post condition:** system successfully transfers money to the account of the trade and market development office from the applicants account.

**Includes:** login, Transfer Money.

**Basic course of action**

1. Applicant must has register is bank account and his balance/capital during his apply.
2. System validate all information and register it
3. User login by his account a soon as he log in system display apply form.
4. System display messages Your Data saved successfully!

Now through login to the system by your user name and password you can pay for the

license and take it if your application gets acceptance!

5. User chooses continue with login
6. Applicants click on login button and fill his user name and password.
7. User select license, filled form is displayed for him.
8. System requests an applicant to confirm the transfer.
9. Applicant click ok button/confirms.
10. System finishes transaction.
11. System changes applicants account.
12. System generates confirmation number for successful transfer.
13. System sends the license request for manager.
14. Use case end.

**Alternative course of action: 2A applicant fills wrong bank account code.**

2A.1. bank displays please enter correct bank account message.

5A. User leave continue to login.

**Use case description for the give license**

**Use case name:** give license

**Use case ID:** UC-06

**Primary actor:** Manager

**Description:** after an applicant request to have license and has paid for taking license the manager prepare the license and give to him/her.

**Precondition:** applicant must be registered for license.

**Post condition:** manager allows an applicant to take the license.

**Includes:** login

**Basic course of the action:**

1. Manager browses the website.
2. Manager selects license request menu.
3. System displays applicant's request.
4. Manager check the code the applicant has send.
5. Manager click on prepare license menu.
6. System display license form.
7. Manager fills information on the form.

8. Manager click on print button.
9. Manager put the seal on license.
10. Manager scans the license.
11. Manager sends the license through mail.
12. Use case end.

Alternative course of action: 4A code not match.

4A. 1 Manager send mail saying you are not allowed.

#### **Use case descriptions for renewal license**

**Use case name:** renewal license

**Use case ID:** UC-07

**Primary actor:** Manager

**Description:** after an applicant request to renew license and has paid the fee for license renewal the manager can renew the license.

**Precondition:** applicant need to renew license. Manager must login to system

**Post condition:** applicant's license renewed for the year.

**Includes:** login

**Basic course of the action:**

1. Manager browses the website.
2. Manager selects renew license menu.
3. System displays applicants request to renew license.
4. Manager renews the license.
5. Use case ends.

Alternative course of the action: 3A. There are no new requests.

3A.1 manager leaves the page.

#### **Use case descriptions for update license**

**Use case name:** update license

**Use case ID:** UC-08

**Primary actor:** Manager

**Description:** after an applicant request to update license and has paid the fee for license updating the manager can update the license.

**Precondition:** applicant need to update license. Manager must login to system

**Post condition:** applicant's license updated for the year.

**Includes:** login

**Basic course of the action:**

1. Manager browses the website.
2. Manager selects update license menu.
3. System displays applicants request to update the license.
4. Manager updates the license.
5. Use case ends

Alternative course of the action: 3A. There are no new requests.

3A.1 manager leaves the page.

**Use case description for the cancel license**

**Use case name:** cancel license

**Use case ID:** UC-09

**Primary actor:** Manager

**Description:** manager cancels trader's license when there is illegal action or when trader has encountered business crash.

**Precondition:** applicant needs to cancel license or by the manager himself. Applicants have to send their reason to cancel along with an approved document from Keble administrator. Manager must login to system.

**Post condition:** applicants can't do with their license.

**Includes:** login

**Basic course of action:**

1. Manager browses the website.
2. Manager selects license cancelation request menu.
3. System displays applicants request to cancel the license.
4. Manager cancels the license.
5. Use case ends.

Alternative course of action: 3A. There are no new requests.

3A.1 manager leaves the page.

### **Use case description for generate report**

**Use case name:** generate report

**Use case ID:** UC-10

**Primary actor:** Manager

**Description:** manager needs to prepare a report over he works in daily or weekly. Manager checks works done within the same day for daily report and within the week for weekly reports similarly for monthly and annually.

**Precondition:** manager needs to have report Manager must login to system

**Post condition:** reports effectively generated.

**Includes:** login

**Basic course of the action:**

1. Manager browses the home page.
2. Manager select generate report menu.
3. System displays report form.
4. Manager select report type (daily, weekly, monthly, and annually).
5. System display selected report form.
6. Manager writes the report and click on save button.
7. Use case ends.

**Alternative course of action:** 1A. Browser fails to open the website.

1A.1 System display page not found message.

1A.2 Manager refreshes the browser.

1A.3 Manager leaves.

### **Use case description for view report**

**Use case name:** View report

**Use case ID:** UC-11

**Primary actor:** Administrator



**Description:** Administrator needs to see a report over he works in daily or weekly done in office.

**Precondition:** Administrator must login to system

**Post condition:** Administrator can see reports of office.

**Includes:** login

**Basic course of action:**

1. Administrator browses the home page.
2. Administrator select view report menu.
3. System displays reports.
4. Administrator view reports.
5. Use case ends.

**Alternative course of action:** 1A. Browser fails to open the website.

1A.1 System display page not found message.

1A.2 Administrator refreshes the browser.

1A.3Administrator leaves

### **Use case description for manage account**

**Use case name:** manage account

**Use case ID:** UC-12

**Primary actor:** Administrator

**Description:** Administrator it manage the account of the actors whom participants on the system

**Precondition:** Administrator must login to system

**Post condition:** account effectively manageable.

**Includes:** login

**Basic course of the action:**

1. Administrator browses the home page.

2. Administrator select manage account menu.
3. System displays form.
4. Administrator select account types (create, delete, update, and change password).
5. System display selected account form.
6. Use case ends.

**Alternative course of action:** 1A. Browser fails to open the website.

1A.1 System display page not found message.

1A.2 Administrator refreshes the browser.

1A.3Administrator leaves.

**Use case description for manage trade code**

**Use case name:** manage trade code

**Use case ID:** UC-13

**Primary actor:** Administrator

**Description:** Administrator needs to see a report over he works in daily or weekly done in office.

**Precondition:** Administrator must login to system

**Post condition:** Administrator can manage trade code.

**Includes:** login

**Basic course of action:**

1. Administrator browses the home page.
2. Administrator select manage trade code menu.
3. System displays form.
4. Administrator select account types (add, delete, update).
5. System display selected account form.
6. Use case ends.

**Alternative course of action:** 1A. Browser fails to open the website.

1A.1 System display page not found message.

1A.2 Administrator refreshes the browser.

1A.3Administrator leaves

### 3.4 Sequence Diagram

Sequence diagrams are an interaction diagrams that shows how processes operate with one another and in what order. It shows interaction of objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of use case scenarios. Sequence diagrams show how objects communicate with each other in terms of a temporal sequence of messages. The time flow is the most visible aspect in these diagrams, as messages are sequenced according to a vertical timeline and also the lifespan of objects associated to those messages is reported. Sequence diagrams to simplify the development the system throughout this project. Among those sequence diagrams the most needed in the project is illustrated below.

