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Documentation

Hotel Management System

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1. Introduction

This is the final report document for developed hotel management system for Dayal hotel. It consists of the milestones in development of finalized hotel management system.
As previously mentioned current manual system used by hotel, caused for decrement in growth of success and efficiency of the hotel.
Iterative waterfall method was used as the software development life cycle. Coding was handled through an Object-oriented approach. Above mentioned methodologies made project work load light and provided the ease of developing. The system was evaluated by several people regarding user levels of the developed system. Results of the evaluation helped for further maintenance of the product. Fully functional Dayal Hotel Management System will fulfil the main objectives and all the events of the hotel.

1.1 Purpose

The Software Requirements Specification (SRS) will provide a detailed description of the requirements for the Hotel Management System (HMS). This SRS will allow for a complete understanding of what is to be expected from the newly introduced system which is to be constructed. The clear understanding of the system and its' functionality will allow for the correct software to be developed for the end user and will be used for the development of the future stages of the project. This SRS will provide the foundation for the project. From this SRS, the Hotel Management System can be designed, constructed, and finally tested.
This SRS will be used by the system development team which is constructing the HMS and the hotel end users. The Project team will use the SRS to fully understand the expectations of this HMS to construct the appropriate software. The hotel end users will be able to use this SRS as a "test" to see if the constructing team will be constructing the system to their expectations. If it is not to their expectations the end users can specify how it is not to their liking and the team will change the SRS to fit the end users' needs.

1.2 Scope of the Project

The introducing software, Hotel Management System which is going to be implemented for Hotel Dayal will automate the major operations of the hotel. The Reservation System is to keep track in room and hall reservation and check availability. The Room

Management System is for manage all room types room services. The Inventory Control System will keep track in all inventories of the hotel and guest details will handled by guest management. Administration department will monitor the all. There is three End Users for HMS. The End Users Are Owner, Manager and Receptionist. Owner can access to all system functionalities without any restrictions. Manager can access to all system functionalities with limited restrictions. Receptionist can only access to the Reservation management section. To keep restrictions for each End User levels HMS can create different Login functions.

The objectives of the automated Hotel Management System is to simplify the day to day processes of the hotel. The system will be able to handle many services to take care of all customers in a quick manner. As a solution to the large amount of file handling happening at the hotel, this software will be used to overcome those drawbacks. Safety, easiness of using and most importantly the efficiency of information retrieval are some benefits the development team going to present with this system. The system should be user appropriate, easy to use, provide easy recovery of errors and have an overall end user high subjective satisfaction.

1.3 Definition, Acronyms and Abbreviations

H.M.S. – Hotel Management System

SRS – Software Requirements Specification

End users – The people who will be actually using the system

SQL – Structural Query Language

1.4 References

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[2] ElmasriNavathe,*Fundamentals of Database System 3rd edition*.Pearson education,2000.

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1.5 Overview

This SRS is organized into two parts the first is the overall description and the second section is the specific requirement.

The overall description will describe the requirement of Hotel Management System.

The specific requirement section describes the detail of the system.

2 Overall Description

2.1 Product Perspective

The Hotel Management System is a new self-contained software product which will be produced by the project team in order to overcome the problems that have occurred due to the current manual system. The newly introduced system will provide an easy access to the system and it will contain user friendly functions with attractive interfaces. The system will give better options for the problem of handling large scale of physical file system, for the errors occurring in calculations and all the other required tasks that has been specified by the client. The final outcome of this project will increase the efficiency of almost all the tasks done at the Hotel in a much convenient manner.

2.2 Product Functions

- Make Reservations
- Search Rooms
- Add Payment
- Issue Bills
- Manage Guest (Add, Update Guest)
- Manage Room Details (Add, Update, Delete)
- Manage Staff (Add, Update, Delete, View)
- Manage Inventory (Add, Edit, Delete)
- Set Rates
- Retrieve Reports (Staff payment, Income)
- Manage Users (Add, Update, Delete)
- Taking Backups
- E-mail notifications

Functional Requirements

Function 1	**Make Reservations**
Input	MemberCode, Total childs, Total Adults, check-in date, check out date, status, Number of nights
Output	Database Record, Database successfully updated pop-up
WorkFlow	Validate the given details and record the information in to the database.

Function 2	**Add Guest**
Input	Member MemberCode, Contact, Company, Name, E-mail, Gender, Address
Output	Database Record, Database successfully updated pop-up
WorkFlow	Validate the given details and record the information in to the database.

Function 3	**Add staff member**
Input	MemberCode, Employee Name, Employee Address, NIC, Salary, Name Age, Occupation, E-mail
Output	Database Record, Database successfully updated pop-up
WorkFlow	Validate the given details and record the information in to the database.

Function 4	**Search Rooms**
Input	Period, Check-in, Check-out, Guest
Output	Display a pop-up with available room details
WorkFlow	Validate the given details and check for the available rooms in a given time period and return its availability.

Function 5	**Add Payments**
Input	Total,1 pay time, Credit card details
Output	Database Record, Database successfully updated pop-up
WorkFlow	Validate the given details and record the information in to the database.

Function 6	**Issue Bill**
Input	Billing no, Quantity, Price, Taxes, Date, Services, Unit
Output	Printed version of the bill
WorkFlow	Validate the given details and total cost is calculated according to the Services gain by the customer.

Function 7	**Set Rates**
Input	Check-in, Check-out, Day, No. of guests, First night price, Extension price
Output	Database Record, Database successfully updated pop-up
WorkFlow	Validate the given details and record the information in to the database.

Function 8	**Taking Backups**
Input	Location to save the backup file
Output	Display a pop-up showing backup successfully created
WorkFlow	Validate the user given location to save the backup file. Save the backup file to the user specified location

2.3 User Characteristics

2.3.1 Owner: -

Owner of the Hotel Can Monitor and authorize the task handle by the system. Owner can use all the function performed by the system. Owner of the company as well as the system can access to the administration panel which is consider the core of the system. As the owner of the company owner gets the ability to manage the other users including their user levels and privileges. Taking backups of the system and restoring system can also be done by the Owner. Meanwhile he will be able to take all the kinds of reports available in the system. As the owner of the system and the company he has the power to set room rates as well. Hotel owner has the sole right of deleting a staff member from the system database.

2.3.2 Manager:

Manager is responsible for managing resources available in hotel management system. Manager also has most of the privileges mentioned above except the things regarding the payment handling. The reason for using a Manager is to reduce the work load done by the owner that cannot be assigned to the receptionist, as those tasks seem much responsible. The user level, Manager has the authority to take all the reports available in the system but here also except the reports related to financial stuff, hotel income. Manager has other abilities that receptionist, user level has. Such as, adding new staff member to the system, modifying them or removing them, adding new guests to the system, modifying them and removing them from the system, adding new inventory to the system, modifying them and removing them. Adding new room types to the system, modifying them and removing them

2.3.3 Receptionist:

As a hotel receptionist, he or her role will be to attain the goals of bookings and to ensure that all guests are treated with a high standard of customer service. Hierarchically receptionist role has the least accessibility to the system functions. Receptionist plays the boundary role of the system. He or she can perform limited functions such as registering new guest to the system, make reservations, Sending e-mail reminders to clients for booking confirmation. Management of hotel will prefer to hire receptionist who have a good standard of general education and possibly in subjects such as English, math and IT.

2.4 Constraints

Software development crew provides their best effort in developing the system. In order to maintain the reliability and durability of system, some design and implementation constraints are applied. Availability of an android app for hotel management system could make the system portable but due to time constraint it is not possible. System will need a minimum memory of 512MB. But it is recommended to have a memory of 1GB. When designing interfaces of system, we had the capability of work with new tools such as Dev Express. Considering the client's budget, we decided to create those interfaces in a simple realistic manner using affordable technology.

2.4.1 Hardware

1. **Operating System** Supports all known operating systems, such as Windows, Linux
2. **Computer** 512MB+ RAM, monitor with minimum resolution of 1024x768, keyboard, and mouse
3. **Hard Drive** should be in NTFS file-system formatted with minimum 10 GB of free space
4. **A Laser printer** will need to be used to print these reports and notes

2.4.2 Software

1. Software is designed to run on any platform above Microsoft Windows 7 (32bit).
2. Microsoft .NET Frameworks 4.0 or above.
3. Microsoft SQL Server Management Studio Express 2010.

2.4.3 High level Language

1) MS SQL server studio express 2008 (backend)

2) C# (front end)

2.5 Assumption and Dependencies

Some software used in implementing the system is with high cost and the client has agreed to afford the amount of money needed to purchase them. It's assumed that client won't change that decision on the next phases of the software development. Although we assume that client is using windows 7 or windows 8. Otherwise if client use an open source operating system, there is a need of changing the SRS accordingly.

Specific Requirement

3.1 Functional Requirement

- Make Reservations
- Search Rooms
- Add Payment
- Issue Bills
- Manage Guest (Add, Update Guest)
- Manage Room Details (Add, Update, Delete)
- Manage Staff (Add, Update, Delete, View)
- Manage Inventory (Add, Edit, Delete)
- Set Rates
- Retrieve Reports (Staff payment, Income)
- Manage Users (Add, Update, Delete)
- Taking Backups
- E-mail notifications

3.2 Non Functional Requirements

3.2.1 Safety Requirements

There are several user levels in hotel management system, Access to the various subsystems will be protected by a user log in screen that requires a user name and password. This gives different views and accessible functions of user levels through the system. Maintaining backups ensure the system database security. System can be restoring in any case of emergency.

3.2.2 Security Requirements

Customer Service Representatives and Managers and owner will be able to log in to the Hotel Management System. Customer Service Representatives will have access to the Reservation/Booking and subsystems. Managers will have access to the Management subsystem as well as the Reservation/Booking subsystems. Owner has the maximum privilege to all subsystems. Access to the various subsystems will be protected by a user log in screen that requires a user name and password.

