GAMBI GENERAL TEACHING HOSPITAL

Software Requirements Specification

For

Gambi Hospital Patient Admit ion System

Version 1.0

Prepared by

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CHPTER ONE

Introduction

1.1Purpose

If an SRS is written well, it will serve the following purposes

Feedback to the Customer

The software requirement specification assures the project management stakeholders and client that the development team has really understood the business requirement documentation properly. This also provides confidence that the team will develop the functionality which has been detailed.

Breaking the Requirements Down

The Software Requirement Specification is documented in such a way that it breaks the deliverables into smaller components. The information is organized in such a way that the developers will not only understand the boundaries within which they need to work, but also what functionality needs to be developed and in what order.

These two points are particularly important in the process of software development. If your development team do not understand that there are certain constraints on their work, as for example the code must be tightly written so that it will compile and run quickly, then you will run into problems later on when the code might deliver the functionality required, but no one will ever see it because it takes so long to load!

Understanding what order the functionality will be developed in means that the developers have the "big picture" view of the development. This gives them an opportunity to plan ahead which saves both project time and cost.

Facilitating other Documentation

The SRS forms the basis for a load of other important documents such as the Software Design Specification.

Product Validation

It basically helps in validating with the client that the product which is being delivered, meets what they asked for.

1.2 Intended Audience and Reading Suggestions

Developers:-for developing effective project that full fill all functional and non-functional requirements.

Project manager:-for control the project weather it is done or not according to their requirement.

Users*:* in order to get familiar with the idea of the project and suggest other features that would make it even more functional.

Testers:-to check whether the system is done in appropriate way or not.

Documentation writers: to know what features and in what way they have to explain. What security technologies are required, how the system will response in each user's action etc.

Manager -manages the development of the system to control the work done in the group.

Maintainer –that maintains the system in request to change from the user.

Owner – the owner of the company.

Customers - Customers of the system to see the system meets their needs or not.

1.3 Project Scope

Our software only concerned about patients that will be able physically which means it does not access online registration. It makes an interface between user, administrator and system. The data is stored in computerized way in order to protect their security. Its purpose is to improve the manual system into a modern computerized system. It is very beneficial for saving time. The goal of developing this software is to make easy the day to day activity of GGTH.

1.4 Definitions, Acronyms, & Abbreviations

Acronyms

GGTH-Gambi General Teaching Hospital

SRS-Software Requirement Specification

IEEE –Institute of Electrical and Electronics Engineers.

OPD-Out Patient Department

INP-IN Patient Department

KOH –Potassium Hydroxide

AFB – Acid Fast Bacilli

Abbreviations

AS-Assumptions

DE-Dependencies

PWD – Password

No –Number

UI-User Interface

GUI-Graphical User Inter Face

Definitions

Statistics expert means the employees in the hospital that takes the hole patients treated to day patients information to the system in order to minimize the doctors time that they spent to insert patients information to the system.

1.5 Overview of the Document

The document contains the overall description including product feature, constraints and general assumption, requirement (functional, non-functional and external interface) and analysis model. The analysis models also contain activity diagram, sequence diagram, use case and Class model. These all chapters have their own explanations.

1.6 References

-internet in 25/12/2013 for main purpose of SRS in the standard of IEEE and Software Engineering Ninth Edition Ian Summerville.

CHPTER TWO

2. Overall Description

2.1Product Perspective

Since The Patient Admit ion System in GTGH works manually our system is new self-reliant product.

2.2 product features

Table 1: - product features

NO	Feature name	Description
1	User login	○ The system able to login the users to register, search, save and update patient's information. These users are receptionist laboratories and doctors who have a valid user name and password.
2	Admin login	○ The system have administrator login to control the system with full control access to insert, delete, and update data in the database.
3	Register Patients	○ The system allows the receptionist to record patient's personal information such as Name, Age, Sex and Address.
4	Save Patient Information	○ The system allows the receptionist to keep the information of patients that have registered.
5	Search Patient Information	○ The user is able to look for patient's information.
6	Update Patient Information	○ The system able to the user to renew patient's information.
7	Display Patient Information	○ When the appropriate user wants to see patient's information the system allows to see it.

8	Receive Laboratory prescription	○ The system allows the laboratories to take delivery of laboratory prescription that the doctor had sent.
9	Send laboratory result	○ The system allows the laboratories to send the result to the requested doctor.
10	Help	○ The system will have a help for those that needs help

2.3 User classes and characteristics

- ✓ Administrator: - this user of the system administrates the system with giving access legal to all users. This user has knowledge on database.
- ✓ End users

  Doctors and Laboratories:-this users can access information of patient's and data related to laboratory in the system.

  Receptionist:-.this user able to insert, save and update data on the system.

2.4 General constraints

- ✓ The system must run in all operating system such as in all versions of windows version.
- ✓ The system runs in all internet browsers.
- ✓ The system will be submitted to GGTH in 1/17/2014.

2.5 Assumptions and Dependencies

AS-: Users have internet connection.
Users have Basic knowledge about MS Excel.
DE-: Web server must be available for website.

Chapter 3

Specific Requirements

This chapter describes in detail all requirements of the system that the system is to fulfill to be submitted those are user and system requirements

3.1 User Requirements

User requirements as functional and non functional and we describe them in detail

3.1.1. Functional User Requirements

We again group the functional requirement as Requirements that change Memory contents , Network using Requirements, Authentication Requirements, viewing requirements, Memory manipulation requirements

3.1.1.1 Requirements that change Memory contents

REQ ID	REQ	Description	priority	source	Related Requirement
REQ-01	The System Shall be able to allow the Receptionist to Register Patients information	To regester the patients the receptionist enters must enters the patients information	High	What I know	
REQ-02	The System Shall allow the Receptionist to update patients information	The Receptionist can update patients information when needed	High	What I know	**REQ-33**

REQ-03	The System Shall be able to allow the Receptionist to save Patients information	The Receptionist shall be able to save patient information w/c is new or changed	High	What I know	**REQ-01, REQ-02**
REQ-04	The System Shall be able to allow the statistics expert to save Patients information	The statistics expert shall be able to save patient information w/c is new or changed	High	Nurses manager	**REQ-06**
REQ-05	The system shall allow the statistics experts to update patients information	Since the statistics experts will enter patients data to the system so the statistics experts will be able to up patients data	High	Nurses manager	**REQ-33**

3.1.1.2Network using Requirements

REQ ID	REQ	Description	priority	source	Related Requirement
REQ-06	The System Shall be able to send each Patients to the doctors	Send patient to the doctor those registered patients for treatment	high	receptionist	REQ-01
REQ-07	The System Shall be able to send all list of Patients treated today to the statistics expert	The statistics expert enters the patient information to the system data base The System Shall be able to send this patients data treated to day to the	high	Head Adminstrater	

		statistics expert			
REQ-08	The system shall be able to send laboratory request paper to the laboratories	The doctor will must be able to send laboratory request paper to the laboratories through the network	high	Lab technician	
REQ-09	The system shall be able to send laboratory result to the appropriate doctor	After the laboratories finishes the laboratory result of the patient the laboratories shall be able to send the result to the requested doctor	high	Lab technician	**REQ-09**
REQ-10	The system shall be able to send emergency patients information to doctor	When emergency patients come it can be first treated so it have to get priority the system can be able to give this priority	high	Head administrator	**REQ-01**

3.1.1.2 Authentication Requirements

REQ ID	REQ	Description	priority	Source	Related Requirement
REQ-11	The system shall be able to allow the administrator to login to his home page	The system shall be able to log in to his home page by using his user name and password	high	Head administrator	
REQ-12	The system shall be able to logout the administrator	The Receptionist can be able to close the system when it finishes work	high	Head administrator	**REQ-12**
REQ-13	The system shall be able to login the laboratories	The system shall be able to log in to his home page by using his user name and password	high	What I know	

REQ-14	The system shall be able to logout the laboratories	The Receptionist can be able to close the system when it finishes work	high	What I know	**REQ-14**
REQ-15	The system shall be able to login the statistics expert	The system shall be able to log in to his home page by using his user name and password	high	What I know	
REQ-16	The system shall be able to logout the statistics expert	The Receptionist can be able to close the system when it finishes work	high	What I know	**REQ-16**
REQ-17	The system shall be able to login the Receptionist	The system shall be able to log in to his home page by using his user name and password	high	What I know	
REQ-18	The system shall be able to logout the Receptionist	The Receptionist can be able to close the system when it finishes work	high	What I know	**REQ-18**
REQ-29	The system shall be allow the administrator to change password	Since the password for the users of the system is given by the administrator so the administrator will be able to change password of the users	high	Head administrator	
REQ-20	The system shall be allow the administrator to change user name	Since the password for the users of the system is given by the administrator so the administrator	high	Head administrator	

		will be able to change user name of the users			
REQ-21	The system shall be able to login the doctor	The system shall be able to log in to his home page by using his user name and password	high	What I know	
REQ-22	The system shall be able to logout the doctor	The Receptionist can be able to close the system when it finishes work	high	What I know	**REQ-22**