#### 1. sequence diagram for login

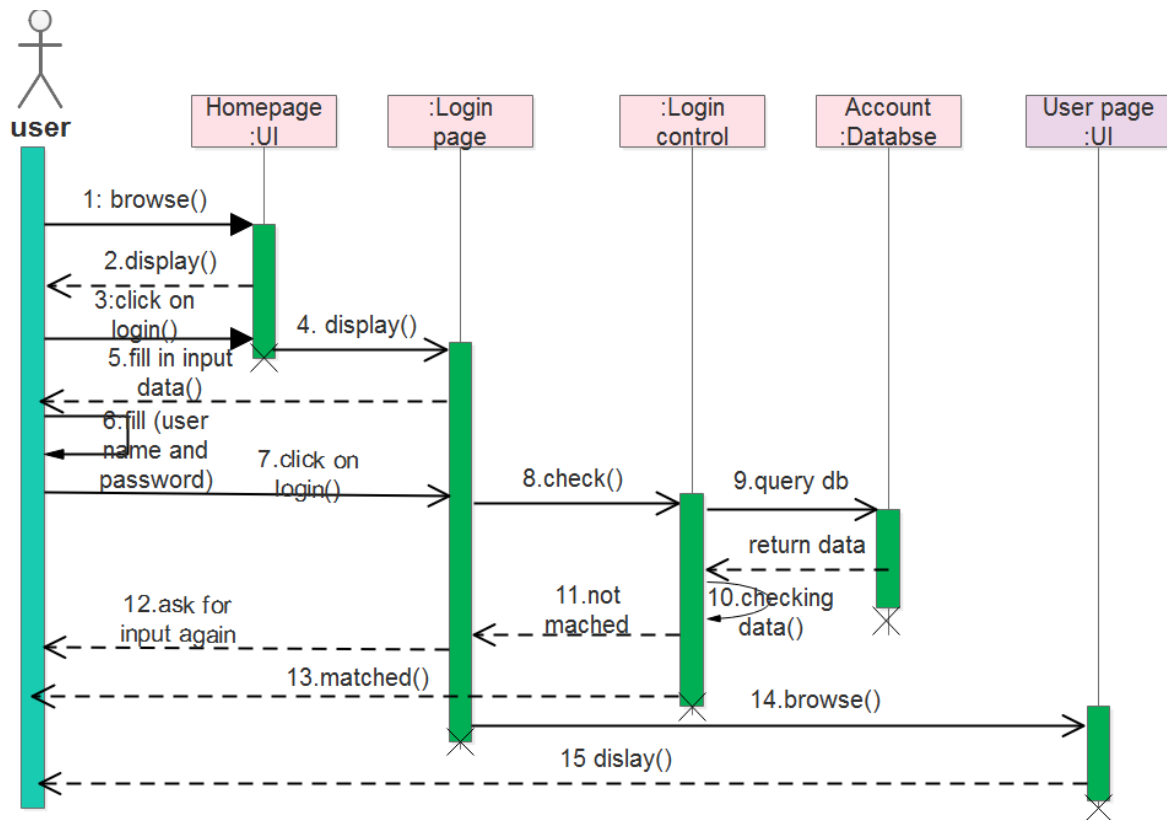


Figure 3 Sequence diagram for login

## 2. sequence diagram for applicant/trader registration

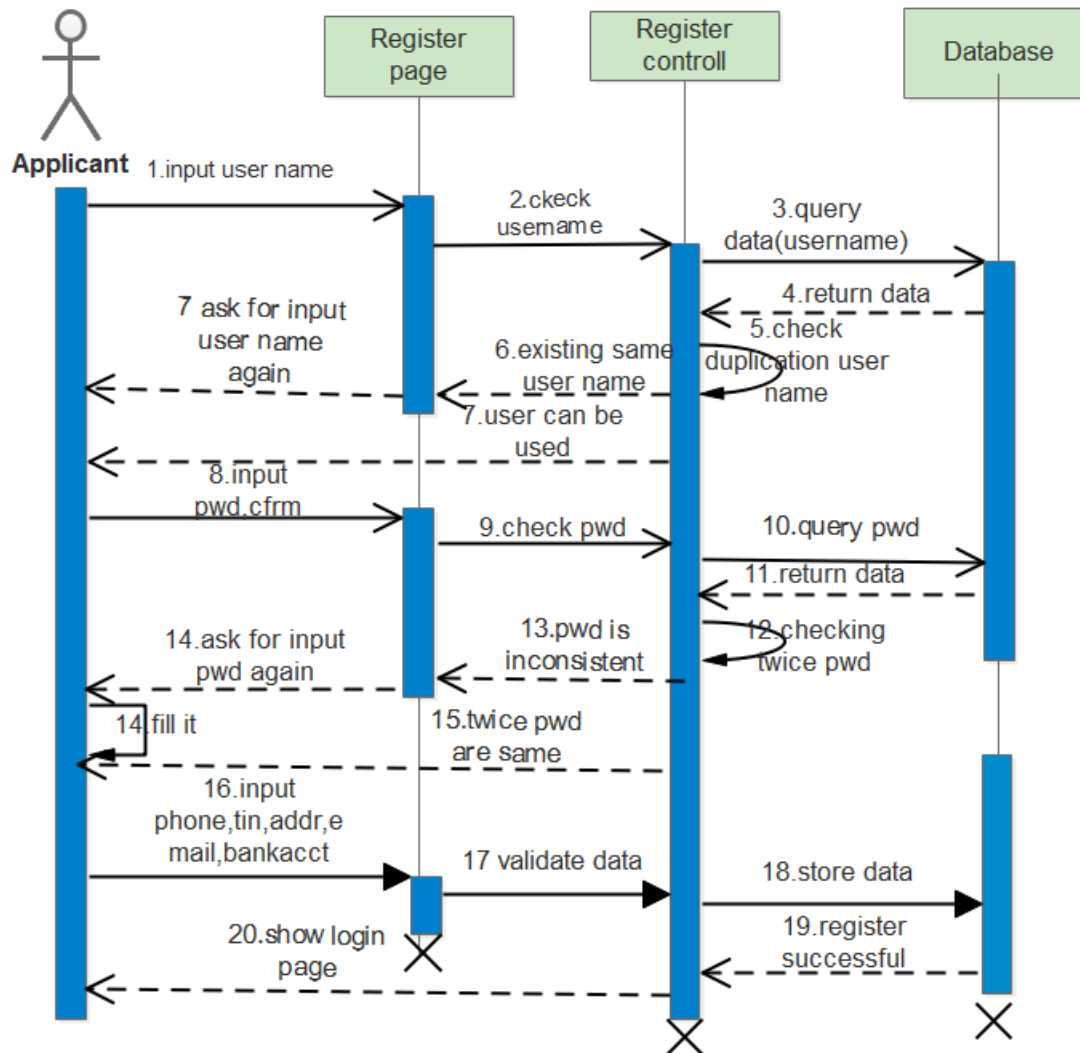


Figure 4 sequence diagram for Apply registration

### 3. sequence diagram for Pay service fee

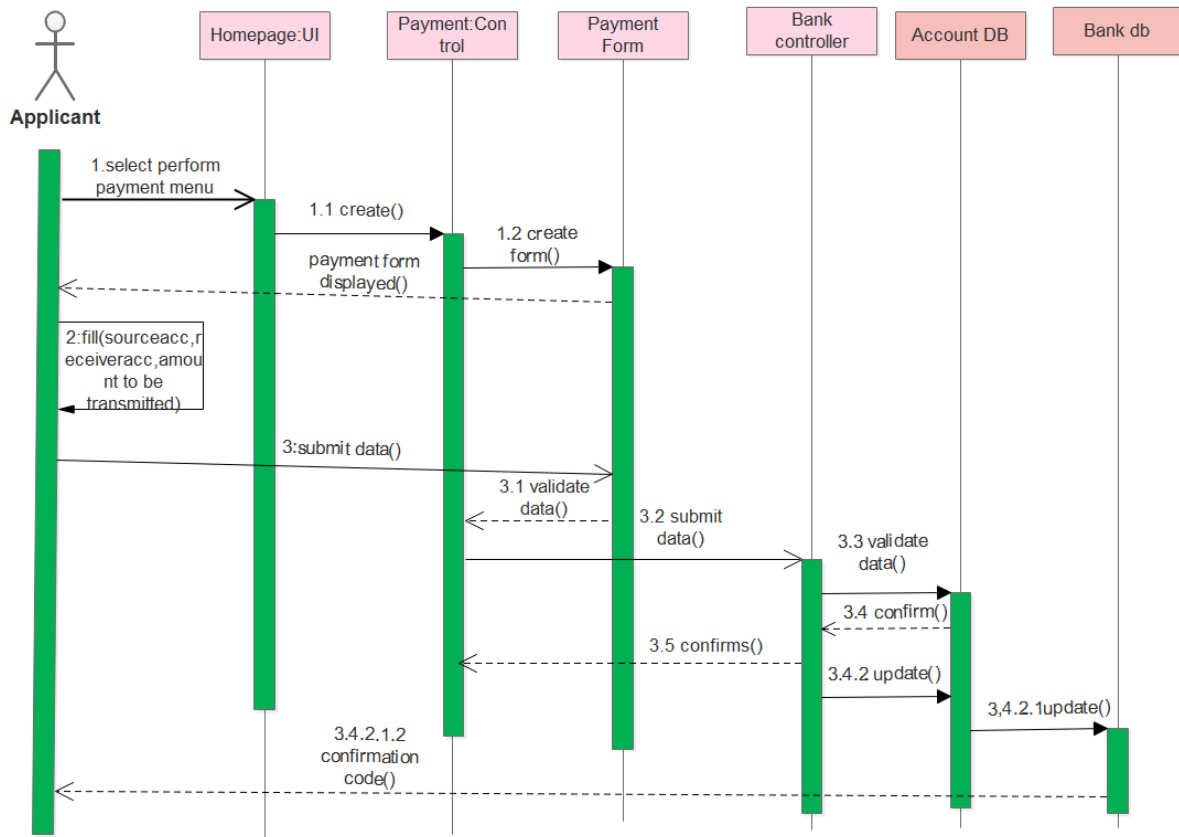


Figure 5 sequence diagram for pay service fee

#### 4. sequence diagram for Give license

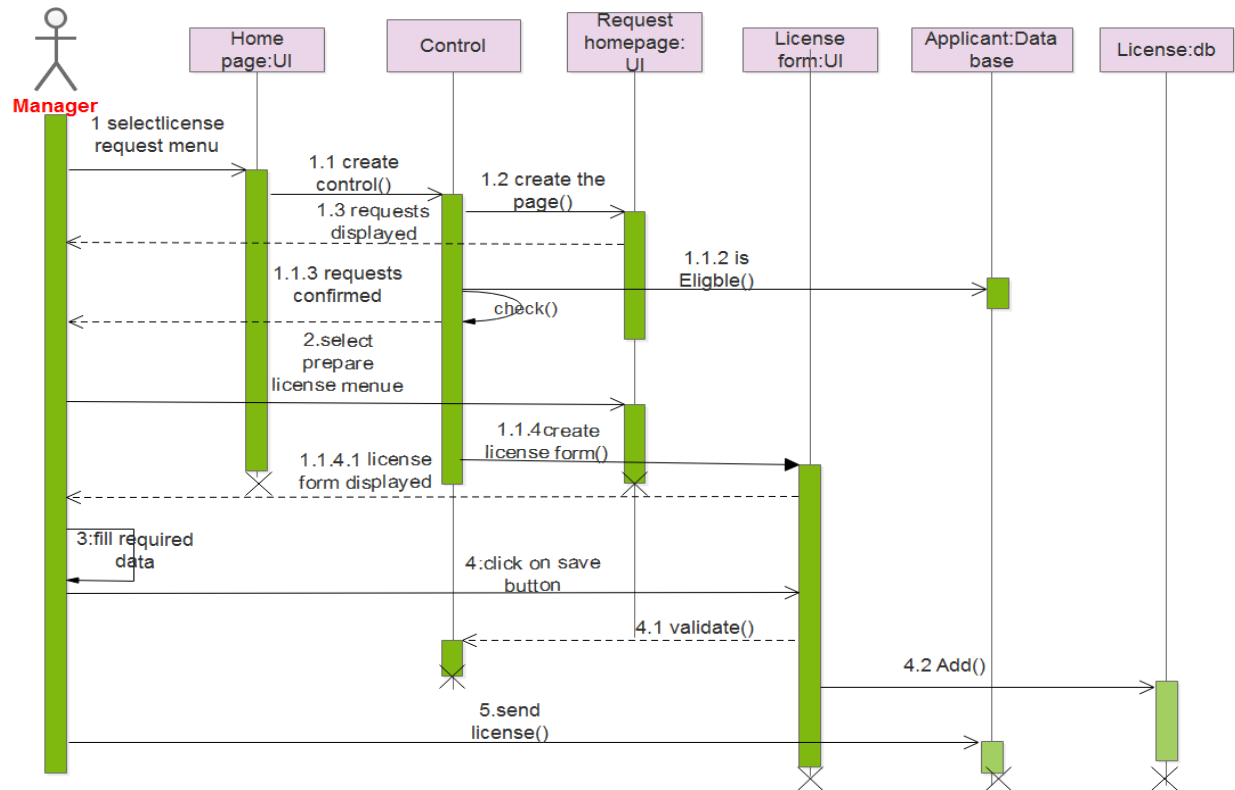


Figure 6 sequence diagram for Give license

## 5: sequence diagram for Renew license

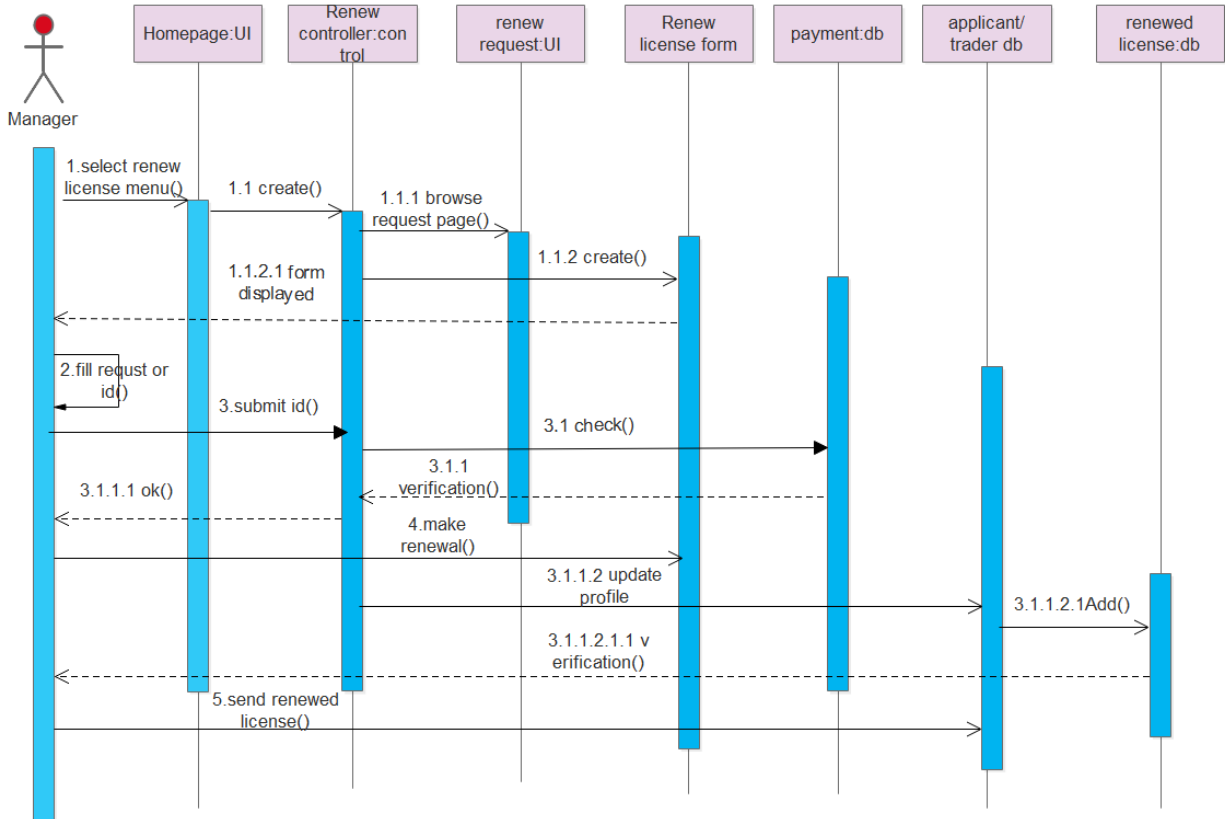


Figure 7 sequence diagram for Renew license

## 6: sequence diagram for cancel license

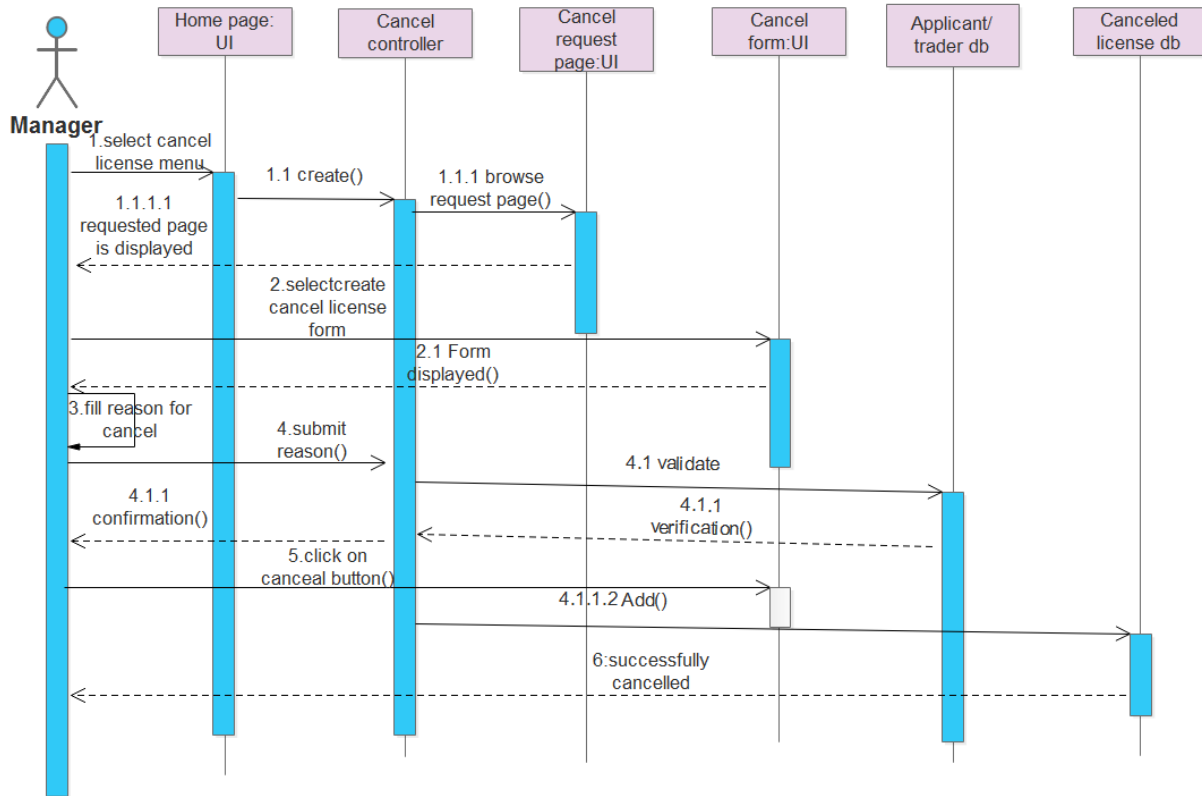