3.2.3 Other Requirements

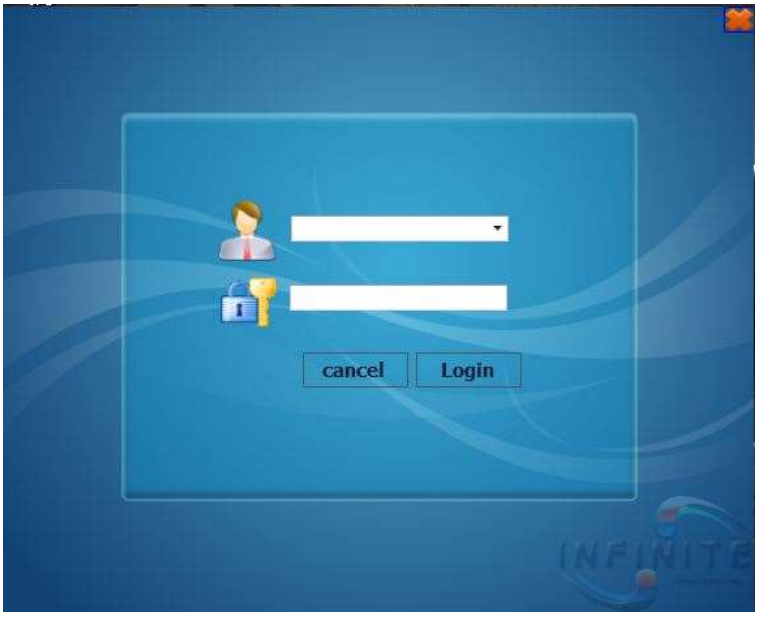
When the system is completely developed and submitted to the client, few sessions will be required to make the users of the system understand about the functionality of it and some time to adapt to the system. After those sessions, it's required that a member from the development team should spend sometime in the system background for an agreed time period. That time period will be used in identifying new bugs that could not be reached in the earlier phases of the development process.
Client should have a valid e-mail account in order to receive reservation e-mail notifications.

3.3 External Interface

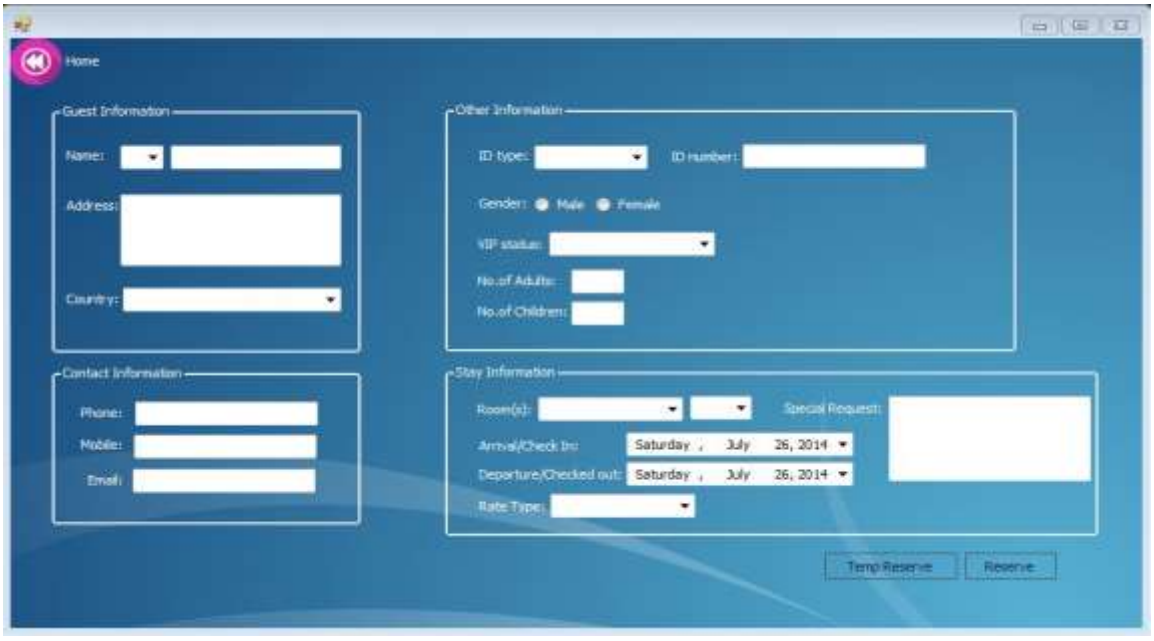
3.3.1 User Interface

User friendly dashboard of system

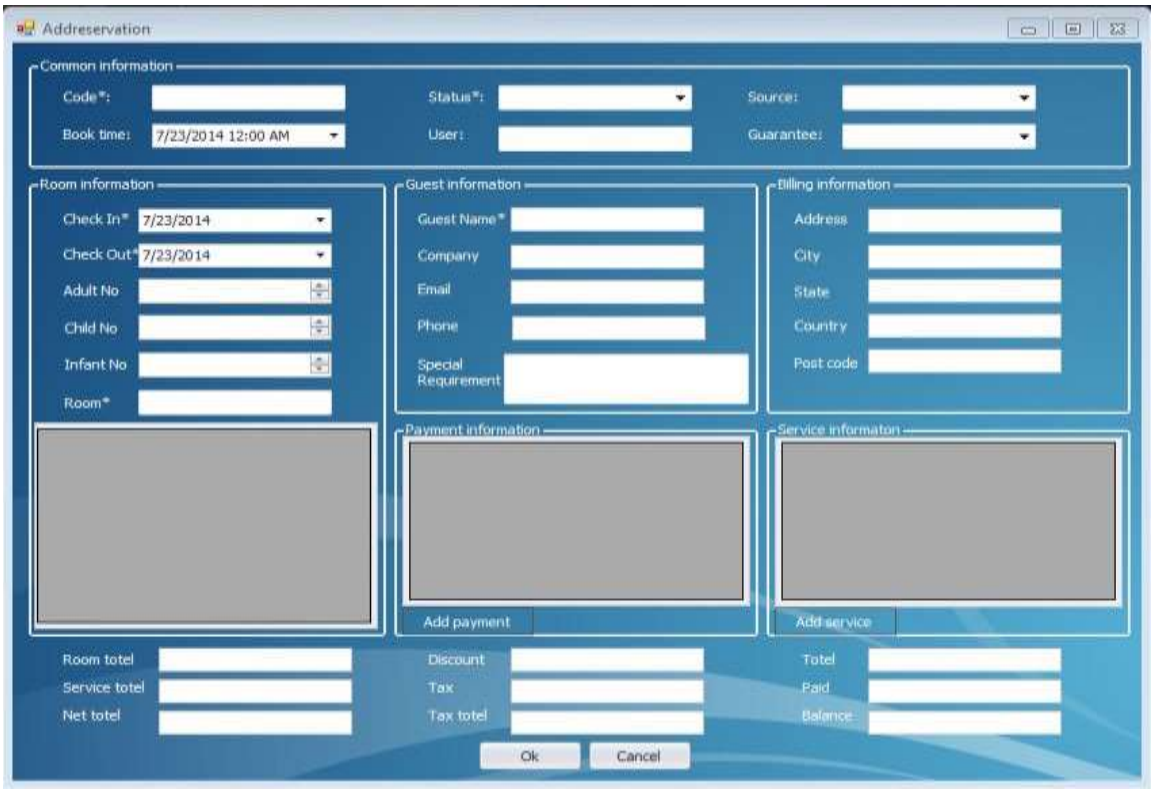
Login interface is used to login to the system using username and password for three different users