3.1.1.3 viewing requirements

REQ ID	REQ	Description	priority	source	Related Requirement
REQ-23	The System Shall be able to allow the Receptionist to see some all the Patients list	The Receptionist can able to view some specified list of patient	high	Receptionist	
REQ-24	The System Shall be able to allow the administrator to see some the Patients list	The administrator can able to view some patient list	high	administrator	
REQ-25	The System Shall be able to allow the administrator to see list of Patients that	The administrator the list of patients that treated in follow up by sleeting follow	high	Administrator	

	treated in follow-up treatment	up patients button			
REQ-26	The System Shall be able to allow the administrator to see list of Patients that can be admitted	The administrator can see those admitted patients by clicking the admitted button	high	Administrator	
REQ-27	The system shall be able to allow the administrator to see list of patients that need surgery	The patients that needs surgery will be displayed for the administrator to be reserve a surgery day ,room	high	Administrator	
REQ-28	The system shall allow the receptionist to see cheek up date	The receptionist can see the cheek up date of those patients that need follow up treatment	High	receptionist	
REQ-29	The system shall be able to allow the administrator to see patients cheek up day	The cheek up date for those patients that needs cheek up will be displayed to the administrator	High	administrator	
REQ-30	The system shall be able to allow the administrator to see all patients treated by specific doctor	The system displays to the administrator treated by specific doctor	Medium	administrator	
REQ-31	The system shall be able to allow the administrator to see all list of	List of patients will be categorized to their disease type will be	Low	administrator	

	patients according to their disease type	displayed to the administrator			
REQ-32	The system shall allow the administrator to see all patient list that treated today	The administrator will be able to see all list of all patients that can be treated today	Medium	administrator	

3.1.1.4Memory manipulation requirements

REQ ID	REQ	Description	Priority	source	Related requirement
REQ-33	The System Shall be able to allow the Receptionist to search patients information by their name	After assessing the homepage The Receptionist can able to search specific patients	high	Receptionist	**REQ-01**
REQ-34	The System will gives password for those registered patients to the receptionist	The system will give patient id to the patient	high	receptionist	

REQ-35	The system shall be able to identify the patient is registered with out payment	If the patient is registered for last time before 15 days the patient doesn't pay for registration so thee system will identify the patients that can be registered with out payment	high	receptionist	
REQ-36	The system shall Allow the receptionist to allow print bill	The system prints bill for those new patents	high	receptionist	
REQ-37	The System Shall be able to allow the administrator to search patients information according by their name	After assessing the homepage The Receptionist can able to search specific patients	high	receptionist	
REQ-38	The System Shall be able to allow the doctor to search patients information according by their name	The system allow the doctor to search patients From the patients treated by him by their name	high	Doctor	**REQ-01**
REQ-39	The System Shall be able to allow the doctor to search patients information according by their ID	The system shall be able to search patients to the doctor by typing the patients id	high	Doctor	**REQ-01**

REQ-40	The System Shall be able to allow the administrator to search patients information according by their ID	The system shall be able to search patients to the administrator by typing the patients id	high	administrator	
REQ-41	The system shall allow the receptionist those patients register for today with payment	The patient that can be registered for last time before or above 15 days must pay again for registration so the system must identify those patients that can be registered with payment from those that can be registered with out payment	high	receptionist	
REQ-42	The system shall be able give priority for emergency patients	The system shall must be able to give priority for those emergency Patients	high	receptionist	
REQ-43	The System Shall be able to allow the Receptionist to search patients information according by their ID	The system shall be enables the Receptionist to search patients information in ID	high	receptionist	

3.1.2.NonFunctional Requirements

NFPR -1**.The system shall enable the receptionist to search Patients information within 2 seconds.**

Description: when the **receptionist** searches any information in the system he/she clicks the search button and the system responds with in 2 seconds

Priority - high

Pre-condition: the **receptionist** must login to the system and the **receptionist** want to access the information from the system.

Post-condition: the **receptionist** accesses the information they want.

NFPR -2.The system shall able to use textual information.

Description: the necessary services that are given by the system is in the form of words 'text'.

Priority medium

Pre-condition: the authorized users or the users which are authorized to update and change database always use texts to update the information.

Post-condition: the users get any information from the system is in text format.

NFPR -3**.The system shall enable the statistics expert to search Patients information within 2 seconds.**

Description: the system enables the **statistics expert to search Patients information by clicking search button**

Pre-condition: the **statistics expert** must login to the system and the **statistics expert** want to access the information from the system.

Post-condition: the **statistics expert** accesses the information the patient.

NFPR -4**.The system shall enable the receptionist to update Patients information within 30 seconds.**

Description: the Receptionist changes patientes information when available from the database.

Priority high

Pre-condition: the **Patients** information needs to change and the patient must first registered .

Post-condition: the database information is updated inappropriate time.

NFPR -5**.The system shall enable the statistics expert to update Patients information within 30 seconds.**

Description: the Receptionist changes **Patients** information when available from the database.

Priority high

Pre-condition: the **Patients** information needs to change and the patient must first registered ..

Post-condition: the database information is updated inappropriate time.

NFPR -6.The system shall be binary compatible between Windows, and Linux operating systems.

NFCR-7.The system shall be accessible from any computer with Internet connectivity and at least one of the following web browsers: Microsoft Internet Explorer, Google Chrome, and Mozilla Firefox

3.4.2 Maintainability requirement.

NFMR-8.The system shall be easily maintainable by any person who has the skill to maintain software system. Also, other programmers shall be capable of easily modifying and updating code by using the documentation provided with the system.

3.4.3 Portability requirement

NFPR-9.The system shall be portable to any device .

3.4.4 Reusability requirement

NFRR-10.The system shall be well-documented in order for new administrators to change content.

NFRR-11.The system shall be designed in such a way that administrators may modify content without having to modify code.

3.4.5 Resource Utilization requirement

NFRUR-12.The system shall be accessible from any type of computer with an active Internet connection.

NFRUR-13.The system shall require an active server with adequate hard drive space and available memory.

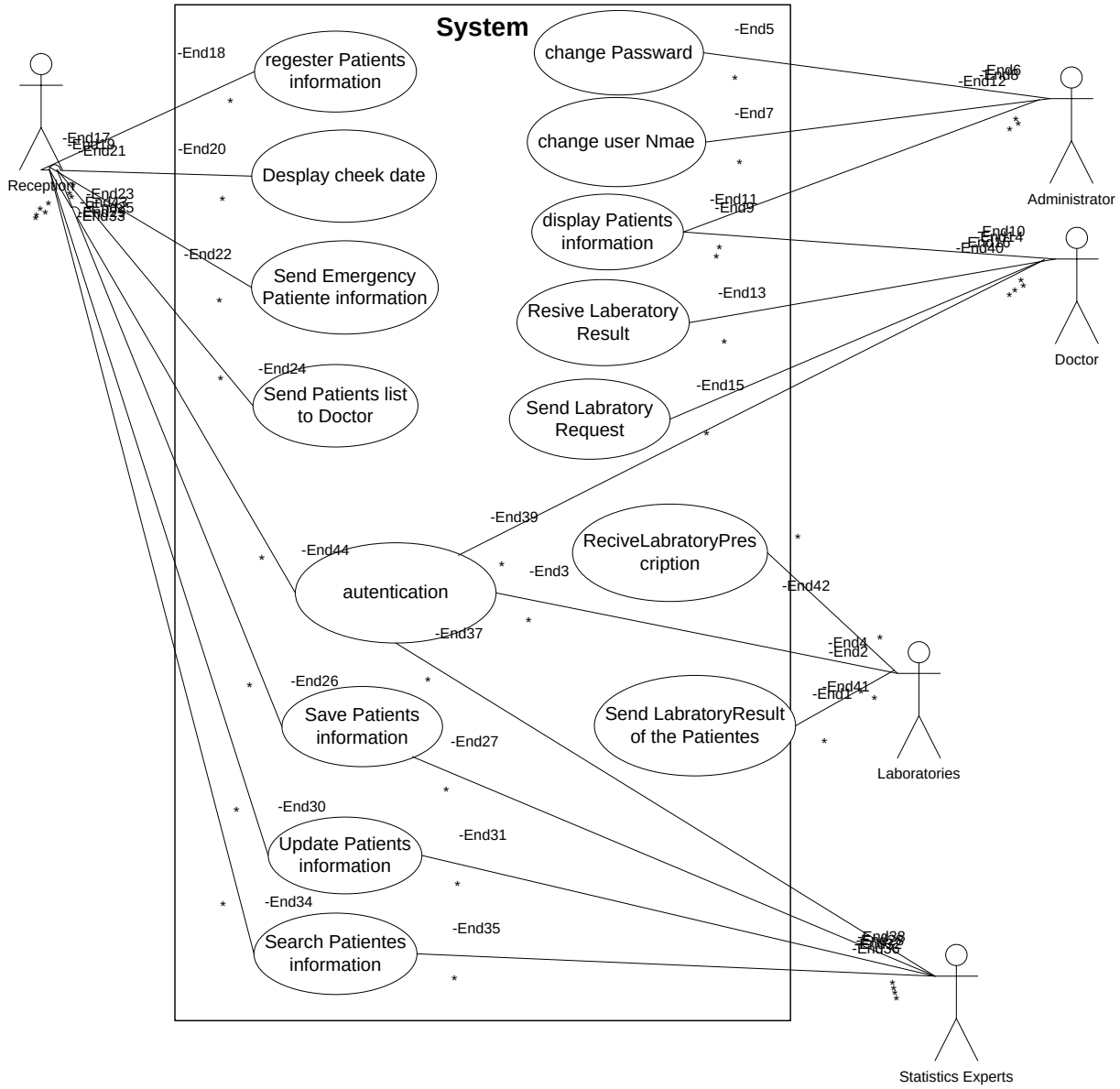
3.4.6 Serviceability requirement

NFSR-14.The system shall be easily modified by referencing the documentation that shall be provided.