Figure 8 sequence diagram for Cancel license



## 7: sequence diagram for Generate report

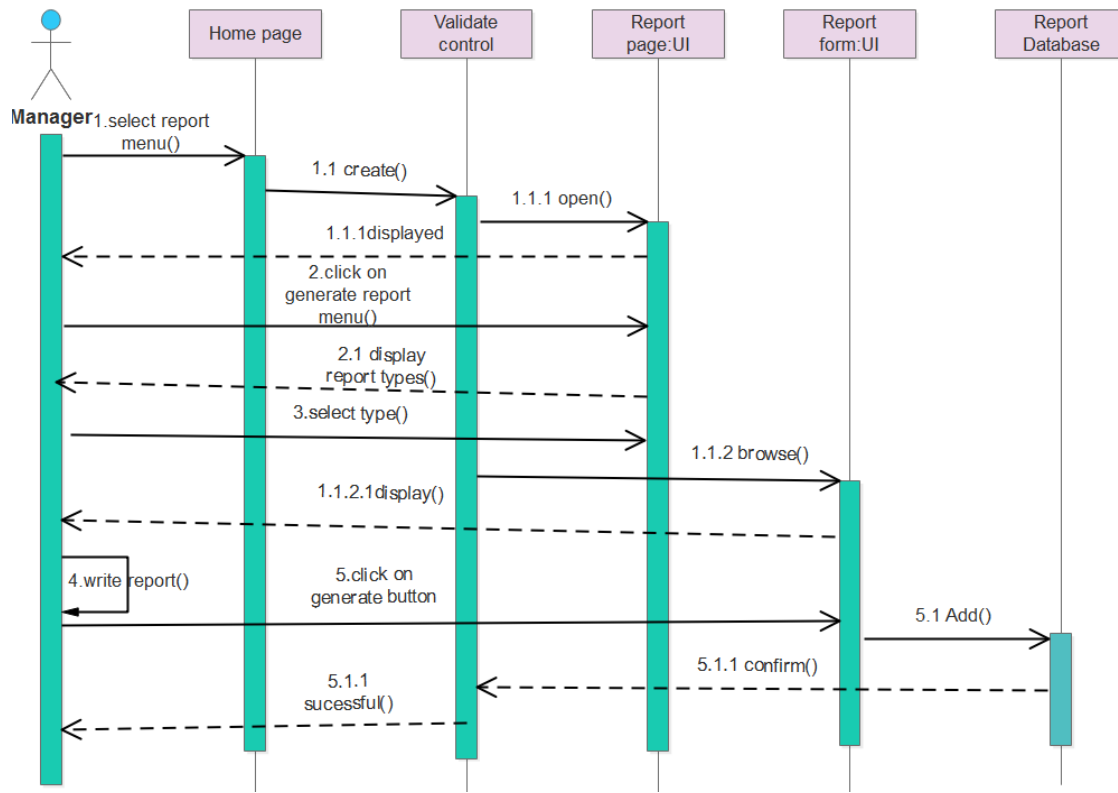


Figure 9 sequence diagram for Generate report

## 8: sequence diagram for View report

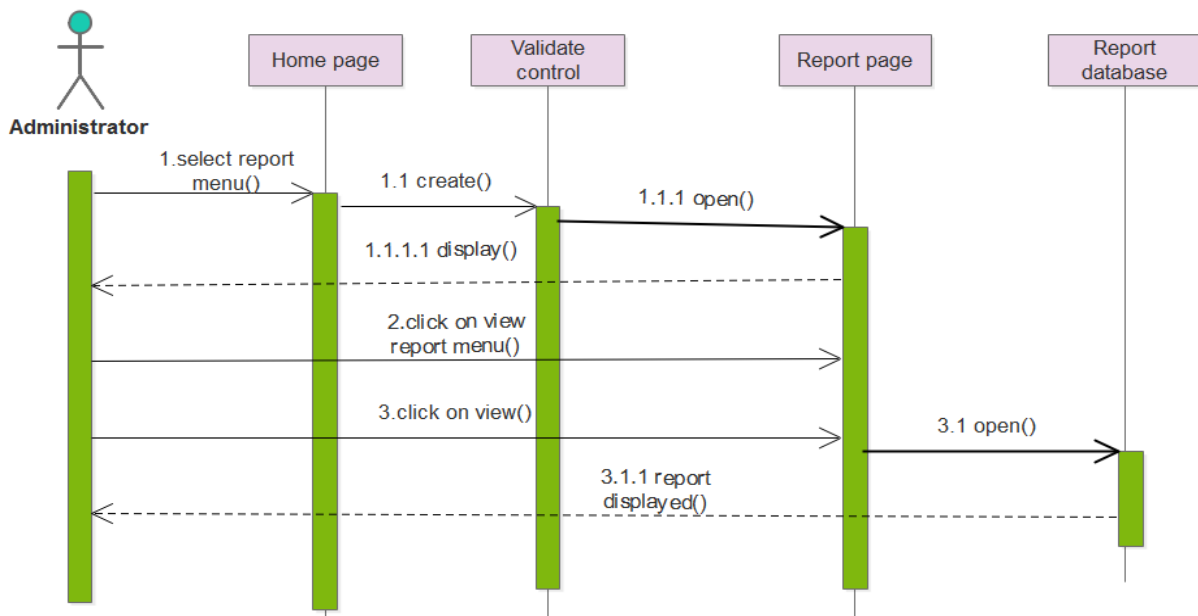


Figure 10 sequence diagram for View Report

### 3.5 Activity Diagram

[2]The activity diagram of an object is a condition or situation during the life time of an object at which time it satisfies some condition, performs some activity, or waits for some event. Activity diagram depict the various activity that an object may be in and the transitions between those activities. It is possible to have initial state and final states.

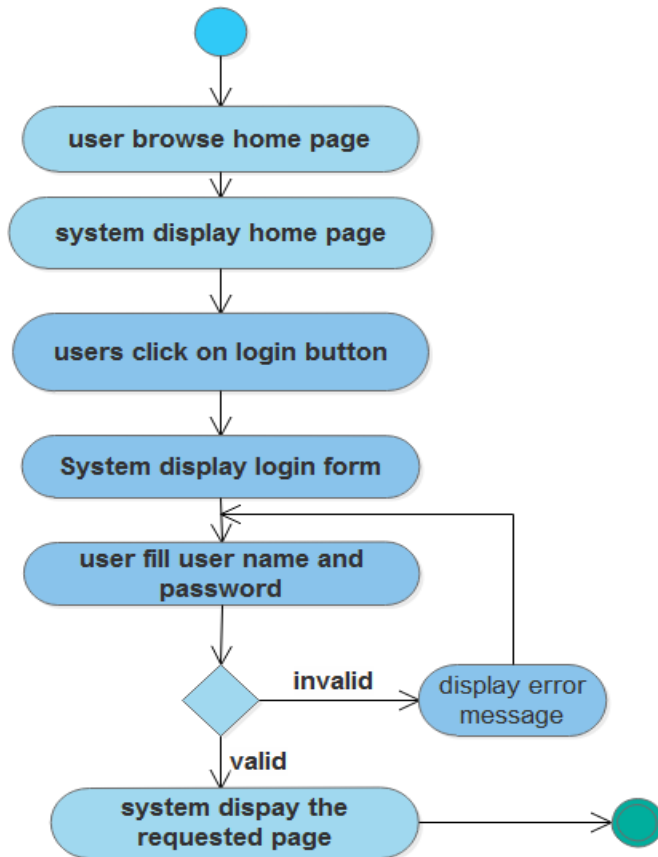
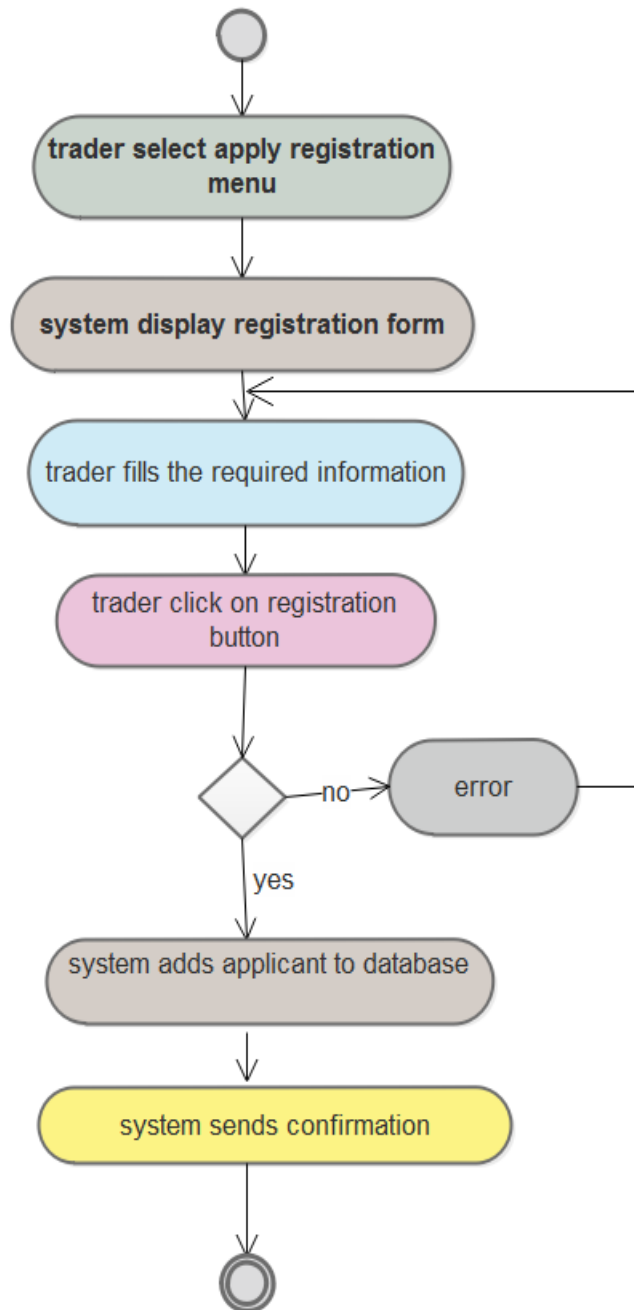