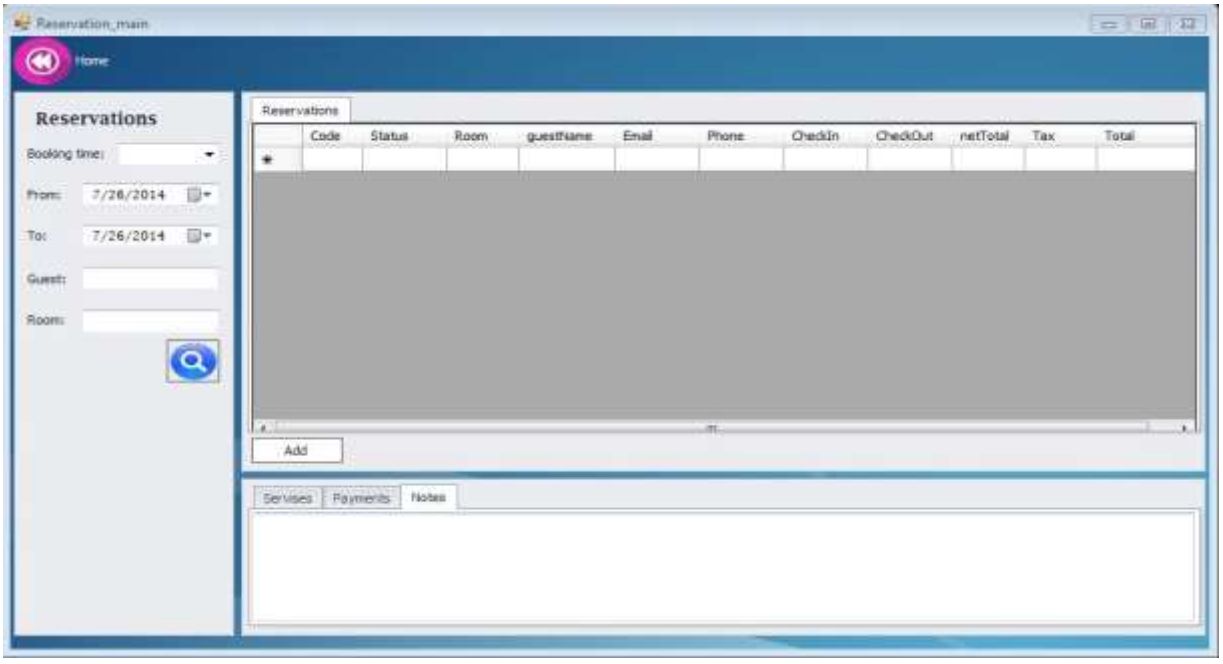
Adding new guest to the system



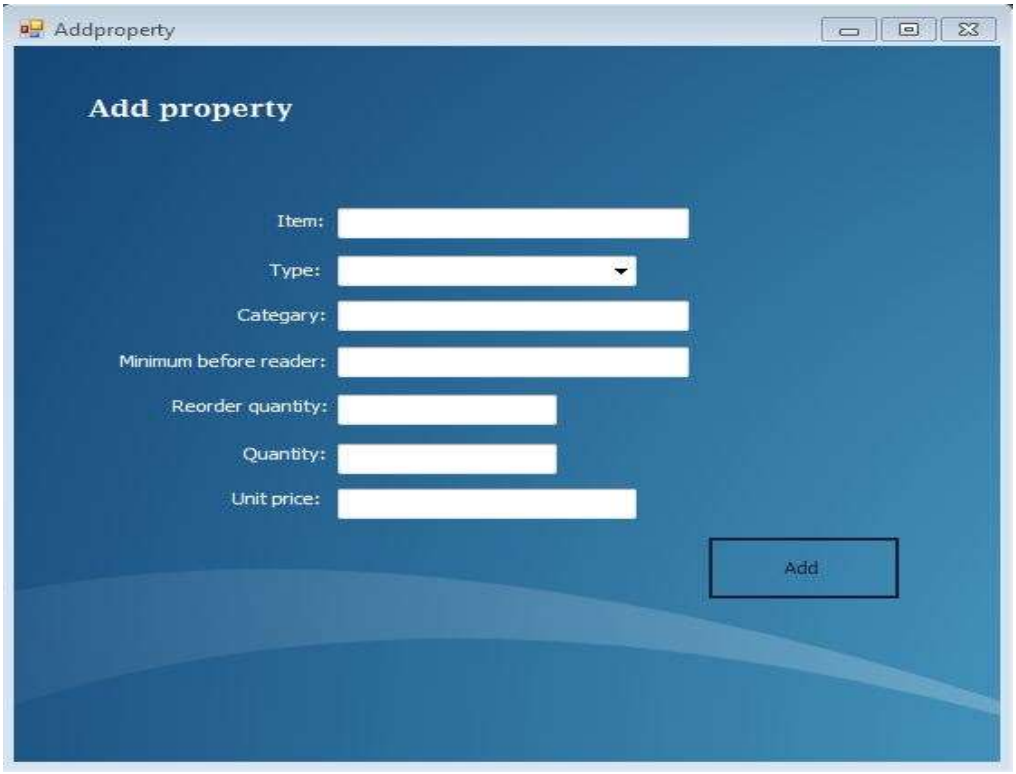
Make a new reservation



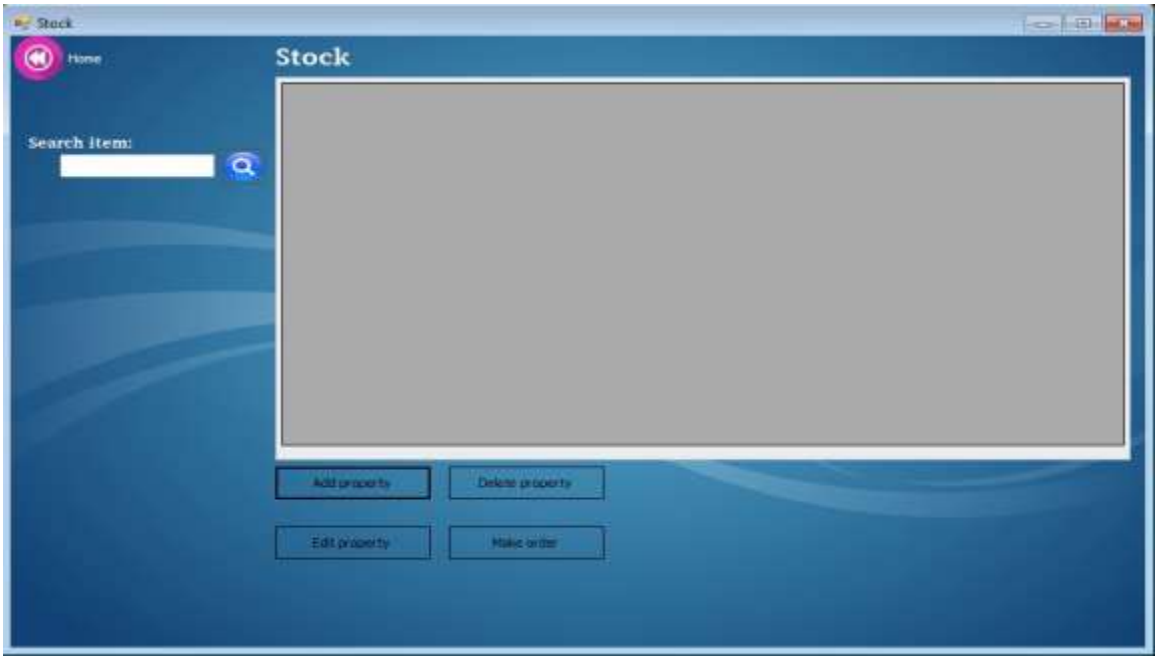
View reservations



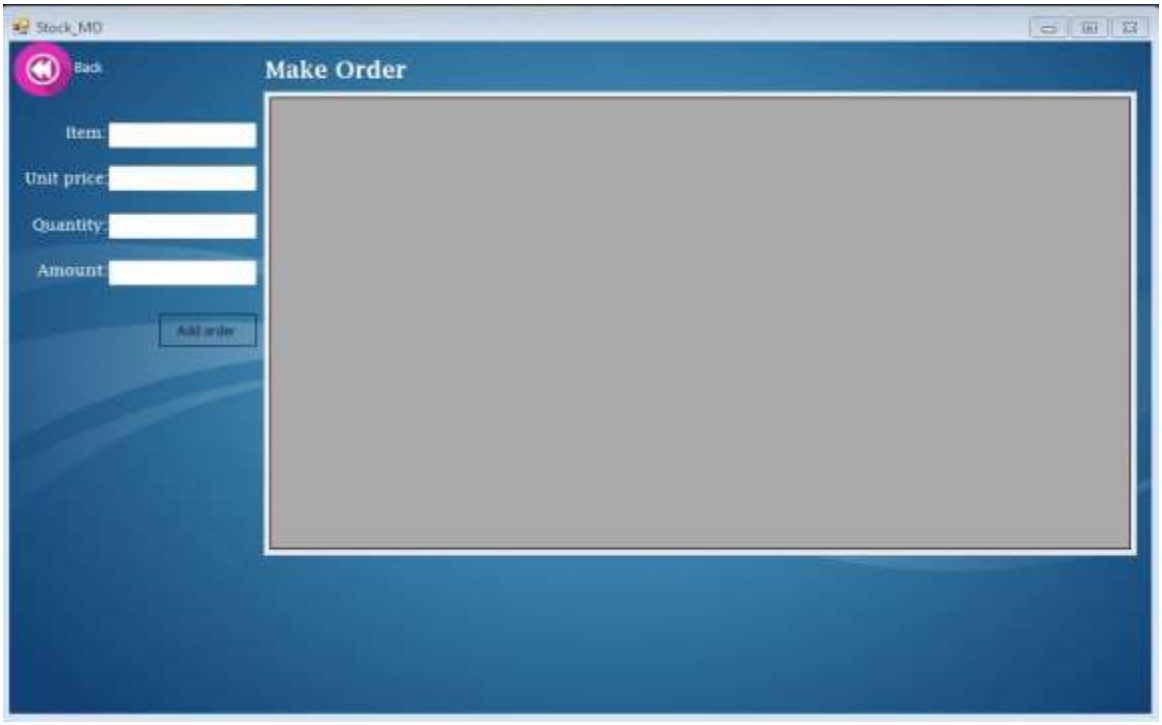
Adding new property to the system



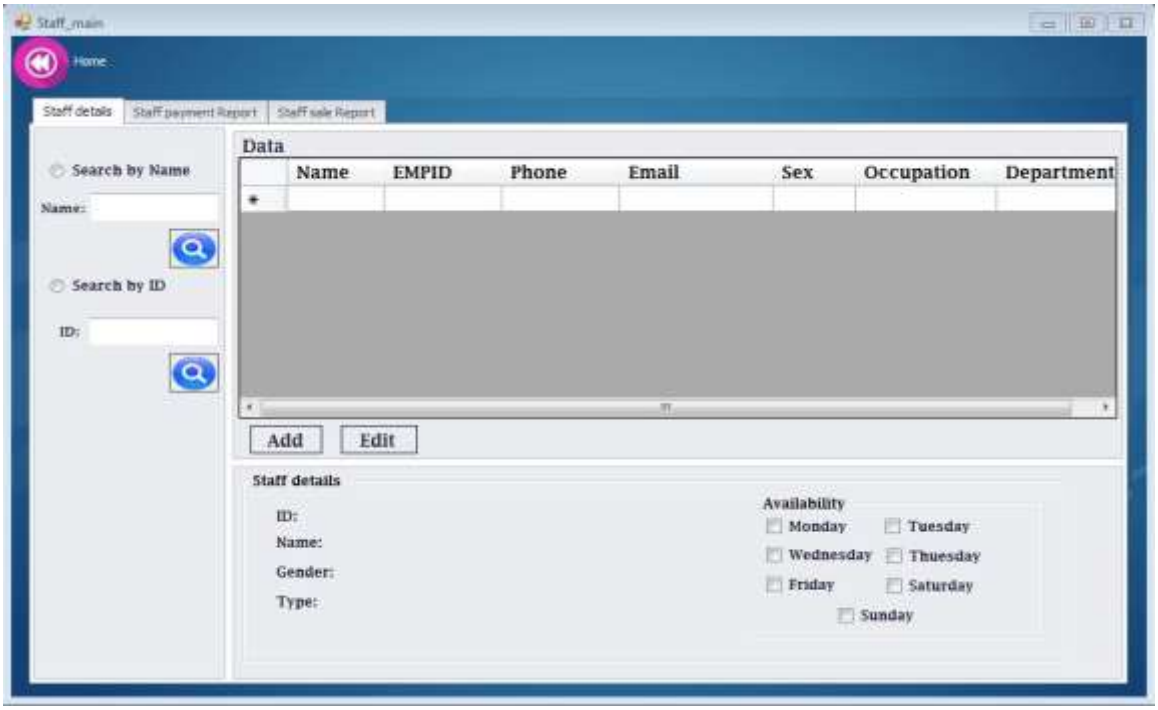
Stock management



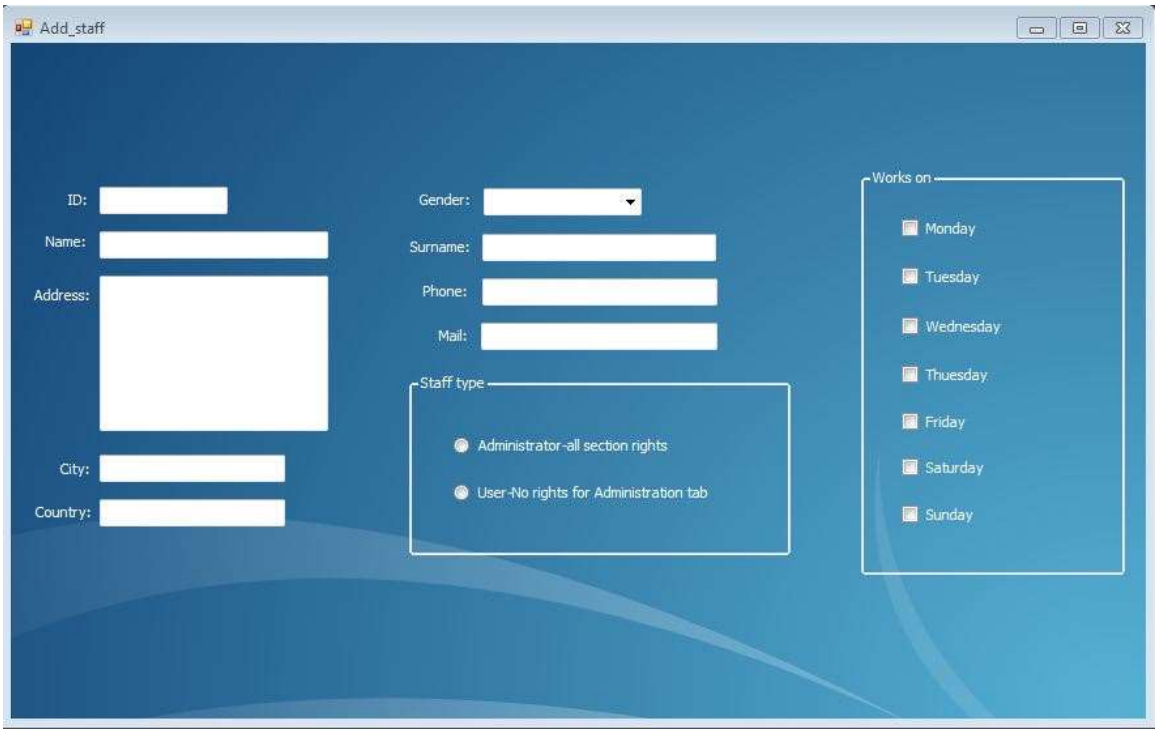
Make a new order



Staff management



Adding a new staff member



3.3.2 Hardware Interfaces

Reservation alerts will be sent to the one of the member of hotel staff as an e-mail notification. So there is a need of broadband internet connection. Client should able to keep a stable internet connection.
A laser printer will be needed when printing bills and several reports

3.3.2 Software Interfaces

The computer this software going to be install need to have Windows Operating System equal or above, Windows 7. On that Windows platform .Net 4.0 will be installed and that will be the platform the particular software will be run. There will be an ADO.NET data transmission with the Microsoft SQL Server Management Studio Express 2010 R2 edition that will be installed in the same computer.

3.3.3 Database Interface

Guest

Results Messages

	membercode	name	gender	email	city	state	country	postalcode	License_plate	Driver_License	NIC	phone1	phone2	address
1	1234	charitha	Male	dgcharitha@yahoo.com	matara	matara		8100	4546456	544564	922864721v	716460345	716460340	matara
2	3333	suresh	Male	sursh@gmail.com	kandy	kandy		32455	4567	5454	901237872v	712343573	712343573	kandy
3	4444	amith	Male	amith@gmail.com	kadduwa	kadduwa	Nepal	81000	1267	9678	903452345v	714536783	714536783	kadduwa

Guest Phone

Results Messages

	memcode	phone
1	1111	711122345

Room

Results Messages

	roomno	name	buildingno	floorno	status	roomtype
1	1	r1	1	2	available	platinum
2	2	r2	2	2	available	platinum
3	3	r3	1	2	available	Bronze
4	4	r4	2	3	pending	Family
5	5	r5	1	2	available	Zilver

Room Type

Results Messages

	name	descriptions	status	standard_price	single_price	adults	children	extraadult
1	Bronze	simple life	pending	6000.00	4000.00	2	0	0
2	Family	feels like home	available	6000.00	6000.00	2	2	2
3	Gold	unique fascilities	available	10000.00	8000.00	2	0	1
4	platinum	most comfortable	available	12000.00	10000.00	2	2	1
5	Zilver	keep calm	pending	8000.00	6000.00	2	1	1

Reserve

Results | Messages

	membercode	roomno	reservationcode	checkin	checkout	no_of_nights	children	adults	status	performed_by
1	NULL	1	22	2014-08-01	2014-08-09	2	2	2	new	1234
2	4444	2	33	2014-08-05	2014-08-12	2	3	6	new	1234
3	3333	3	44	2014-09-01	2014-09-12	1	1	2	new	12
4	1234	4	55	2014-09-22	2014-09-28	3	5	2	new	2222

Services

Results | Messages

	code	name	rate	type	catid
1	201	coca-cola	3	softdrink	101
2	203	sandwich	2	supper	103
3	204	lemon gin	3	drink	102
4	205	carlsberg	5	softdrink	102
5	206	fruitjuice	5	softdrink	101

Service Category

Results | Messages

	catid	name	status
1	101	bevarages	available
2	102	liquor	available
3	103	supper	available