3.4.7 Reliability requirement

NFRLR-14.The system shall be accessible at any time, with the exception of technology infrastructure failure.

NFRLR-16.the system shall not fail more than ones in a year


System
regester Patients information
Desplay cheek date
Send Emergency Patiente information
Send Patients list to Doctor
change Passward
change user Nmae
display Patients information
Resive Laberatory Result
Send Labratory Request
autentication
ReciveLabratoryPres cription
Save Patients information
Send LabratoryResult of the Patientes
Update Patients information
Search Patientes information
Reception
Administrator
Doctor
Laboratories
Statistics Experts

Use case description for Search Patients information

Name	Send patient list to doctor	
Actors	Receptionist	
Goals	to send patients information to the doctor	
Pre condition	The patient must first registered	
Summary		
Related use case		
Steps	User Action	System Response
	1,The user log in to his home page 2,the user clicks the search tab 4,the user enters the patients Name , ID 5,the user clicks enter key 9,if not found message in step 8 is displayed then go back to Step- 4 10-use case ends	 3,the system opens the search dialog box 6,the system searches the patients information from the data base 7,if found the system displays the patients information 8,else the system displays not found message
Post condition	The searched patients information will be displayed	

Use case description for Send patient list to doctor

Name	Search Patients information	
Actors	Receptionist, statistics expert	
Goals	To search Specific patients information	
Pre condition	The user must first log in to the system	
Summary		
Related use case		
Steps	User Action	System Response
	1,The Receptionist selects the patients list and the intended doctor 2,the Receptionist clicks enter 6,if step-5 occurs go back to step -2 7,use case ends	3,the system sends the patients information to the Intended doctor 4,if the message is successes fully sent the system displays successes fully sent message 5,if the system failed to send the message across the network the system displays failed to send message
Post condition	The Patients information is send to the doctor	

Use case description for update Patients information

Name	update Patients information	
Actors	Receptionist, statistics expert	
Goals	To update Patients information	
Pre condition	The patients information will be updated	
Summary		
Related use case		
Steps	User Action	System Response
	1,The Receptionist, statistics expert selects the patient that is going to update 2,the Receptionist, the statistics expert clicks the update button 4,the Receptionist, statistics expert enters the new data of the system 5,the Receptionist, statistics expert clicks the GO button 7,the user confirms 9,if step-8 occurs go back to step -2 10,use case ends	3,the system displays new dialog box to enter the new patients information 6,the system displays warning message (are you sure do you want to update patients information) 6,if the system successfully updates the patients information the system displays successes fully updated message 8,if failed to up date the system displays failed to update information
Post condition	The Patients information is successes fully updated	

Use case description Register Patients information

Name	Register Patients information	
Actors	Receptionist	
Goals	To Register new Patients	
Pre condition	The Receptionist must be first registered	
Summary		
Related use case		
Steps	User Action	System Response
	1,The Receptionist enters ti his home page 2,the clicks the registered tab 4,the Receptionist enters the Patients information 5,the Receptionist clicks GO Button 9,if step-8 occurs go back to step -4 10,use case ends	 3,the system opens the register window 6,the system cheeks the validity of the patients information 7, if the patients information is correct the system displays successes fully registered message 8,if the patients information is not valid the system displays invalid message 6,the system displays warning message (are you sure do you want to update patients information)
Post condition	The Patients information is successes fully registered	

Use case description send laboratory request

Name	send laboratory request	
Actors	Doctor	
Goals	To send laboratory request to the laboratory	
Pre condition	The patients must be first registered and sent to the doctor	
Summary		
Related use case		
Steps	User Action	System Response
	1,the doctor enters to his home page 2,The Doctor selects the patients wishes to send to the libratory 3,the doctor fills the laboratory request form 4,the Doctor selects the laboratory 5,the Doctor presses send button 4,the Receptionist enters the Patients information 5,the Receptionist clicks GO Button 9,if step – 8 occurs go back to step-3 10 , use case ends	6,the system sends the patients laboratory request 7,the system displays successfully sent message 8,the system displays failed to send message
Post condition	The Patients is successes fully registered sent to the libratory	

Chapter 4
4.External Interface Requirements

4.1 User Interfaces

User Interface requirements describe the logical characteristics of each user Interface that the system needs.

The user interface is one of the most important parts of any program because it determines how easily you can make the program do what you want.