Figure 11 activity diagram for login



**Figure 12 activity diagram for apply registration**

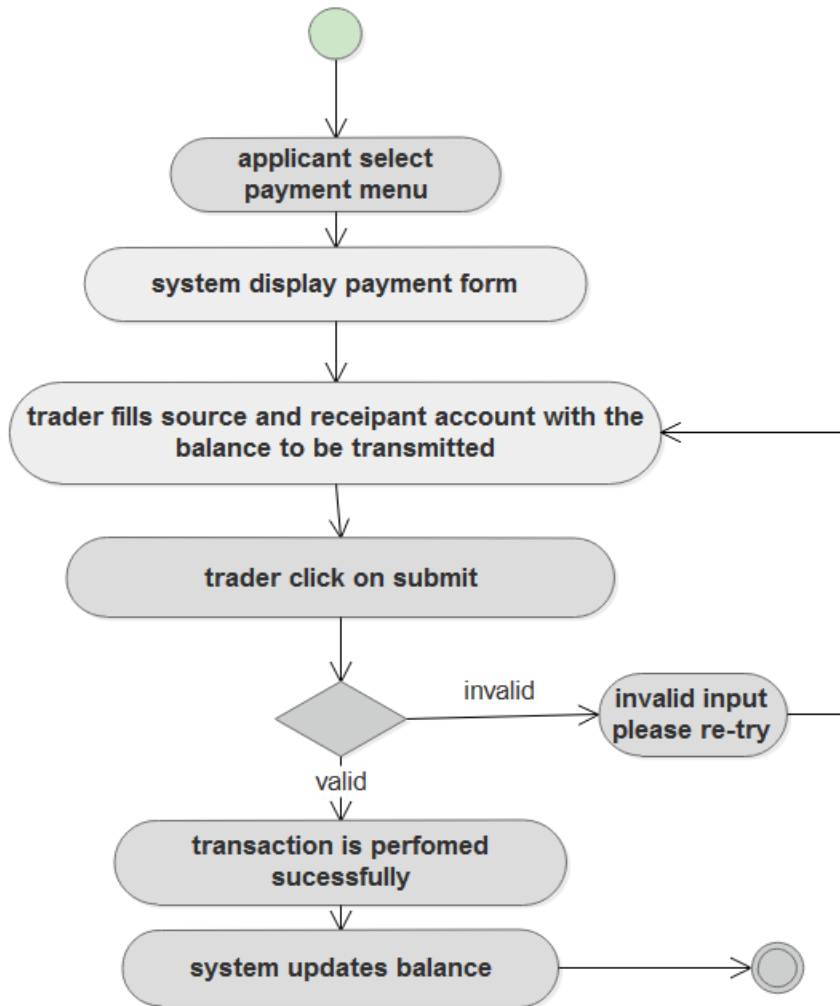
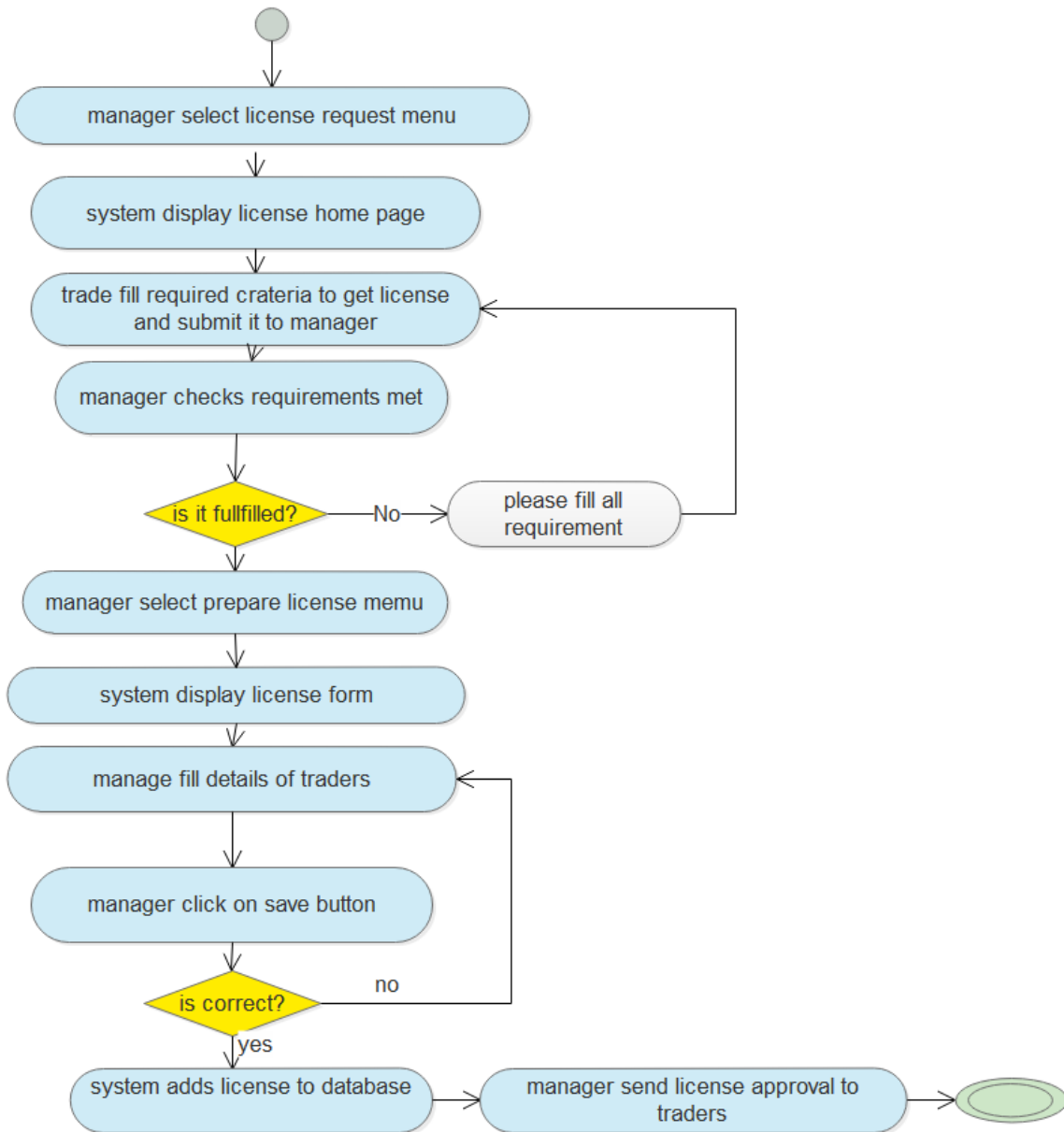