Bill

Results | Messages

	billing_no	date	quantity	price	taxes	units	service	empid	membercode	reservationcode
1	1	2014-09-12	2	1200.00	120.00	2	bevarages	12	1234	22
2	2	2014-09-15	2	600.00	20.00	2	supper	1234	4444	33
3	3	2014-06-22	4	1600.00	140.00	2	liquor	2222	3333	44
4	4	2014-12-04	1	500.00	10.00	2	supper	12	4444	55
5	5	2014-03-05	6	3000.00	400.00	3	liquor	345	1234	22

User

Results Messages

	empid	usersname	password	type
1	12	pieris	asderw	labour
2	1234	siripala	qwerty	receptionist
3	2222	anton	asdff	receptionist
4	345	amith	dsdasdff	roomboy

Staff

Results Messages

	empid	occupation
1	12	labour
2	1234	receptionist
3	2222	receptionist
4	345	roomboy

Employee

Results Messages

	empid	name	department	email	sex	salary
1	12	pieris	bevarage	peiris@mail	male	12000.00
2	1234	siripala	cleaning	siripala@gmail.com	male	20000.00
3	2222	anton	servising	anton@gmail.com	male	3000.00
4	345	Amith	managing	Amith@gmail.com	male	45000.00
5	577795	Charitha	xxxxxxxxx	Charitha@gmail.com	male	35000.00

Employee Phone

Results Messages

	empid	phone
1	12	716470147
2	12	723860042
3	12	787565421
4	1234	754220464
5	2222	710164463
6	345	712956579
7	577795	773456374

Event

Results Messages

	code	type	date	membercode
1	1111	wedding	2014-06-08	1234
2	2222	party	2014-02-05	3333
3	3333	wedding	2014-02-02	4444
4	4444	conference	2014-12-01	1234
5	5555	party	2014-11-02	4444
6	6666	wedding	2014-09-09	4444

Properties

Results Messages

	itemcode	item_name	quantity	unit_price
1	item1	soap	100	50.00
2	item2	bed sheet	10	1600.00
3	item3	towel	10	500.00
4	item5	table lamp	2	800.00
5	item6	curtain	4	2200.00
6	item7	tables	1	4000.00

Reusable Properties

Results Messages

	itemcode	remaining_period
1	item1	4
2	item3	3

Task

Results | Messages

	taskid	status	assign_date	finished_date	reservationcode	empid
1	t1	available	2014-09-03	2014-10-02	22	12
2	t2	available	2014-04-05	2014-12-07	33	1234
3	t3	available	2014-01-03	2014-04-02	44	2222
4	t4	available	2014-04-24	2014-04-27	55	345
5	t5	pending	2014-01-23	2014-10-12	44	577795

Staffassigntoevent

Results | Messages

	empid	code
1	12	2222
2	12	4444
3	1234	1111
4	345	1111
5	345	3333
6	577795	1111
7	577795	2222
8	577795	5555
9	577795	6666

Guest Request Service

Results | Messages

	code	reservationcode
1	201	22
2	201	44
3	203	33
4	204	22
5	205	22
6	205	55
7	206	22

Room Properties

Results Messages

	itemcode	reservationcode
1	item1	22
2	item2	22
3	item2	33
4	item5	33
5	item5	44
6	item6	44
7	item3	55
8	item7	55

Room Task

Results Messages

	taskid	roomno	membercode
1	t1	1	1234
2	t2	2	3333
3	t2	3	1234
4	t3	3	4444
5	t4	4	1234
6	t5	5	4444

3.3.4 Communications Interfaces

When a specific reservation reserved at the same time an e-mail notification will be sent to both relevant staff member's e-mail account and guest's account. Guest will be notified in the check-out date. To achieve that functionality, it requires having a stable internet connection. Mostly a broadband connection with the client's computer will provide the efficient service.