UI - 1: **Authentication Page**

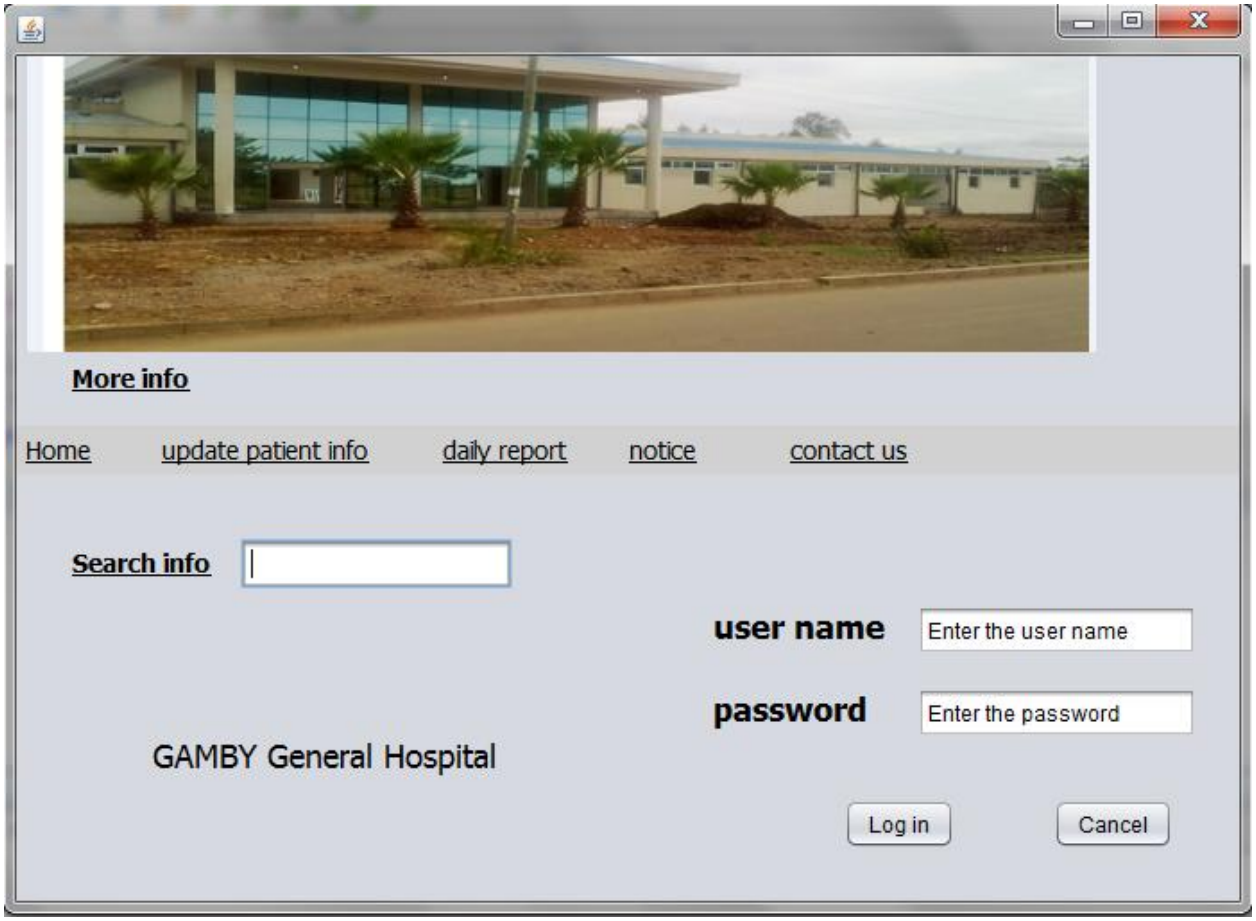


Figure 1: GUI - Authentication

UI - 2:Regester Patient Information Page

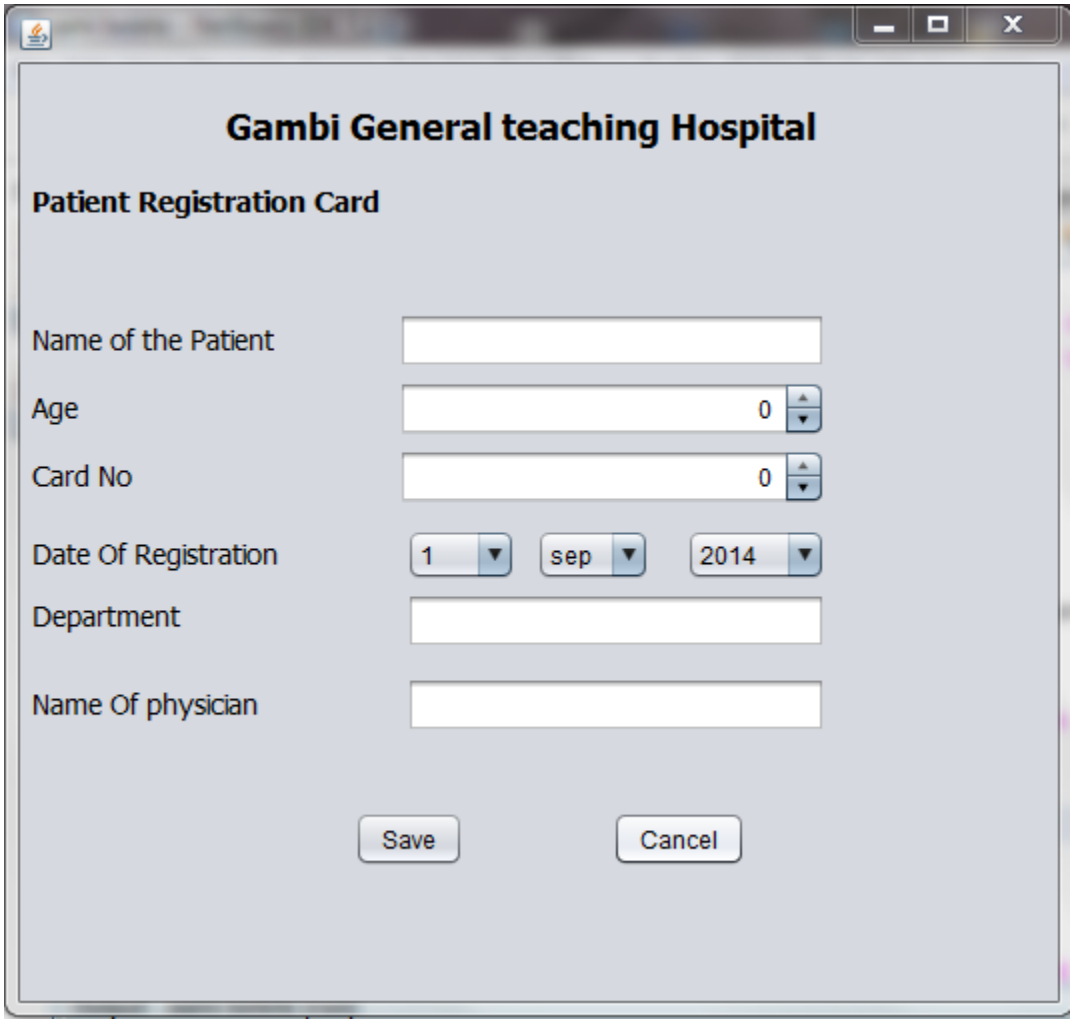


Figure 2: GUI - Register Patient Information

UI - 3: Display patient Information Page

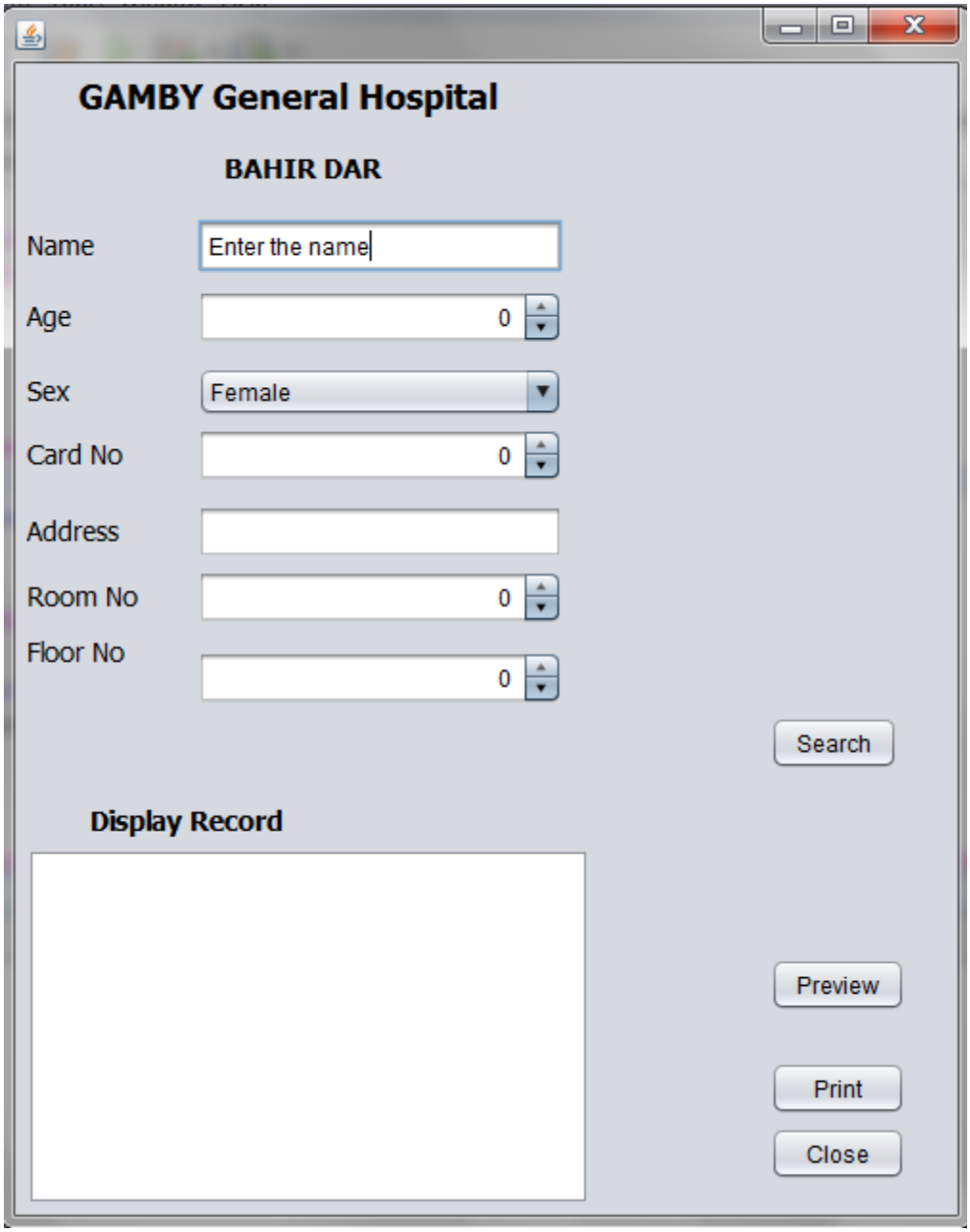


Figure 3: GUI - Display Patient Information

UI - 4: Send Laboratory Request Form Page

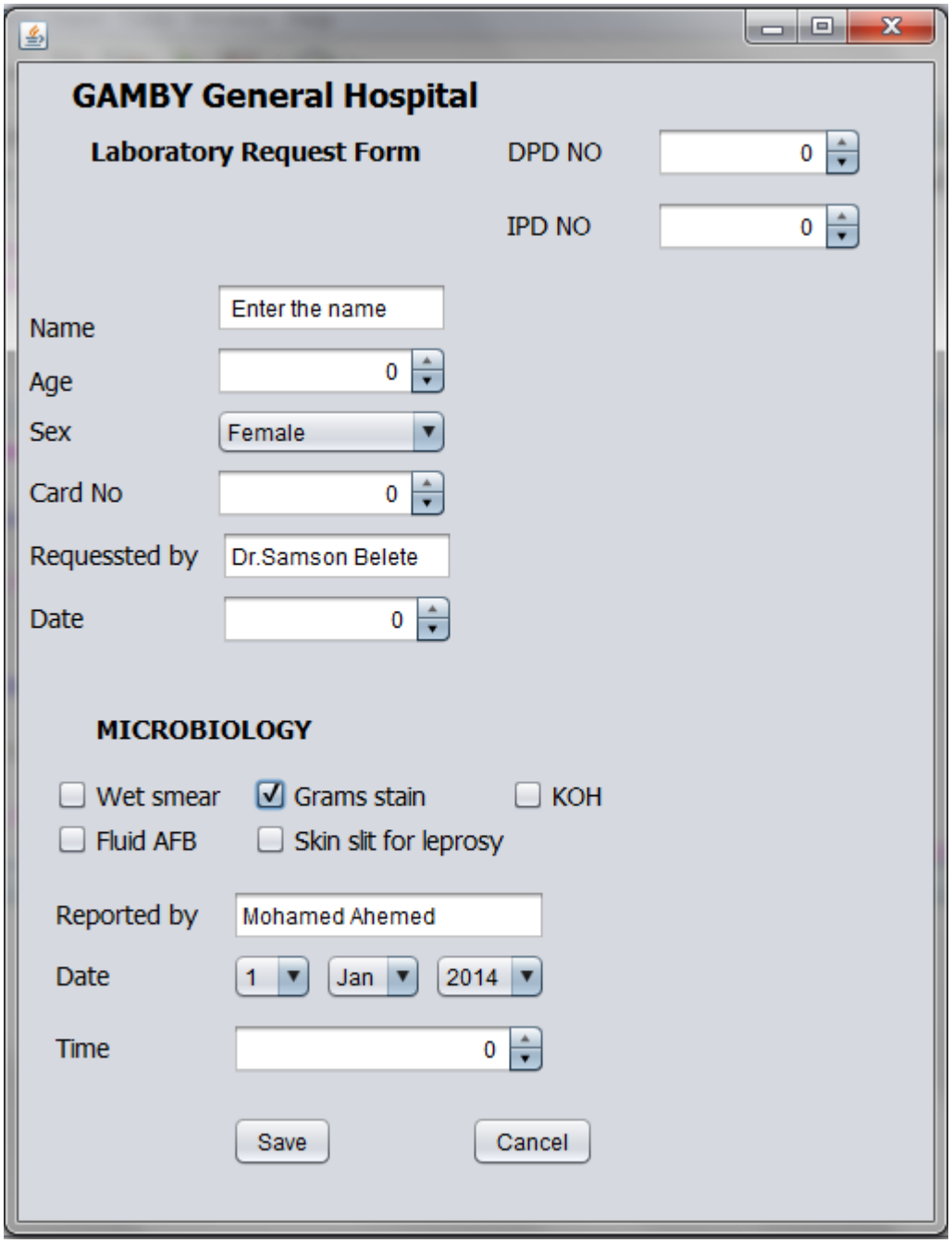


Figure 4: GUI - Send Laboratory Request Form

UI - 5: Send Patient List To Doctor Page

Figure 5: GUI - Send Patient List To Doctor

4.2 Hardware Interface

- Not applicable.

4.3 **Software Interfaces**

- Not applicable.