Figure 13 activity diagram for pay service fee



**Figure 14** activity diagram for Give license

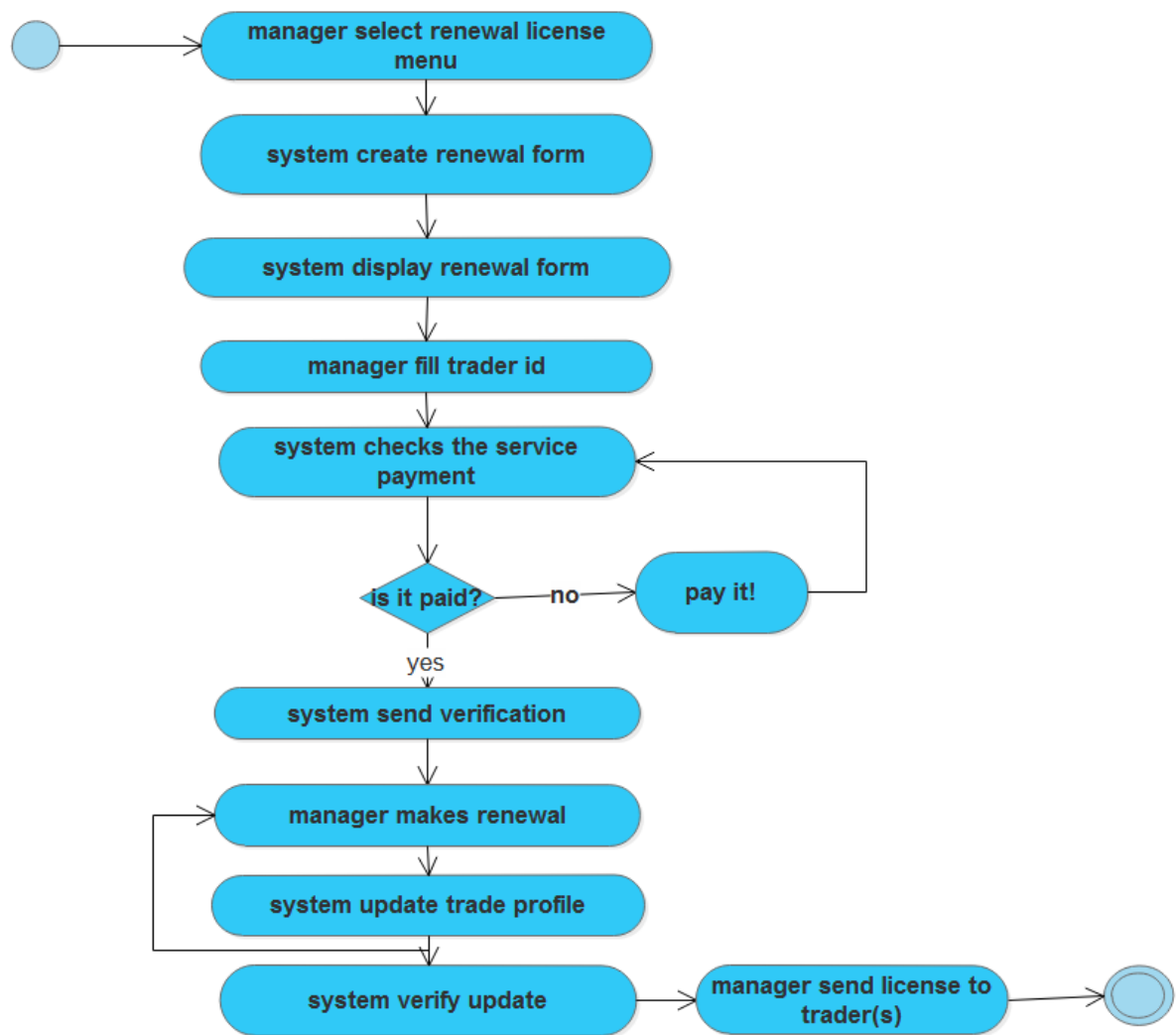


Figure 15 Activity diagram for renewal of license

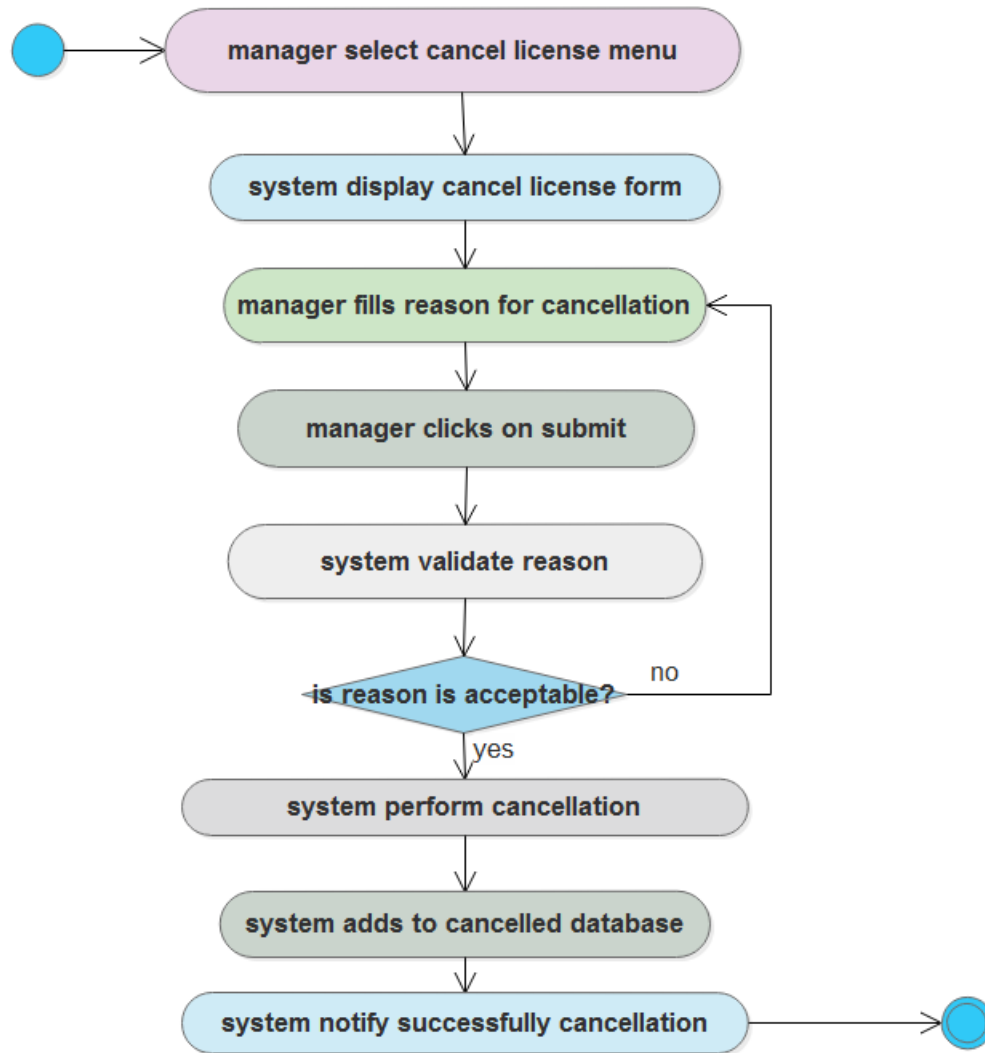
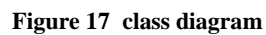


Figure 16 Activity diagram for cancel license

Class Diagram is used to describe the structure of a system by showing the system's classes, their attributes and the relationship between the classes. In addition to that it shows the static relationship between the classes. Class diagram depicts the system's object structure. They show object classes that the system is composed of as well as the relationships between those object classes. UML class diagram show the classes of the system, their inter-relationships, and the operations and attributes of the classes.





## **CHAPTER 4**

### **System Design**

#### **4.1 Introduction**

The purpose of design is to determine how to build the system and to obtain information needed to drive the actual implementation of the system. The focus is particularly on the solution domain rather than on the problem domain.

#### **4.2 System Architecture**

This architecture describes how the system works and interacts with the user by dividing work into different layers. So, we have divided our system into Interface layer, process layer, Persistent layer and data source layer.

##### **User interface layer**

This is the first application layer of the new system that contains window request of user name and password which the entire page will be opened. And also incorporates classes, which enables the user to interact with the system business functionalities.

In our project the following user interface classes are identified.

- Login UI class
- Applicant Form user interface
- Manager UI class
- Generate report UI class

##### **Application/Process layer**

Within the process layer, we define the process steps, the sequence in which they are executed, the roles that execute them, and how the context data of a process is passed between the process steps.

##### **Business/Domain layer**

These layers implement the concepts related to the business domain. In the System we have identified the following business classes are online register new customer, manager, and other information.

## Persistence Layer

At this layer there are persistence classes that encapsulate the capability to store, Update, retrieve and delete objects records form database

## Database layer

This is the layer that provides for correct information repository. Valid data stores in the database for decisions and historical information references.

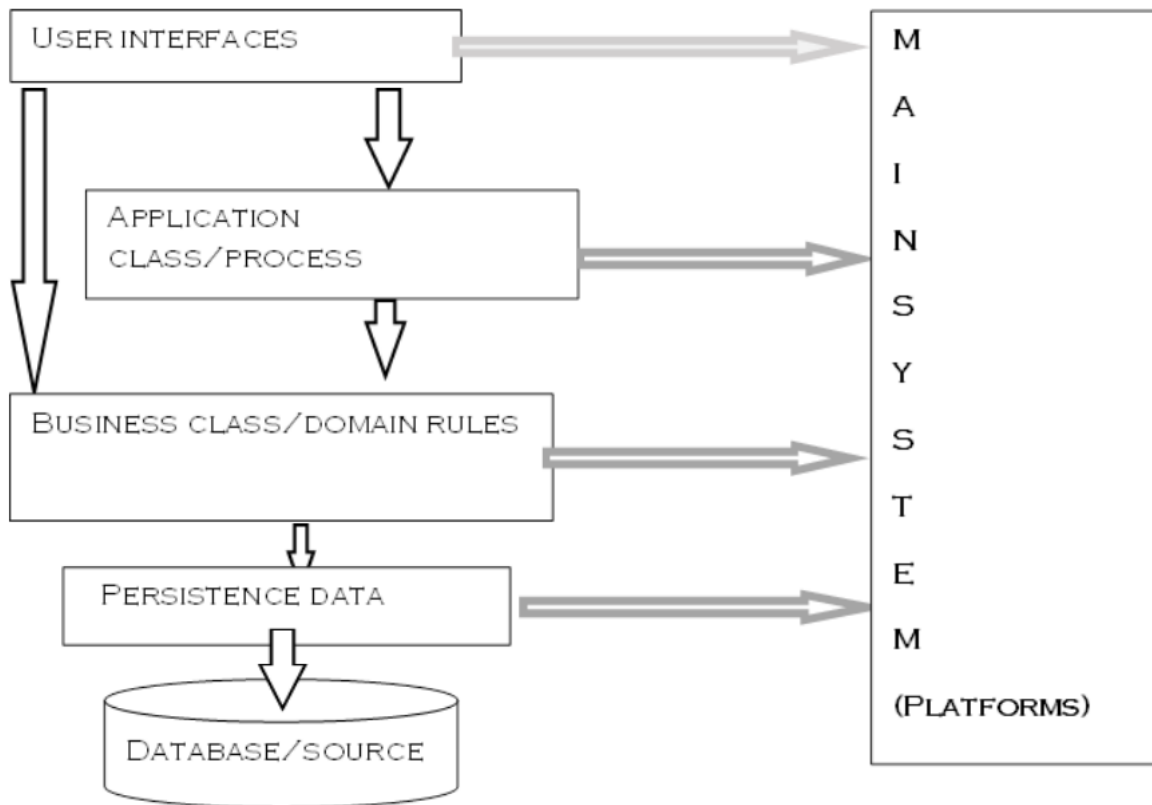


Figure 18 system architecture

### 4.3 State chart modeling

UML state chart diagrams depict the various states that an object may be in the transition between those states. In other word it has initial and final states in addition to transition that is a progression from one state to another. States are represented as a rounded rectangle with the name of the state shown in the system. Connecting states together are transitions. These represent the events that cause the object to change from one state to another. The guard clause of the label is again mutually exclusive and must resolve itself to be either true or false. Actions represent tasks that run causing the transitions State chart diagrams show class states and the events that cause them to transition between states.it is equivalent with activity diagram.