3.4 Performance Requirement

Performance requirements define acceptable response times for system functionality. Although the system is developed suiting for the least system performances, the performance of the system will highly depend on the performance of the hardware and software components of the installing computer. When consider about the timing relationships of the system the load time for user interface screens shall take no longer

than two seconds. It makes fast access to system functions. The log in information shall be verified within five seconds causes' efficiency of the system. Returning query results within five seconds makes search function more accurate.

3.5 Logical Database Requirements

The logical database requirements include the retention of the following data elements.

- Customer first name
- Customer last name
- Customer Code
- Customer address
- Customer phone number
- Number of occupants
- Room no
- Floor no
- Building no
- Room status
- Employee id
- Bill no
- Default room rate
- Rate description
- Guaranteed room (yes/no)
- Expected check-in date
- Actual check-in time
- Expected check-out time
- Actual check-out date
- Customer feedback
- Payment type
- Total Bill

3.6 Attributes

3.6.1 Reliability

Specify the factors required to establish the required reliability of the software system at time of delivery. Mean time between failures and mean time to recovery.

3.6.2 Availability

The system shall be available during normal hotel operating hours.

3.6.3 Security

The extent to which the Hotel Management System is safe from outside non-allowed user or attacks.

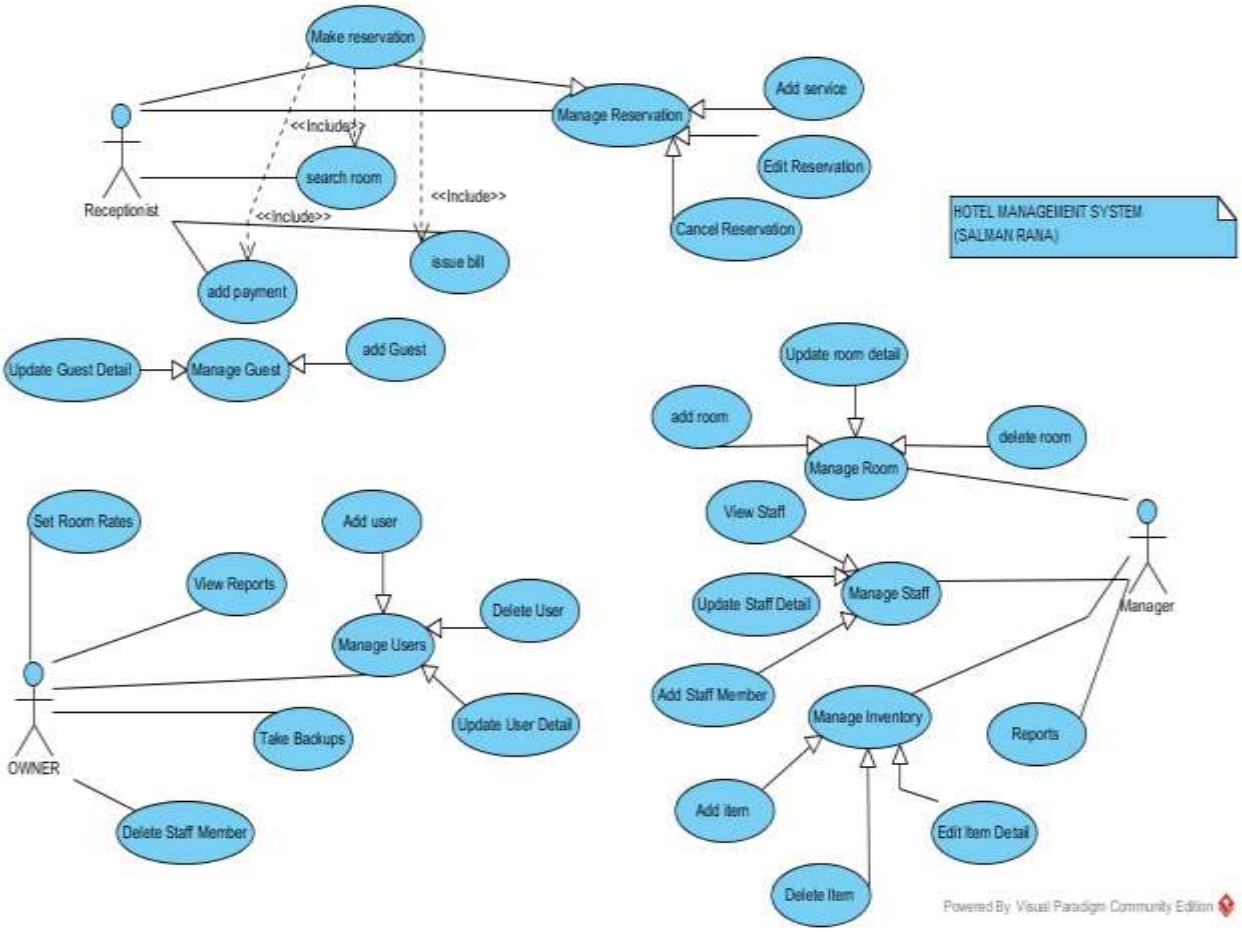
3.6.4 Maintainability

What design, coding standards must be adhered to exclusions created

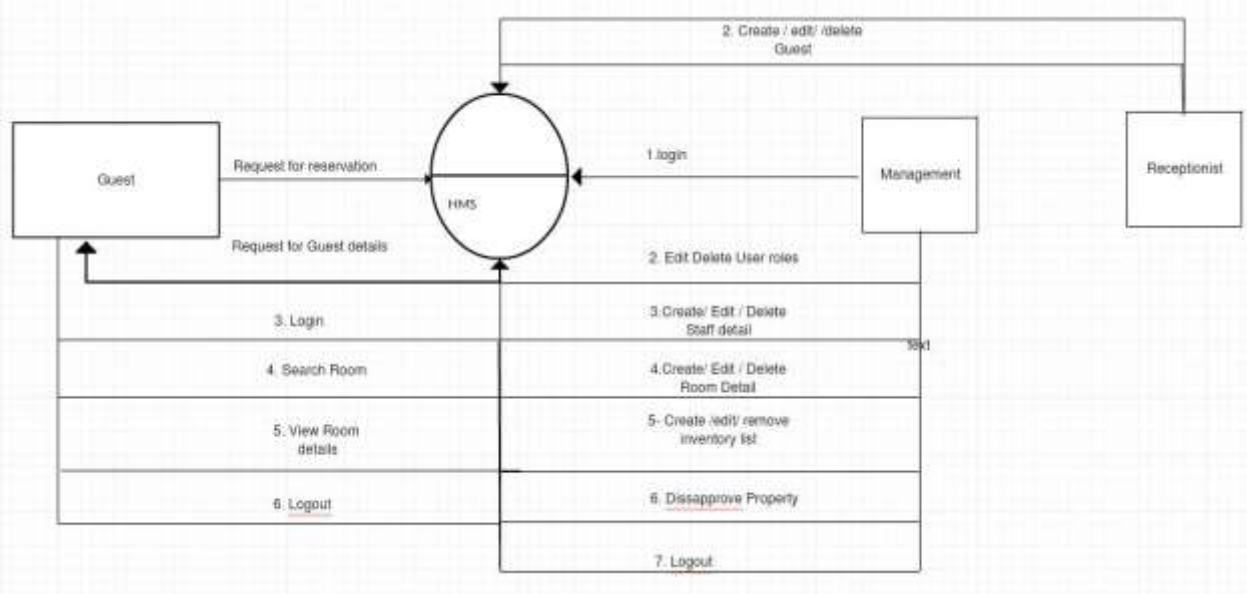
3.6.5 Portability

The Hotel Management System shall run in any Microsoft Windows environment

1-Use Case Diagram

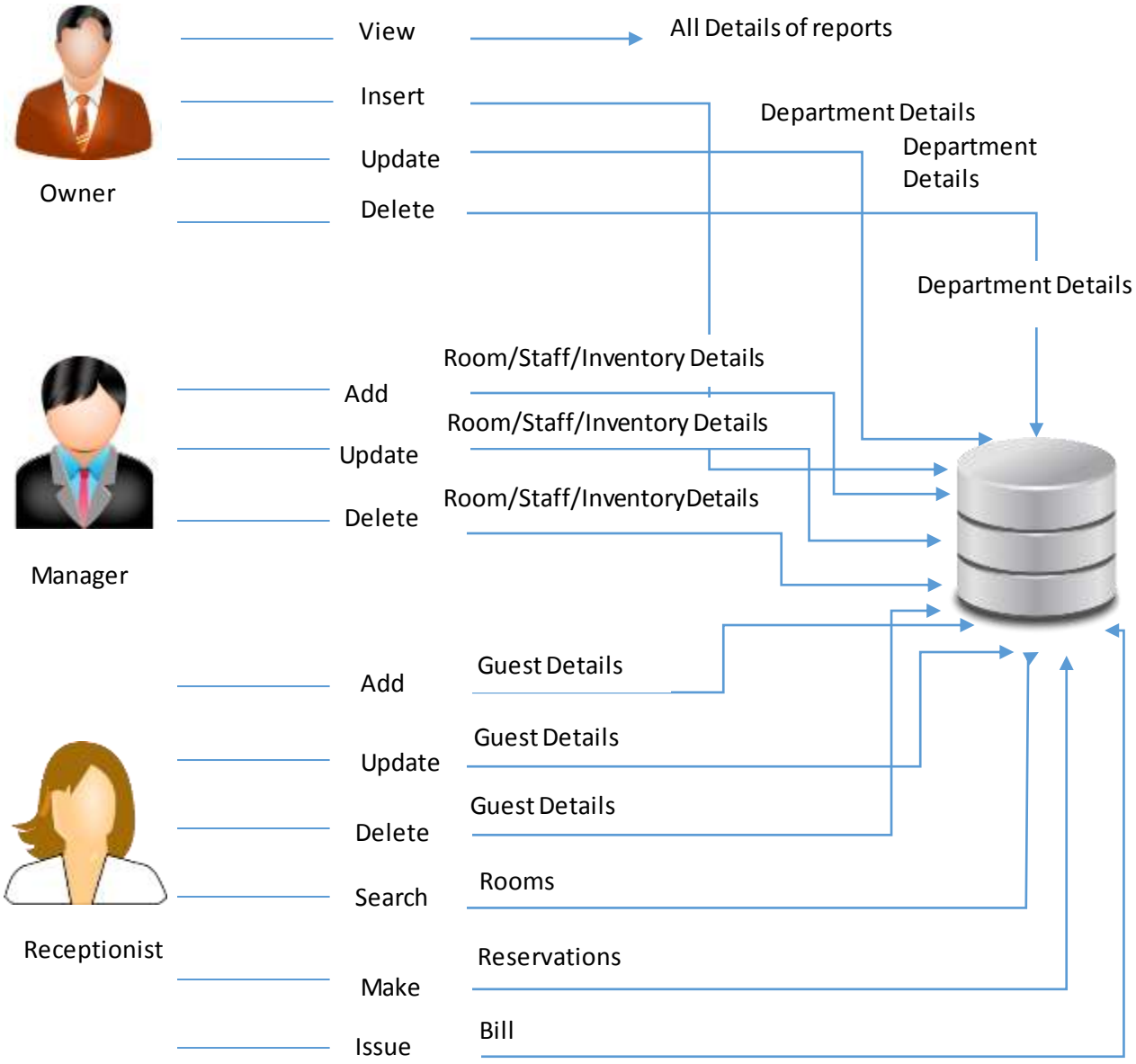


2-Data Flow Diagram

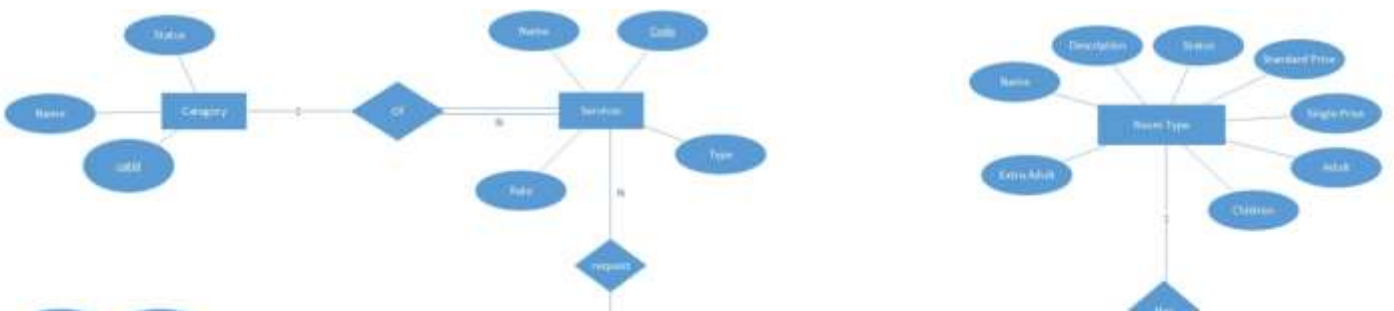


3-Architectural Diagram

Hotel Management System



4-ER Diagram



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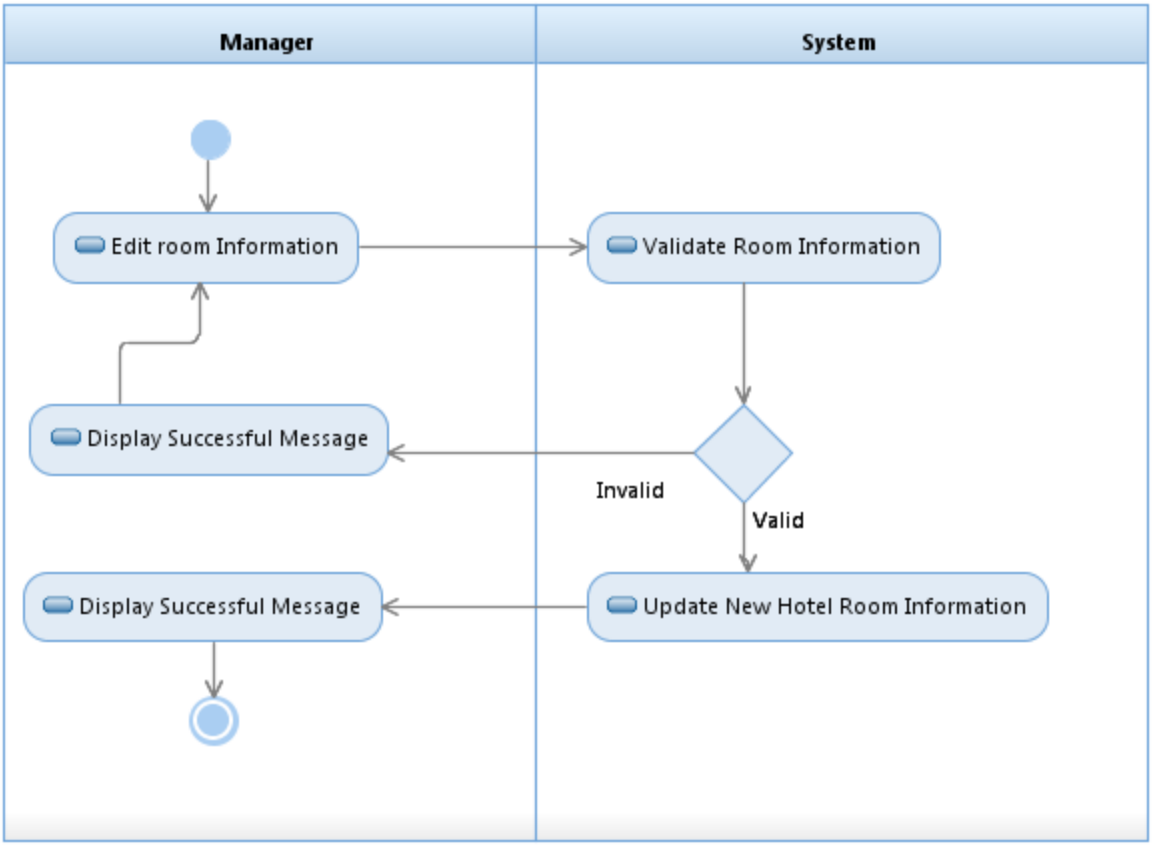
5-Activity Diagram