4.4 Communications Interfaces

- Not applicable.

Chapter Five

Analysis Models

5.1 Sequence Diagrams

- A type of interaction diagram, a sequence diagram shows the actors or objects participating in an interaction and the events they generate arranged in a time sequence. Often, a sequence diagram shows the events that result from a particular instance of a use case but a sequence diagram can also exist in a more generic form.

The vertical dimension in a sequence diagram represents time, with time proceeding down the page. The horizontal dimension represents different actors or objects.

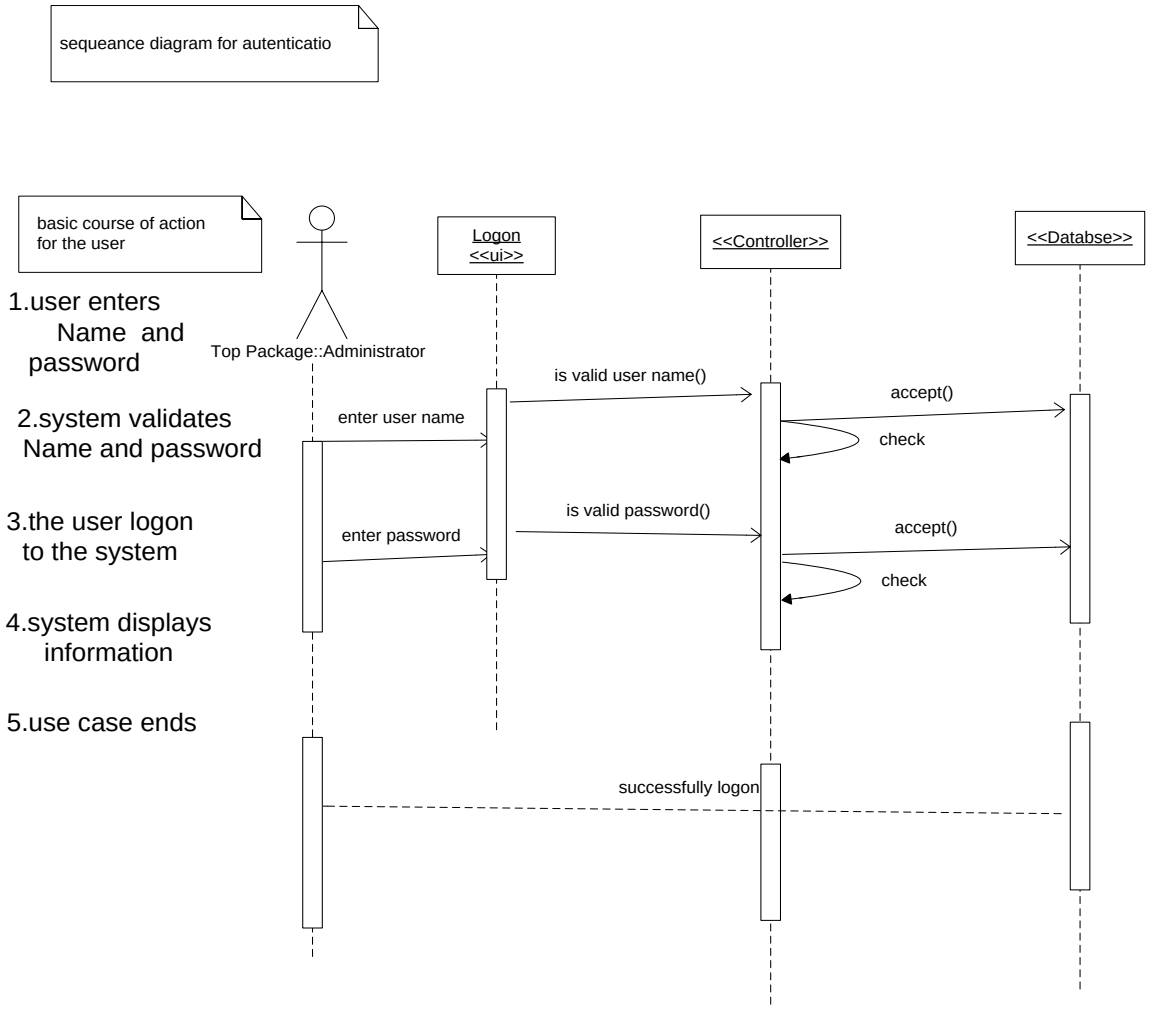
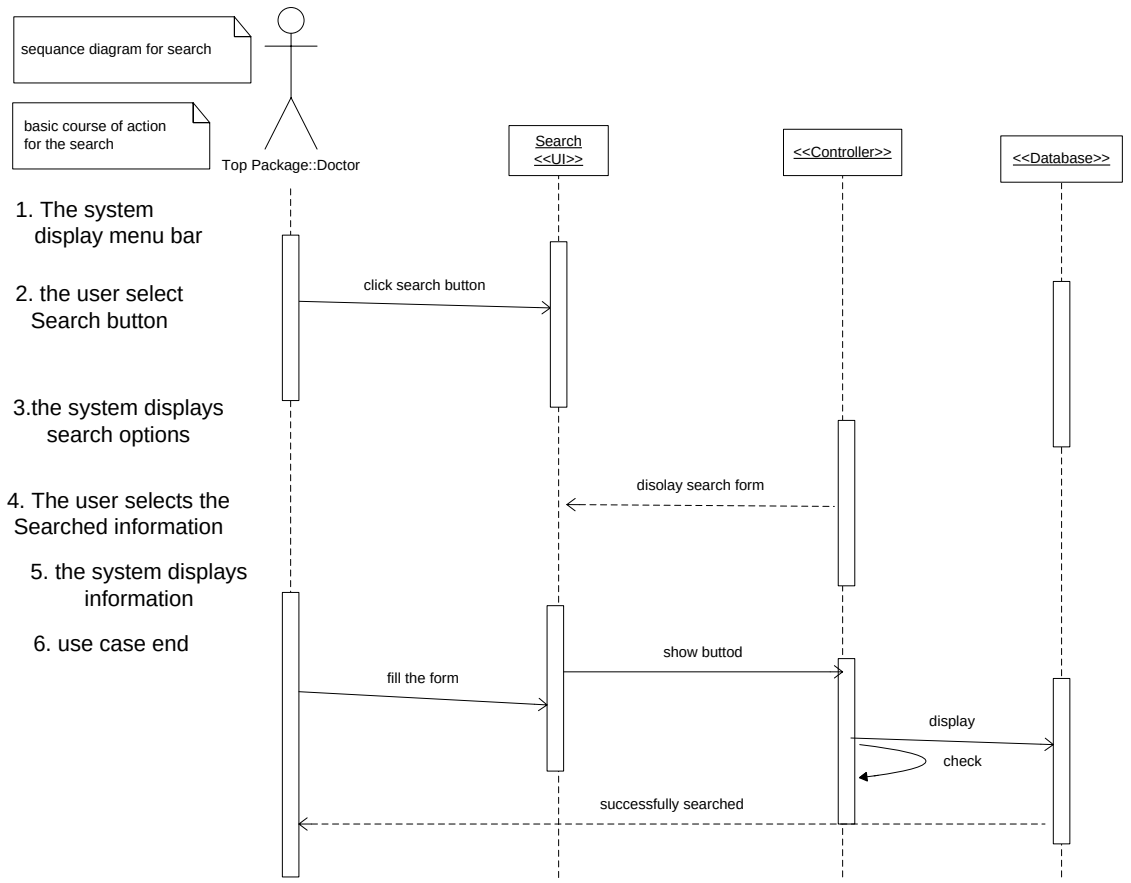