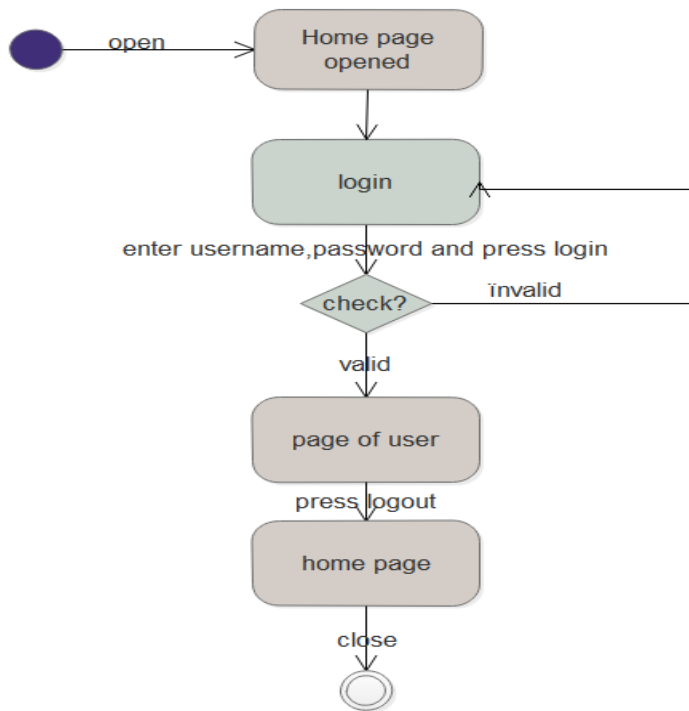


Figure 19 state chart diagram for login

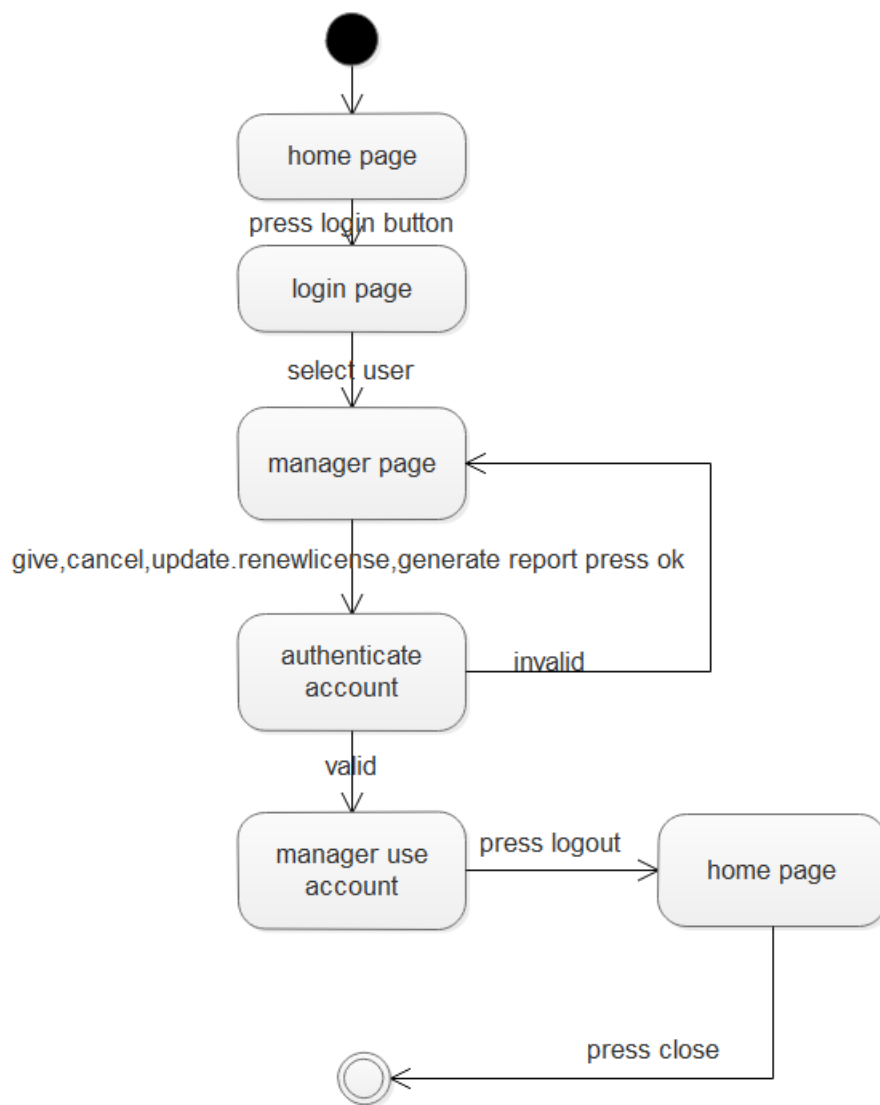


Figure 20 state chart diagram for manager page

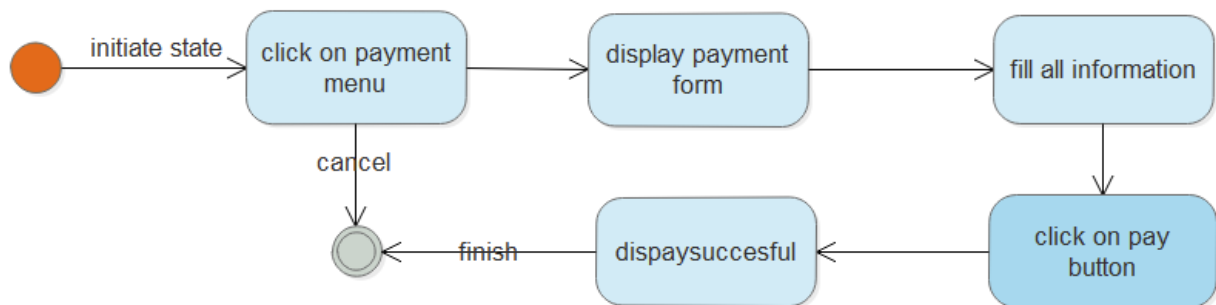
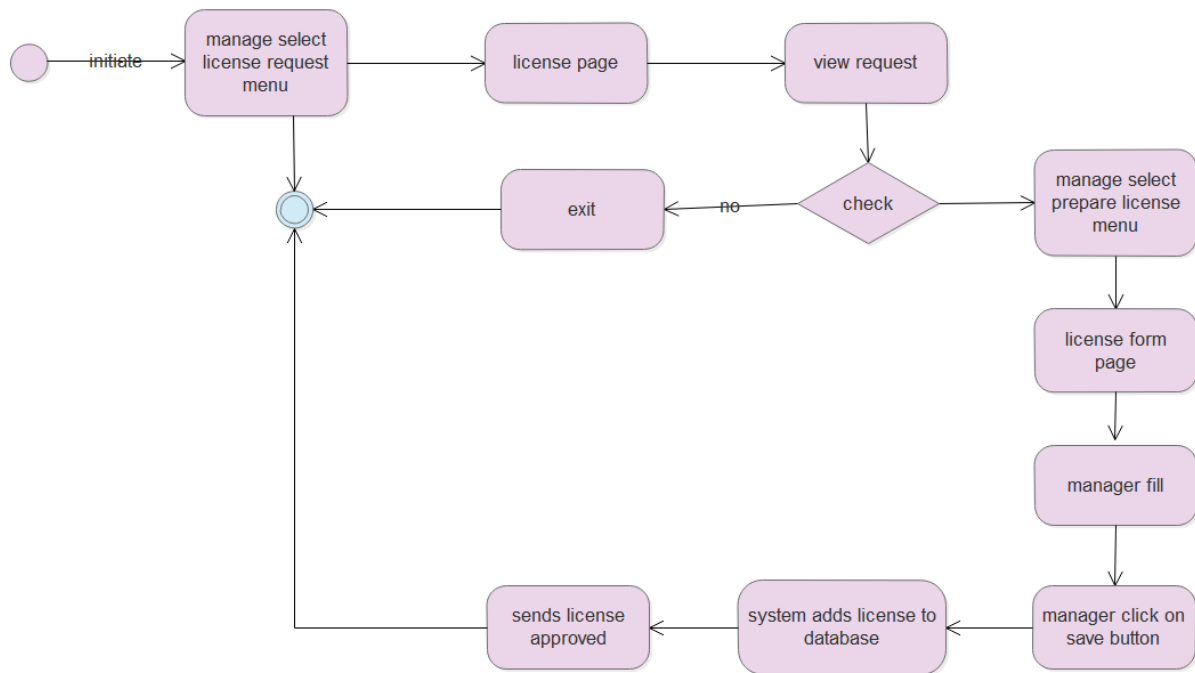


Figure 21 state chart diagram for payment



**Figure 22 State chart diagram for giving license**

#### **4.4 collaboration diagram**

A collaboration diagram is an interaction diagram that emphasizes the structural organization of the objects that participate in an interaction (send and receive messages). A collaboration diagram is formed by:-

Placing the objects that participate in the interaction as the vertices in a graph

Rendering the links that connect these objects as the arcs of this graph

Adorning these links with the messages that the objects send and receive.