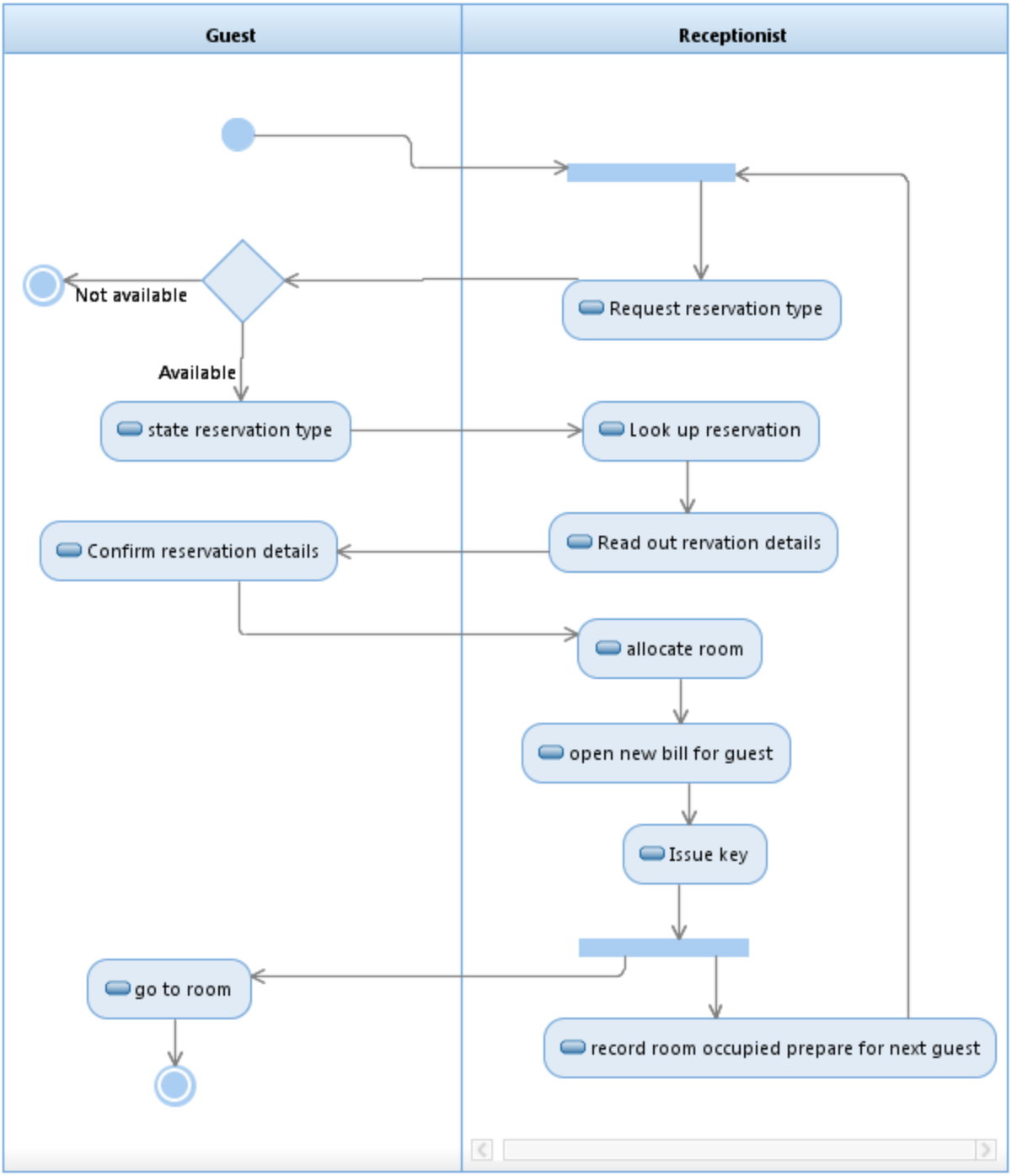
Add new Hotel Room

Edit Hotel Room

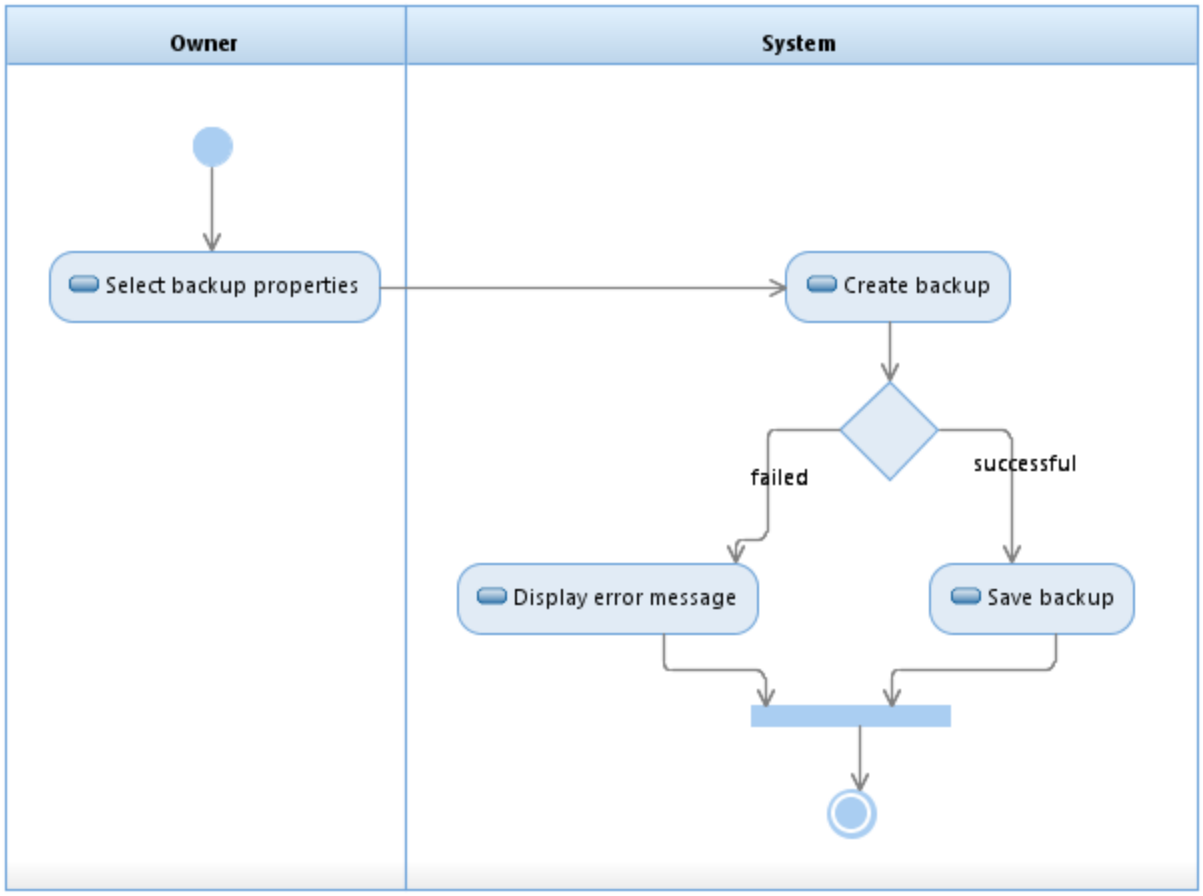


Hotel Management System

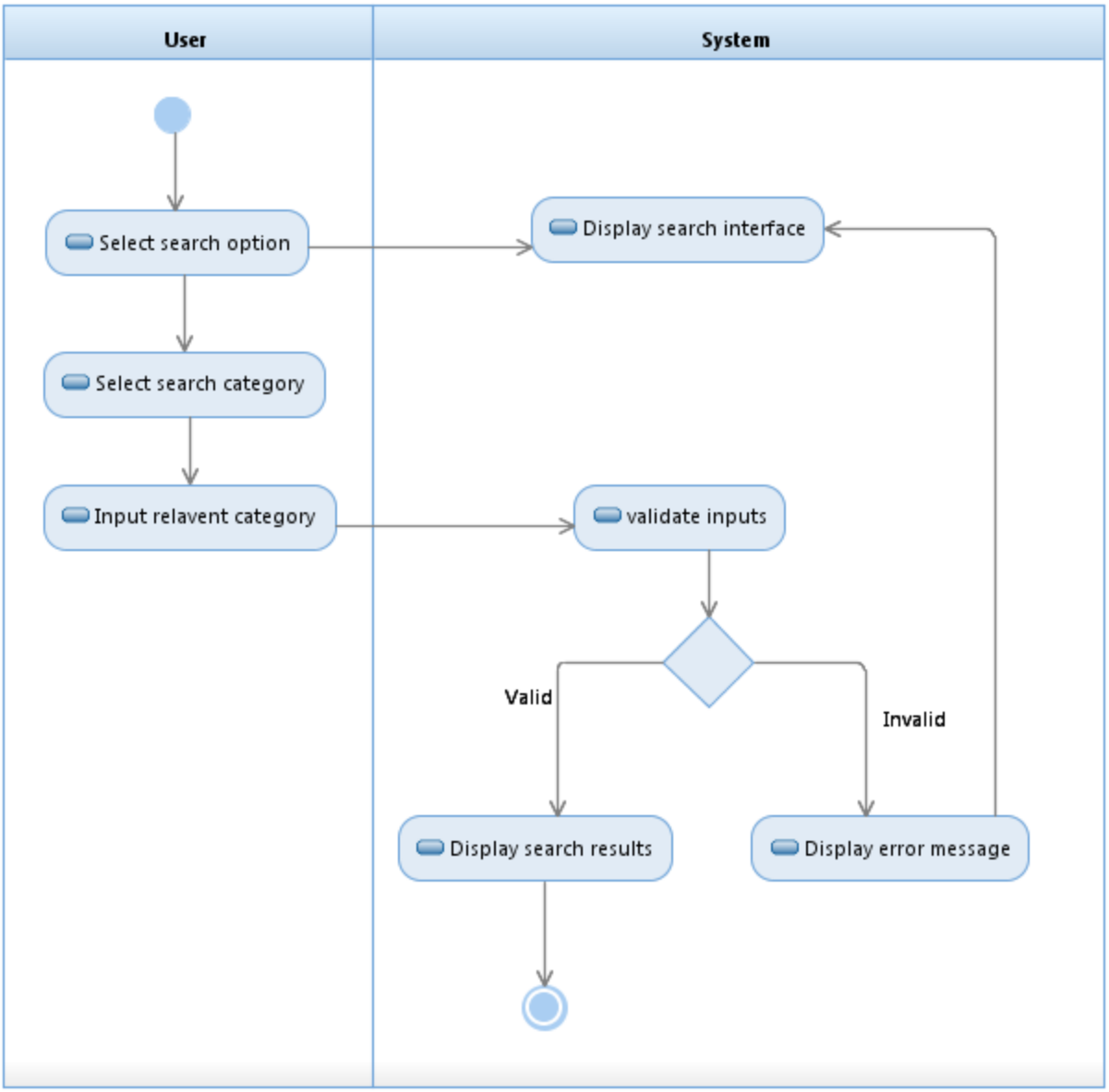
Make Reservation



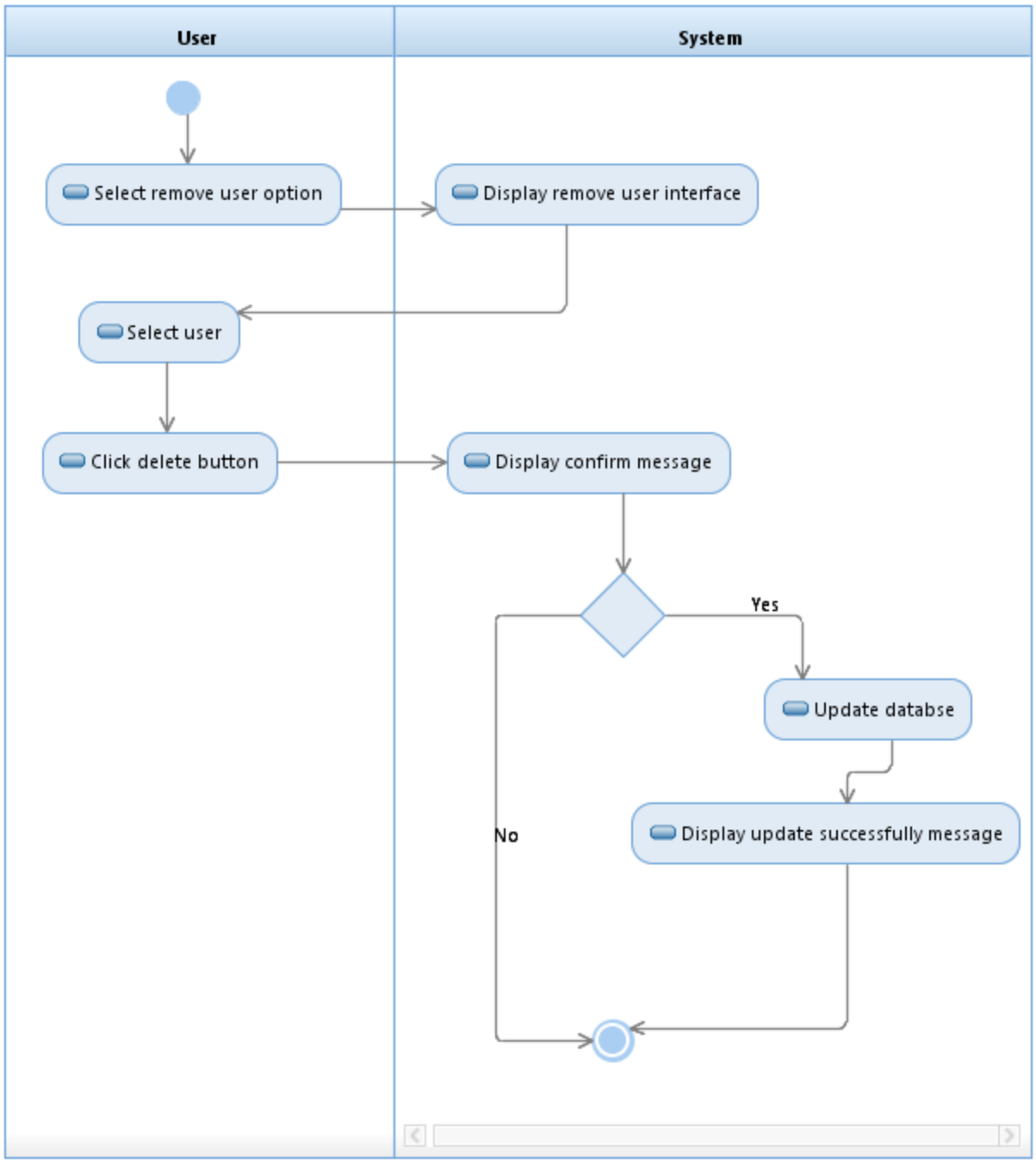
Take Backup


Owner
System
Select backup properties
Create backup
failed
successful