Fig. Sequence diagram
for registration form


sequance diagram for search
basic course of action for the search
Top Package::Doctor
Search <<UI>>
<<Controller>>
<<Database>>
1. The system display menu bar
2. the user select Search button
3.the system displays search options
4. The user selects the Searched information
5. the system displays information
6. use case end
click search button
disolay search form
show buttod
fill the form
display
check
successfully searched

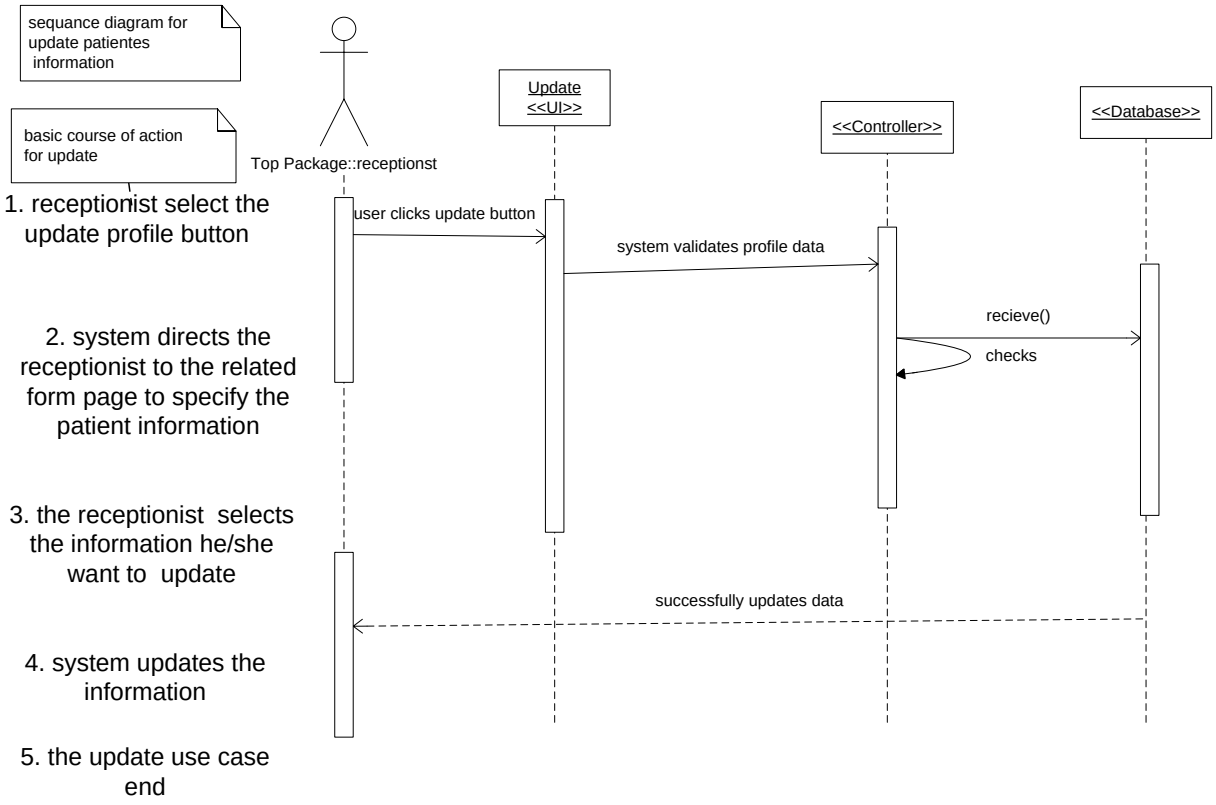


Fig. Sequence diagram for update

sequance diagram for register patientes

basic course of action for registration

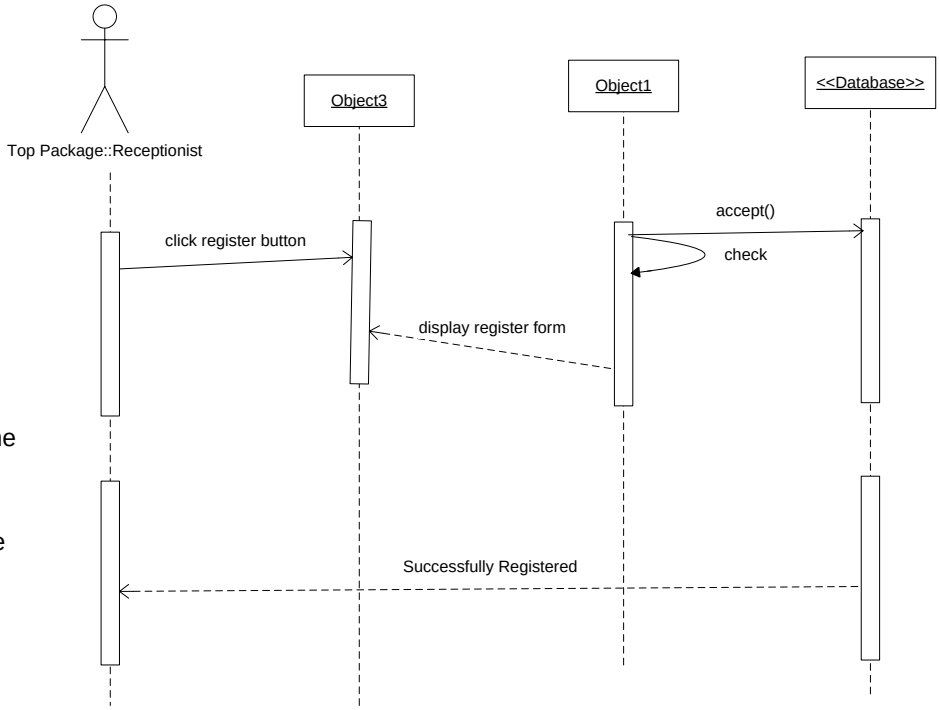
1. user select register button

2. system displays the registration form

3. user fill the form and submit

4. the system register the info. succesfully

5. registration use case end



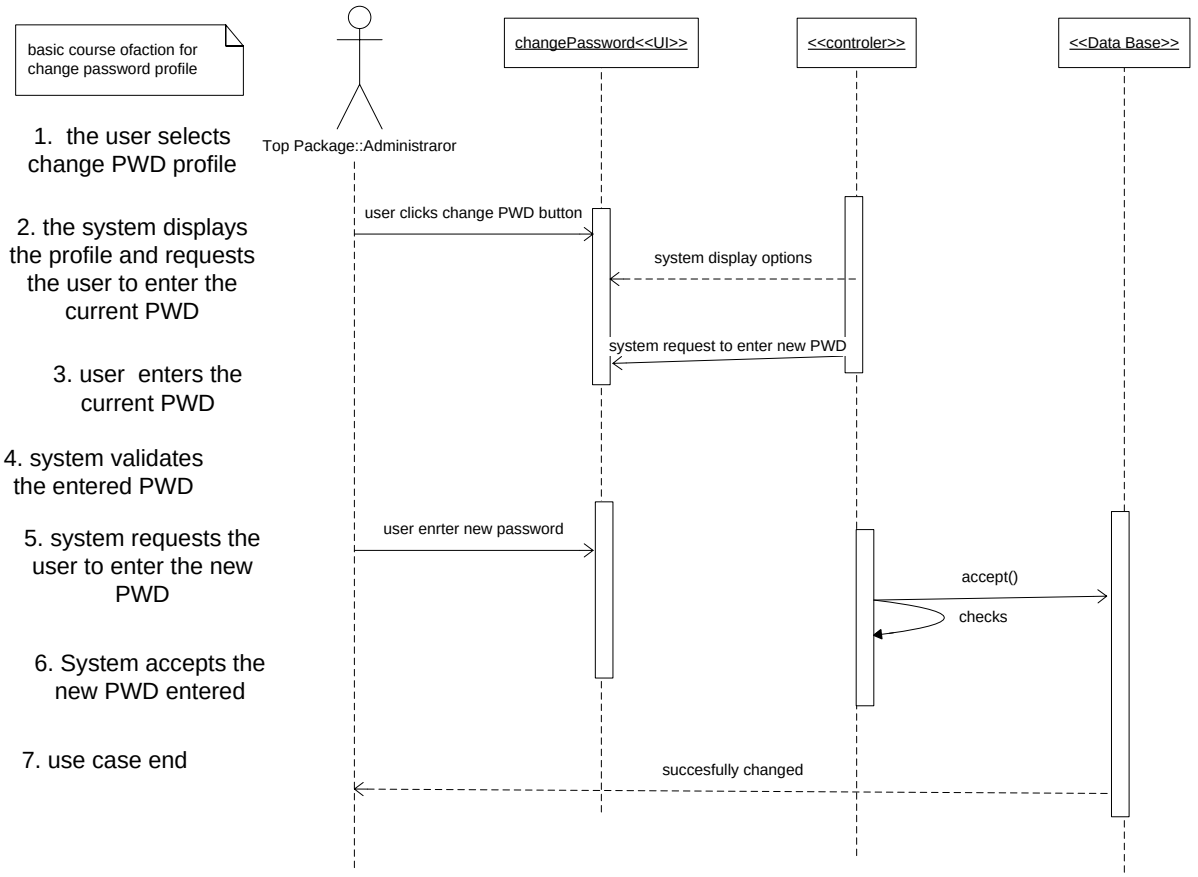


Fig. Sequence diagram
for change pw change

5.2Activity Diagrams

- Activity diagram illustrates the dynamic nature of a system by modeling the flow of control from activity to activity. An activity represents an operation on some class in the system that results in change in the state of the system. Typically activity diagram used to model work flow or business process and internal operation. Because an activity diagram is special kind of state chart diagram it use some of the same modeling conventions.