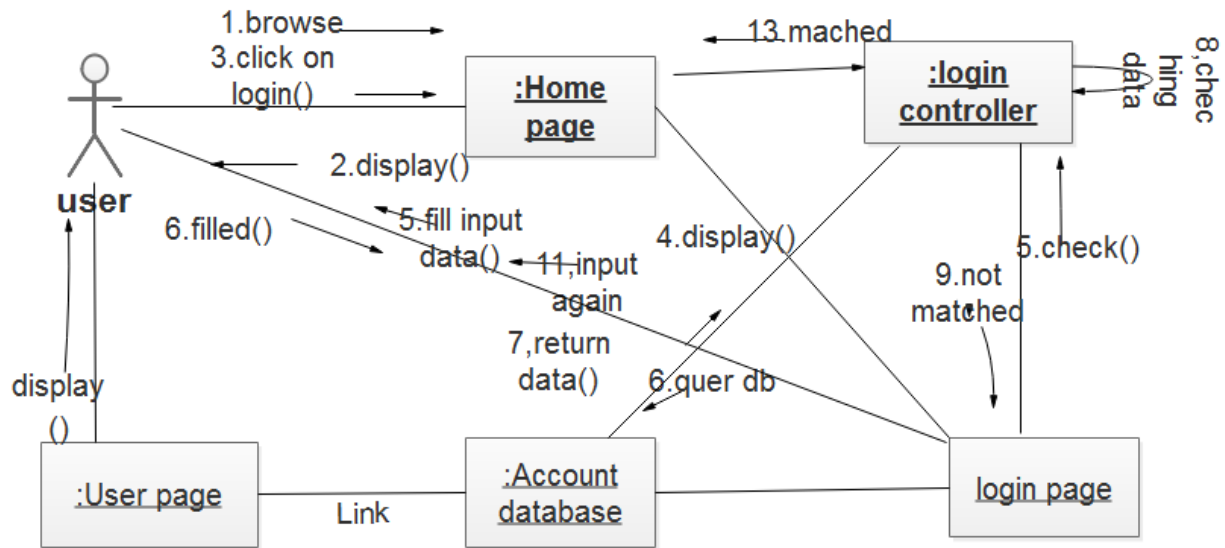


Figure 23 collaboration diagram login

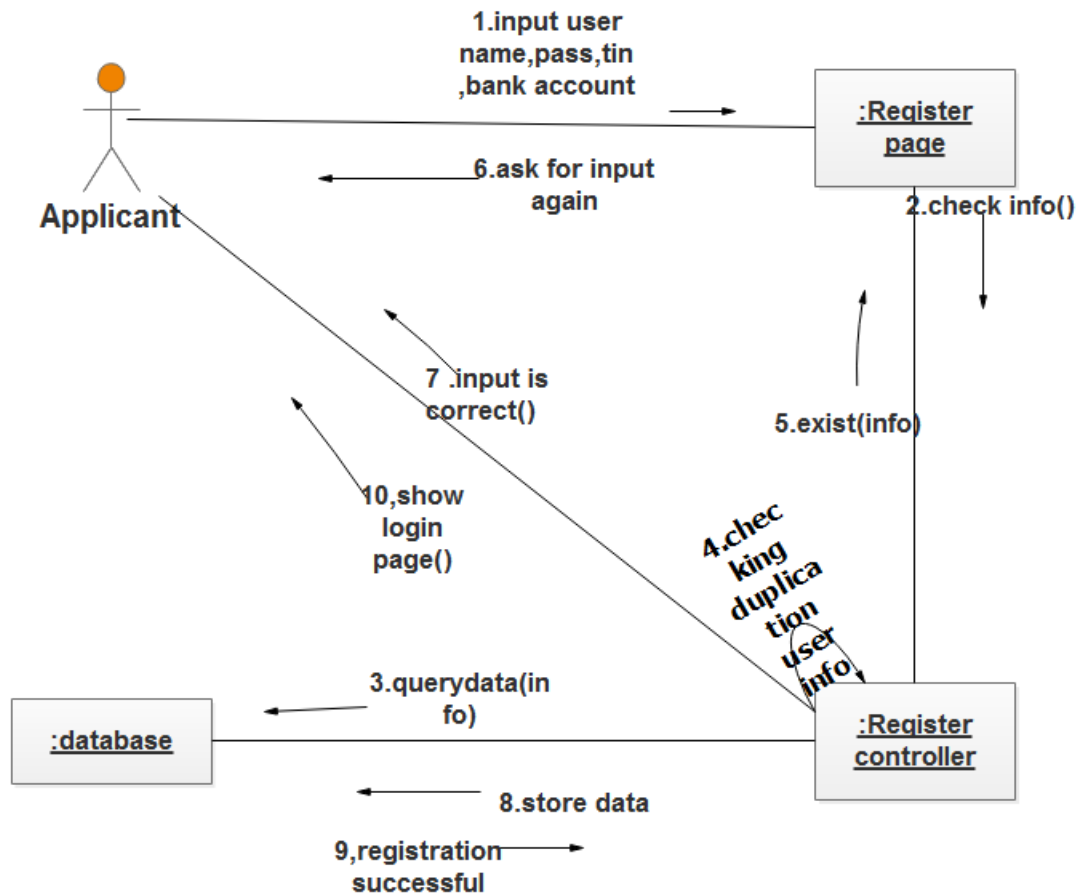


Figure 24 collaboration diagram for apply registration

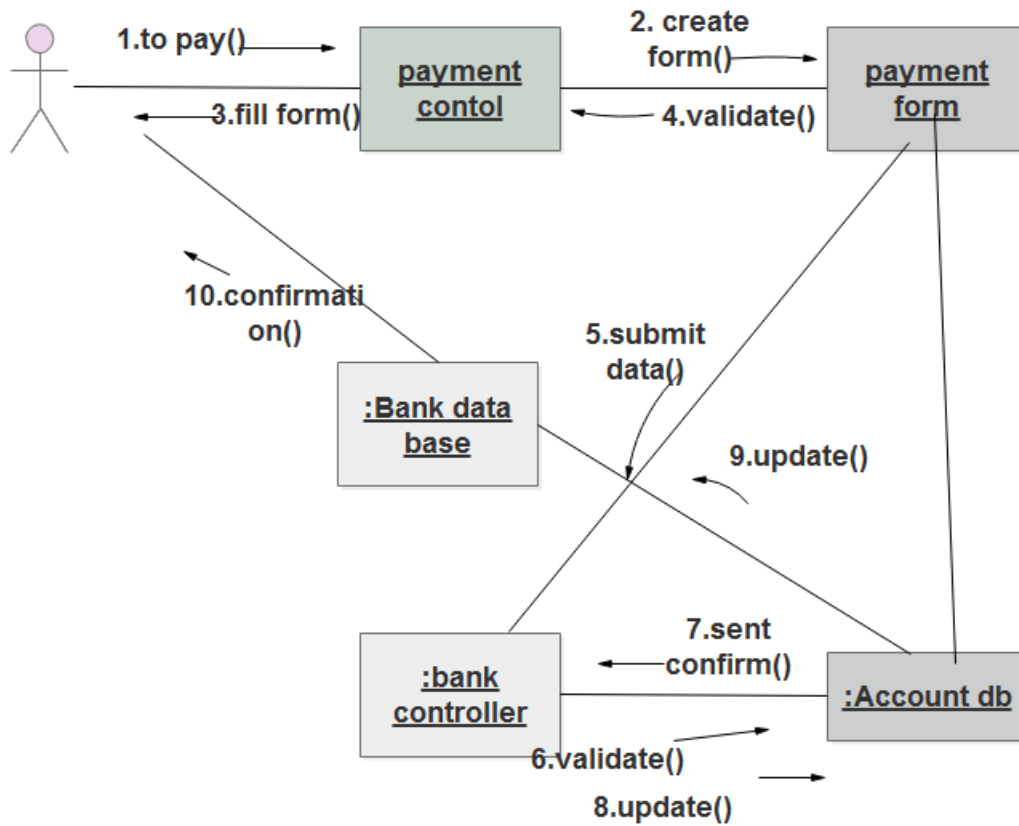
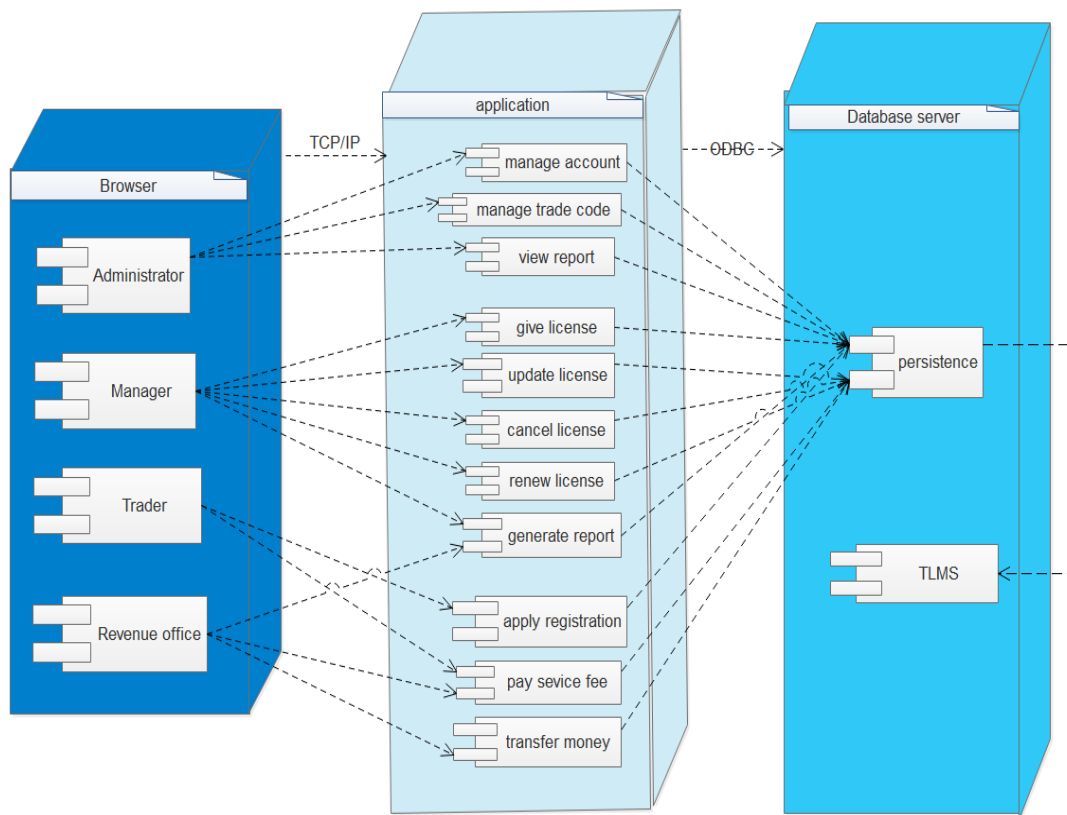


Figure 25 collaboration diagram for give license

## 4.5 Deployment Diagram

Deployment represents the nodes that form the systems hardware topology on which the system executes. It shows the configuration of nodes at run time and the component hosted on them; model the installation of the parts that make up the physical system.

Deployment level design involves a set of nodes and their relationship. It represents physical entities where the components are deployed to give services.



**Figure 26 deployment diagram**



## 4.6 Persistence data management

Persistence data modeling is a model that is used to communicate the designer of the database, usually a relational database, to both user of the system and another developer. Also it enables to design the schema of the database.

### Persistence layer

Persistence layer encapsulate the capability to store, retrieve, and delete objects/data permanently without revealing details of the underlying storage technology. In the current database system we have used different tables as object and each object is related to each other and enforced by referential integrity by the use of foreign key and primary key. This schema enables as data manipulation activity such as select, search, delete, update on the data base.

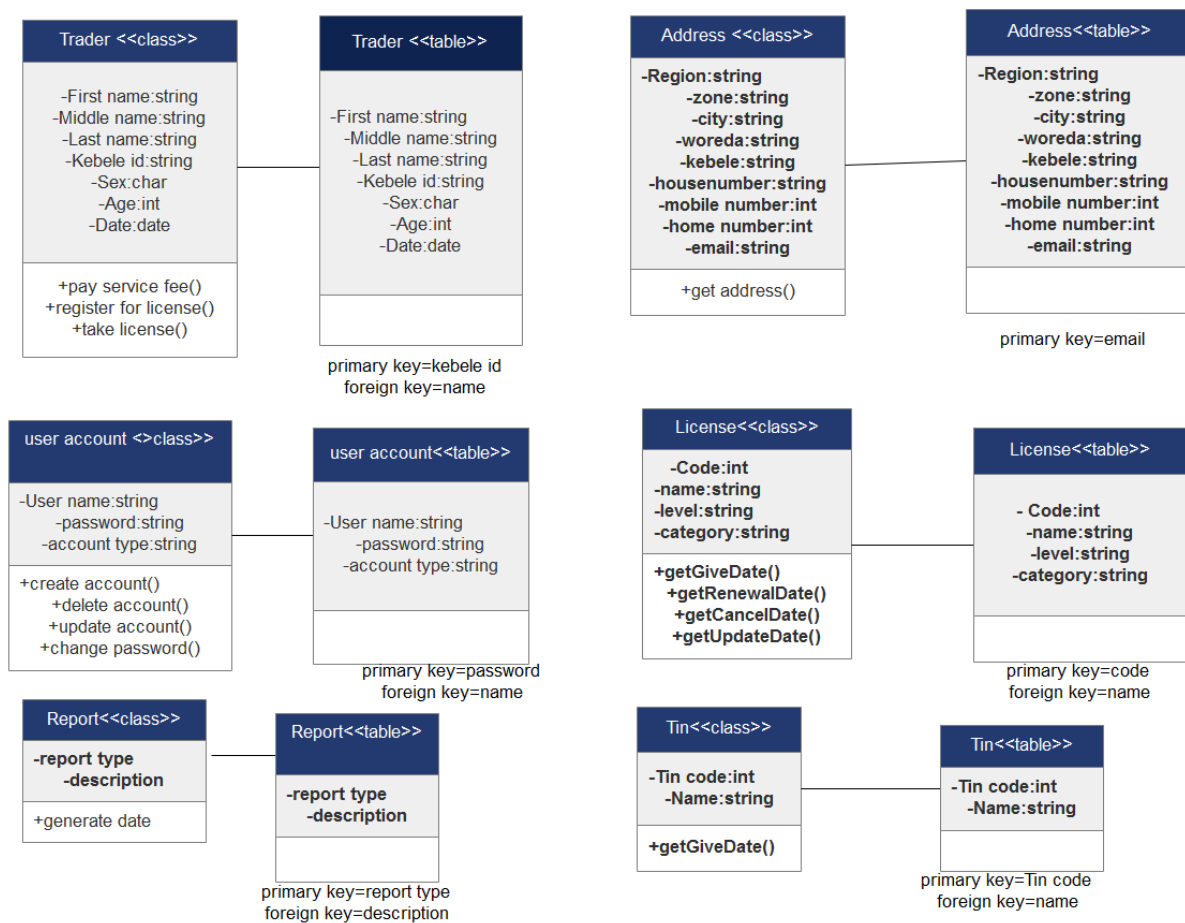


Figure 27 persistence data management

#### **4.7 Access control and security**

After the system is hosted on the server, it will have to enter to the system: this system is best system which is used for the security of our customer information. All customer of this system must have password to enter to the system that means user of this system is needs to enter password and username that is for trader, manager and administrator of the system. To access those parts one has to have password and user name so that he/she can enter into it and use it. This accessibility has also two parts, one which is restricted for administrator and the other for the rest actor.

The trader of this system he wants to create his own account from the system. In order to this all person who is authorized is possible to use this system. For the entire actor this system is using the same step, those are:-

1. Enter the username
2. Enter password of this username
3. In the last click on LOGIN.

After login you have to process whatever you want with validation of same thing.

## 4.8 User interface Design


**Home page:** this home page is serve as links to all other pages.




**Figure 28** home page

**Registration page:** this page is used for registration.

[Get Registration](#)
[Login](#)



# BULE HORA TOWN TRADE LICENSE MANAGMENT SYSTEM



Home
Background
About License
Services
GOOGLE SEARCH

[Mission And Vision](#)

[About TIN Number](#)

[About Trade Codes](#)

[Proclamations About License](#)

[List Of Trade Codes in PDF](#)

Welcome

Trade Code:

Trade Name:

photo:  No file chosen

Applicants Kebele Id:

First Name:

Middle Name:

Last Name:

Gender:

Birth Date

User Name:

Password:

Re-Password:

Address:

Bank account number:

Balance/Capital:

Email:

Mobile Phone:

Tin\_no:

Zone:

Kebele:

Town:

House Number:

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Figure 29 Registration page

**Trader page:** this page enables trades man to see his notification, managing account and his profile. This page also enables trader to take license, apply for license renewal, cancellation, and updating.

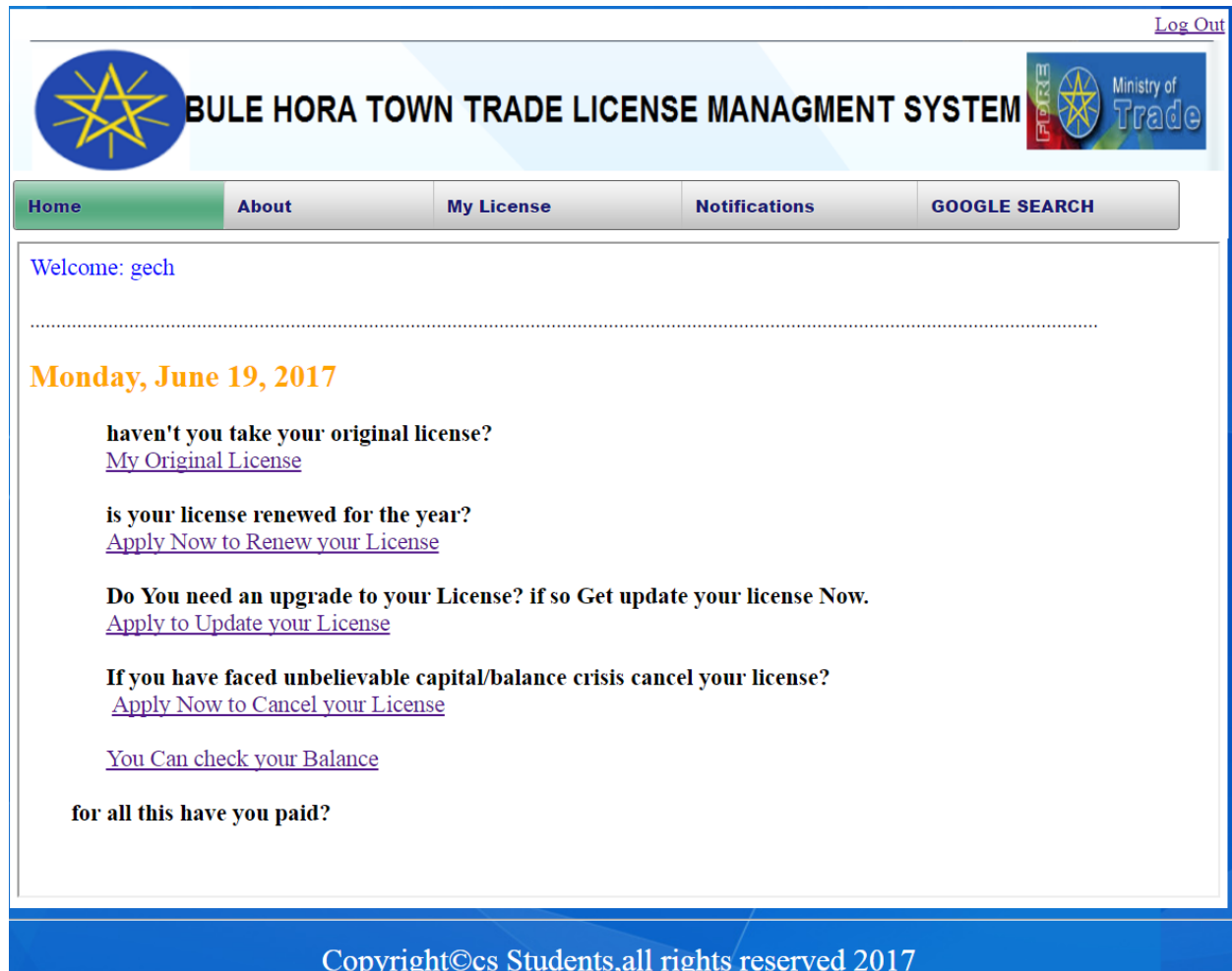


Figure 30 Trader page

## CHAPTER-5

### Implementation and Testing

#### 5.1 Introduction

Implementation is the phase where objectives of physical operations of the system turned into reality i.e. real working model. This includes implementing the attributes and methods of each object and integrating all the objects in the system, to function as a single system. The crucial phase in the system development life cycle is the successful implementation of the new system design. The process of converting a new system into an operational one is known as system implementation. The implementation activity spans the gap between the detailed object design model and a complete set of source code files that can be compiled together. In implementation; we tried to put into practice what was proposed in the project document i.e. transforming the project proposal into the actual project. Then the developed system is implemented or hosted on the server for the users to get the purpose or benefit of the system. This chapter contains final testing of the system, sample code, Hardware software acquisitions, user manual preparation, training and installation process.