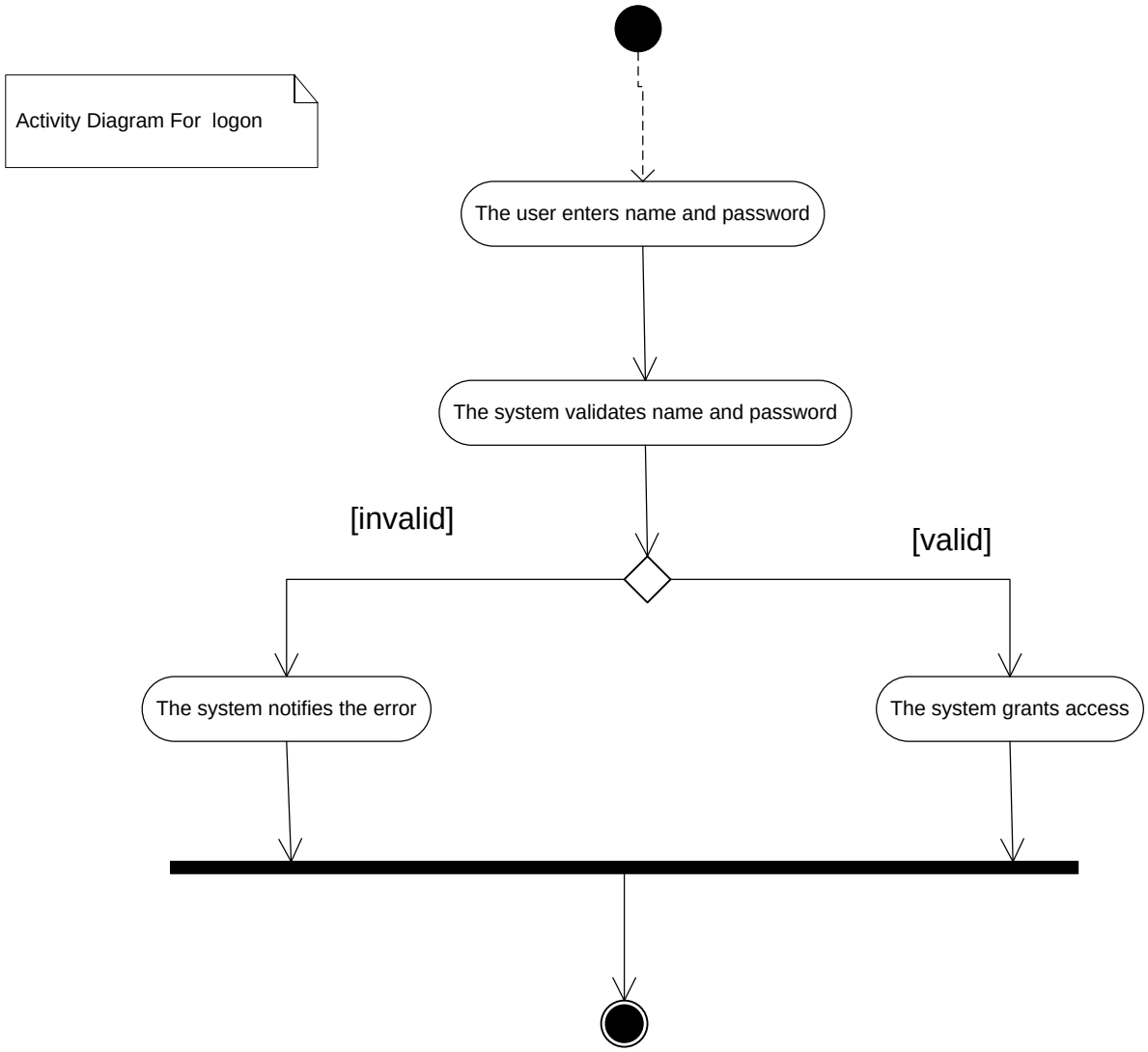


Fig. activity diagram for logon

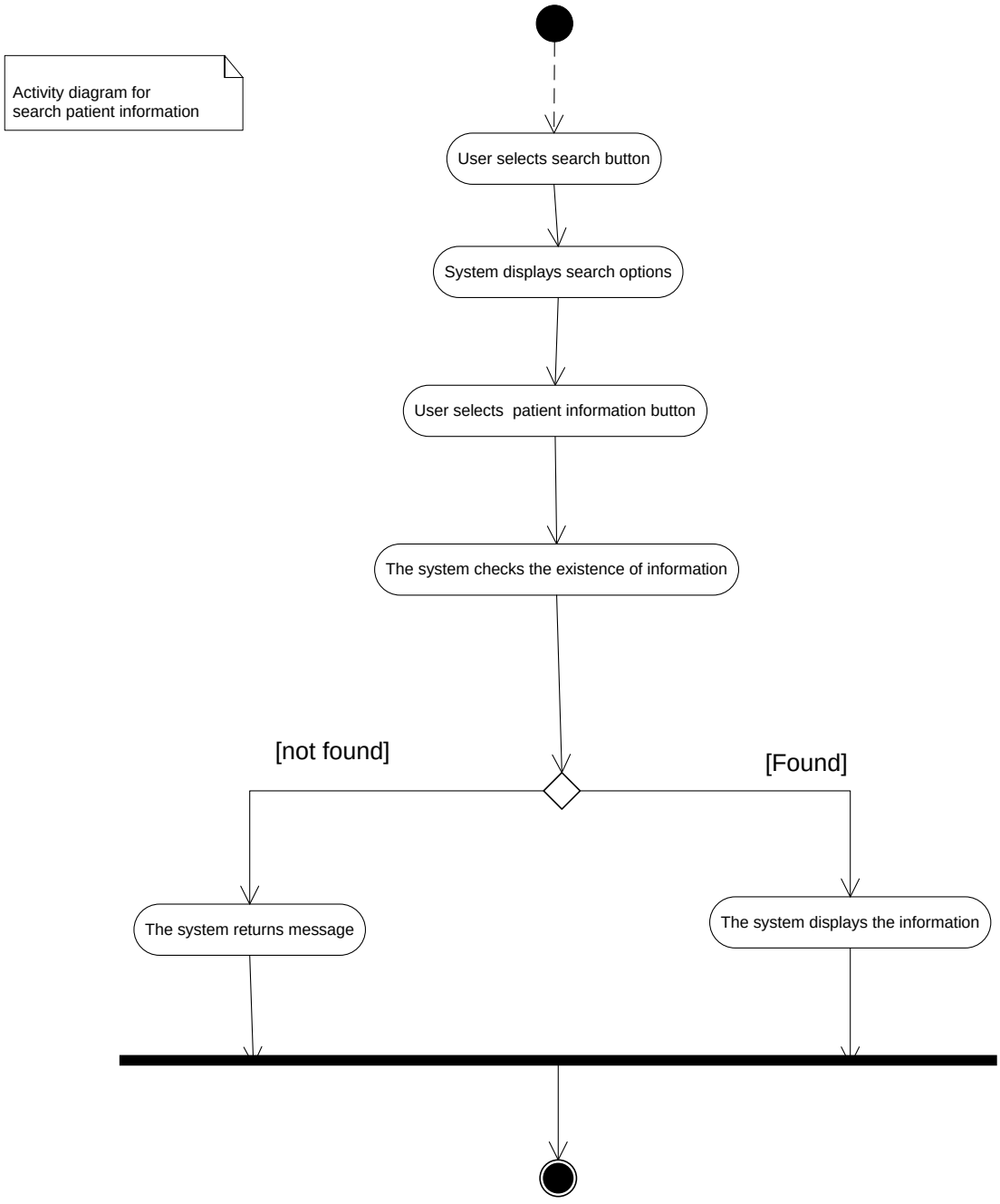


Fig. Activity diagram for patient information

{ activity diagram for up date patientes information}