#### 5.2 Final Testing of the System

Final phase of implementation is testing. Testing is a process to show the correctness of the program. This is checking of the system workability in an attempt to discover errors and avoiding such errors from the system. In this the team members tested the entire system as a whole with all forms, code, modules. In this we tested all the functionalities in the System. All errors in the forms, functions, modules have been tested. The following are different testing strategies.

**Unit testing:** Verification (A set of operations that the software correctly implemented a particular function) on the smallest element of the program i.e. the modules are tested alone in order to discover any error in the code. Every module of the System is separately tested i.e. we have tested every module by applying some selection mechanism. Several errors were occurred during testing and we removed all the bugs as per the specification of testing standards.

	Expected Result	Error Handling
Data Type Validation	Accepts only valid data	Displays the corresponding message box
Password Checking	Allows only authorized person to login into the system	Display Password or user name error message
No Inputs	Allows the new application to accept the needed data rather than null.	Displays an error message box
Date	Allows the new system to recognize the current date of the pc.	-----

**Integration Testing:** After we test each unit of the proposed system we had performed an integration test to check whether the system meets all the functional requirements. When a number of components are completed; it had test to ensure that they integrated well with each other, the operating system, and other components. In this testing the teams were verified the interfaces, communication between subcomponents and modules of the system. Integration testing is the activity of software testing in which individual software modules are combined and tested as a group. A type of testing used to conform that all code modules function as specified and whether the system as a whole performs perfectly on the plat form it will be deployed. It occurs after unit testing and before acceptance testing. Thus, Integration testing is a logical extension of unit testing. In its simplest form, two units that have already been tested are combined into a component and the interface between them is tested. Here a component refers to an integrated aggregate of more than one unit. In a realistic scenario, many units are combined into components, which are in turn aggregated into even larger parts of the program. The idea is to test combinations of pieces and eventually expand the process to test your modules with those of other groups.

Integration testing can be done in a variety of ways but the following are three common strategies:

- ❖ The top-down approach to integration testing requires the highest-level modules be test and integrated first.
- ❖ The third approach, sometimes referred to as the umbrella approach, requires testing along functional data and control-flow paths.
- ❖ The bottom-up approach requires the lowest-level units be tested and integrated first

**Acceptance Testing:** Acceptance testing is the process of testing system (e.g. software, lots of manufactured mechanical parts, or batches of chemical products) 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, QA testing, application testing, confidence testing, final testing, validation testing, or factory acceptance testing.

**System Testing:** It is the final step of testing. In this the team members tested the entire system as a whole with all forms, code, modules. This form of testing is popularly known as Black Box testing or System tests. In this the team members tests all the functionalities in the System. All errors in the forms, functions, modules are tested. The specification will be described according to the test types that will be done on the system.

### 5.3 Sample code

Coding is the process whereby the physical design specification created by the designers is turned in to working computer code by the programmer. The code is made simple in such a way that another programmer can easily understand and work on that in future. It is a phase where all the work during analysis and design will be turn off to a functional system prototype.

**Sample of coding is as follows:**

#### CODE FOR LOGIN:

```
<?php

session_start();

error_reporting(E_ALL^E_NOTICE);

$username=$_POST["username"];

$password=$_POST["password"];

$rypt_pass = md5($_POST['password']);

$db = mysql_connect("localhost","root","") or die ("Error connecting to database.");

if(!$db){

echo "no connection established";
```



```

}

mysql_select_db("license",$db) or die("Couldn't select the database.");

$qry="select * from account where user_name='".$username.'" and password='".$crypt_pass ."'";

$results = mysql_query($qry,$db) or die(mysql_error());

$count=mysql_num_rows($results);

if($count<='0'){

    ?>

    <font color="white">

    <?php

$error='please insert the correct user name and password';

include("index.php");

}

else

{

while ($row = mysql_fetch_array($results)) {

    $user1=$row['privilege'];

    $id=$row['list_no'];

    $state=$row['state'];

    $username=$row['user_name'];

    if($state=="active")

```

```

{

if($user1=="admin"){

$_SESSION['id']=$id;

$_SESSION['username']=$username;

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<center></center>';

echo'<h1 align="center" class="err"><b>.....Loding.....<br>Please Wait....</b></h1>';

echo'<meta http-equiv="refresh" content="3;url=admin/adminhome.php">';

//header('location:admin/adminhome.php');

}

```

```

else if($user1=="employee"){

$_SESSION['id']=$id;

$_SESSION['username']=$username;

echo'<br>';

echo'<br>';

```

```

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<center></center>';

echo'<h1 align="center" class="err"><b>.....Loding.....<br>Please Wait...</b></h1>';

echo'<meta http-equiv="refresh" content="3;url=employe/employe_page.php">';

//header('location:employe/employe_page.php');

}

else if($user1=="revenueadm"){

$_SESSION['id']=$id;

$_SESSION['username']=$username;

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<center></center>';

echo'<h1 align="center" class="err"><b>.....Loding.....<br>Please Wait...</b></h1>';

echo'<meta http-equiv="refresh" content="3;url=revenue/revenue_page.php">';

```

```

//header('location:revenue/revenue_page.php');

}

else if($user1=="trader"){

$_SESSION['id']=$id;

$_SESSION['username']=$username;

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<br>';

echo'<center></center>';

echo'<h1 align="center" class="err"><b>.....Loding.....<br>Please Wait...</b></h1>';

echo'<meta http-equiv="refresh" content="3;url=trader/home.php">';

//header('location:trader/home.php');

}

else if($user1=="||$user1==null)

$error= "You have no privilege";

}

else

```

```

{

    $error="this Account is deactivated or inactive";

    //header('location:home.php');

    include("index.php");

    ?>

<?php

}

}

}

?>

```

## 5.4 Hardware and software acquisitions

In order to implement the system, we have the following requirements:

### Hardware Requirements:

- ❖ Computer with 5GB and 4 RAM.
- ❖ Computer with 500 GB hard disk.
- ❖ Computer processor above 200 MHZ, but this entire are requires conditions as minimum requirement
- ❖ Server:-for connection to the client computer (to host the system)

### Software Requirements:

- ❖ PHP:-Server side scripting
- ❖ HTML: -To write the code.
- ❖ Slim jet web browser used to run the program or system
- ❖ MYSQL: -it is inside the WAMP server for create the database and table for that database.

- ❖ Microsoft Office Visio Professional 2007:-used as a modeling tools for drawing diagrams or To Draw UML (universal modeling language) Diagram and to prepare graphical user interface.
- ❖ Microsoft Office word 2010:- For any word processing and prepare documentation.

## **5.5 User Manual preparation**

As the system is hosted on the single machine that is server, there is need of preparing user manual. Some useful information's are given to the user when deploying the system and also little guiding information on the site of the system which guides the user how to use the system. To access the system the user must follow the following steps:-

1. User start page by using some access point i.e by domain
2. register to the system
3. click on login button
4. entering user name and password
5. access the system
6. at the end the user must close the system.

## **5.6 Training**

Even though the system is easy to use it is important to give training for whom it is important. As developing team was suggested training for user is not consume more time and resource. We suggested maximum training time is 1 day for individual user. And training is given by developers or our team. To organization training will be given first then organization can also give for users.

Training is needed for two reasons:

- ❖ If users are not adequately trained they will not operate the system correctly or efficiently.
- ❖ If users fill that they are being asked to perform tasks that are outside their capabilities, they may become demoralized and separated.

User training must be providing to user of the system in order to help them become equated with the system. Users are vital part of any system. The introduction of new system must mean changes in roles and relationship, if system being introduced is proposed by Trade and development Office. It is less likely to be successful.

## **5.7 Installation process**

System is hosted to the server. To host

After installing both Macromedia Dreamweaver and Wamp server software do the following steps.

### **Step1**

- ❖ Get the folder “trader “from the Developing Team.

### **Step 2**

- ❖ Create the folder in the C:\wamp\www

### **Step3**

- ❖ Run WAMP server

### **Step4**

- ❖ After doing these steps again, copy the folder “trader” from the Developing Team

### **Step5**

- ❖ Paste the folder into the folder ”trader “in the C:\wamp\www

### **Step6**

- ❖ Now you can host to server

### **Step7**

- ❖ Give domain name for the system in hosting process and other information

### **Step8**

- ❖ Keep information

# **CHAPTER-6**

## **Conclusions and Recommendation**

### **6.1 Conclusions**

The project is partitioned into six chapters and each chapter has a specific deliverable which is essential and base for the next chapter.

Considering the drawbacks of the existing system and importance of new technologies the developed system, the system includes functionalities of registering applicants for license, give the license for those who fulfill the requirements, update license annually, and cancel license. The system performs works better than existing system (usability, speed, efficiency and effectiveness). Security also included in this system developed and authorized user can access the required services. The system is also very useful in minimizing time and other utilities wastage.

This project document deals all about online Trade license management system for Bule Hora town Trade and Market development office.

Generally, project team would like to remark that the project has given us a great deal of experience not only in the technical aspect but also in writing together as a team to accomplish a certain goal, which is a much desired quality.

### **6.2 Recommendation**

Nowadays, the world is highly becoming a competitive world. Organizations have to divert their attention on using the recent technology to be on the first line and competitive. This can be real if they are able to use information communication technology (ICT) to successfully achieve their objective.

- ❖ Trading system has much functionality. But we are limited only to trade license giving, updating, renewal, and its legal cancelation. The annual tax payment system is not included because of the authority to collect tax is not a power of our office. For that reason on the coming system development should be done in the future.
- ❖ The trade controlling system is not included in the system should be done in the future.
- ❖ The Tin number is not included in this system should be done in the future



## **APPENDIX**

## References

[1] <https://en.wikipedia.org/wiki/Trade>, on 31 January 2017, at 17:06.

<http://www.mot.gov.et>, 2016.

[https://en.wikipedia.org/wiki/Unified\\_Modeling\\_Language](https://en.wikipedia.org/wiki/Unified_Modeling_Language) 12 January, 2017.

[2] [https://en.wikipedia.org/wiki/Activity\\_diagram](https://en.wikipedia.org/wiki/Activity_diagram) 21 September 2016.

- SCOTT W.AMBLER. *The Object Primer-The Application Developer's Guide to Object Orientation and the UML*. 2nd Edition. Cambridge university, 2000 (about UML Modeling use cases, sequence diagram, activity diagram class diagram and all other UML modeling diagrams)

- Jeffrey Whitten, Lonic Bentley, Kevin C. Dittman. *System Analysis and Design Methods*. 2th Edition. Indiana University, Virginia tech 2005. (In requirements analysis and designing)

- SCOTT W.AMBLER. *The Object Primer - Agile Mode Driven Development with UML2.0*. 3rd Edition, Cambridge University, 2001