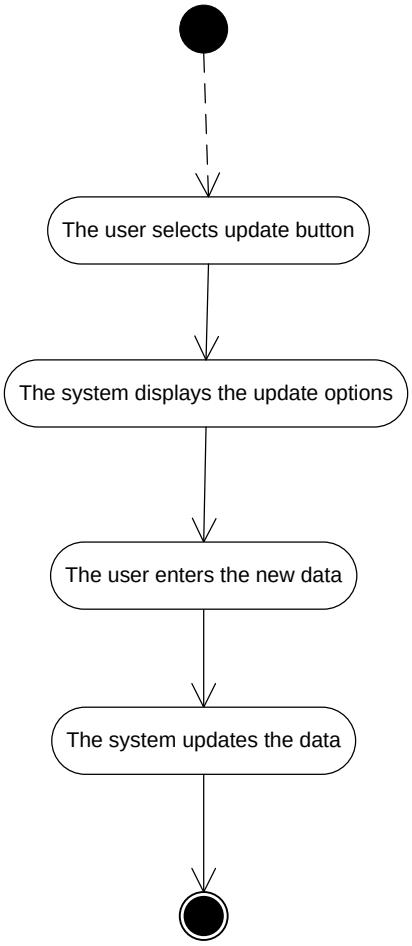


Fig. Activity diagram for search

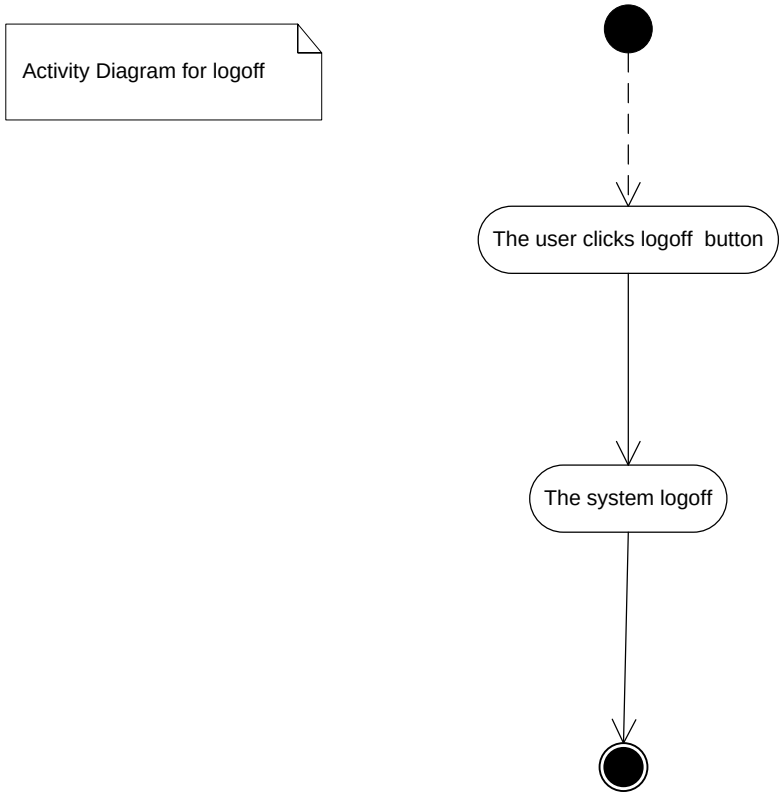


Fig. activity diagram for logout

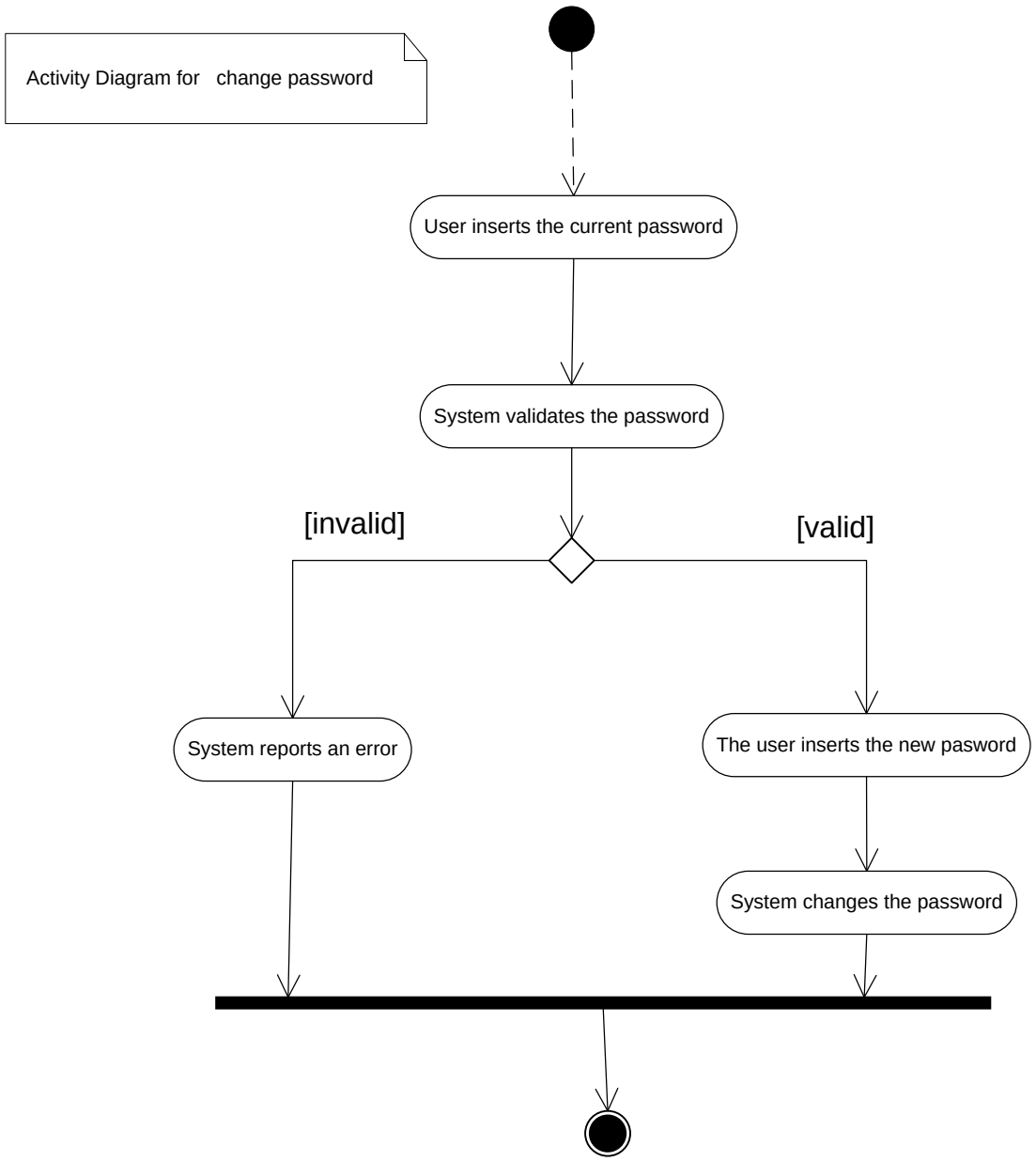


Fig. activity diagram for change password