Display error message
Save backup

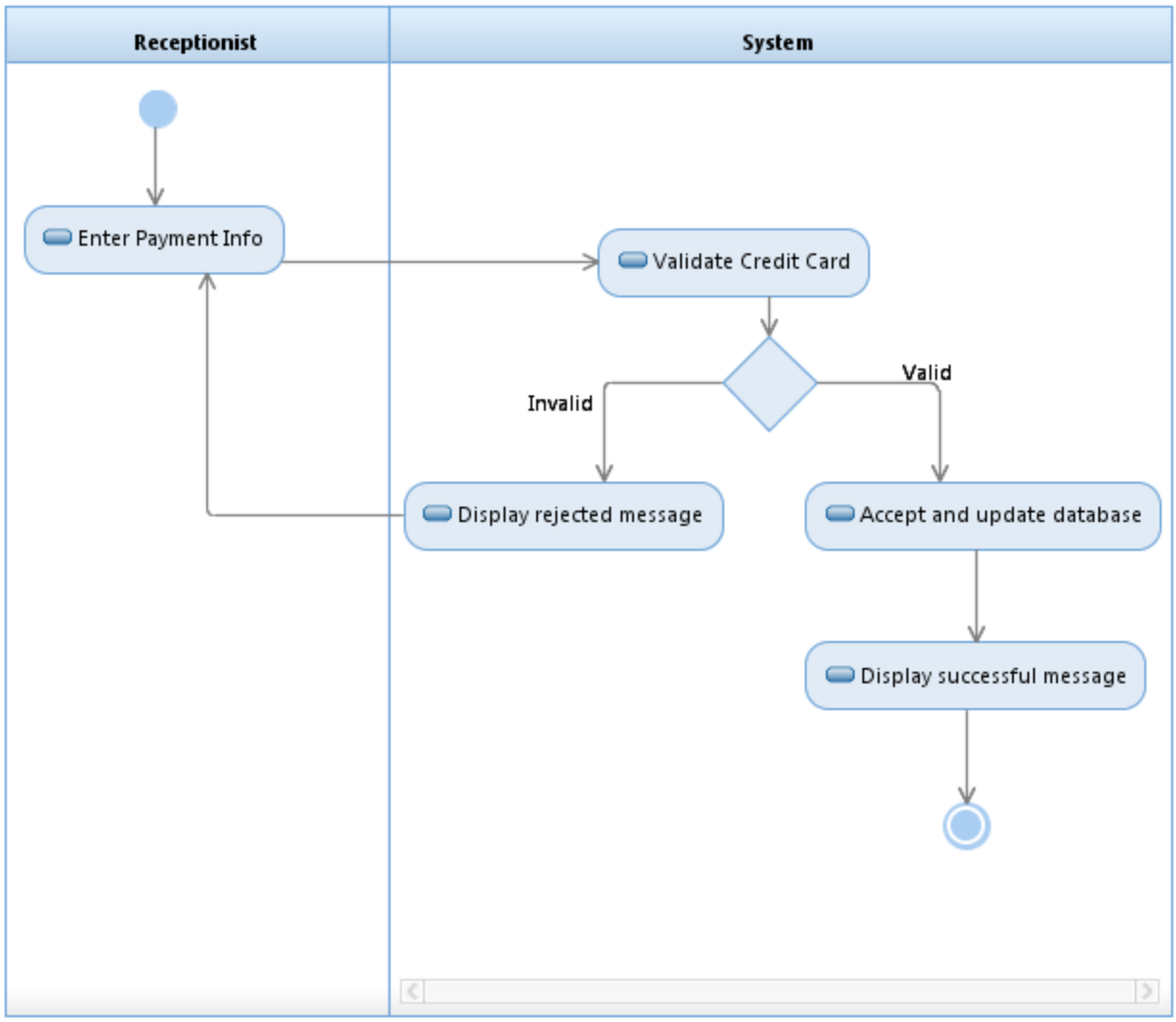
Search


User
System
Select search option
Display search interface
Select search category
Input relavent category
validate inputs
Valid
Invalid
Display search results
Display error message

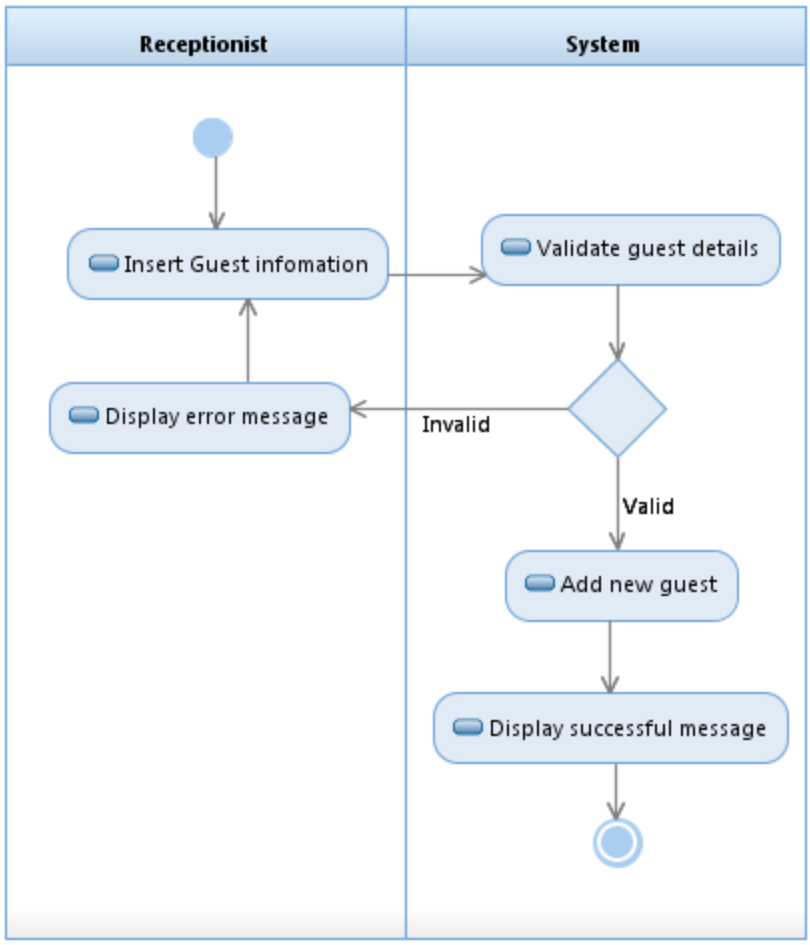
Delete a user



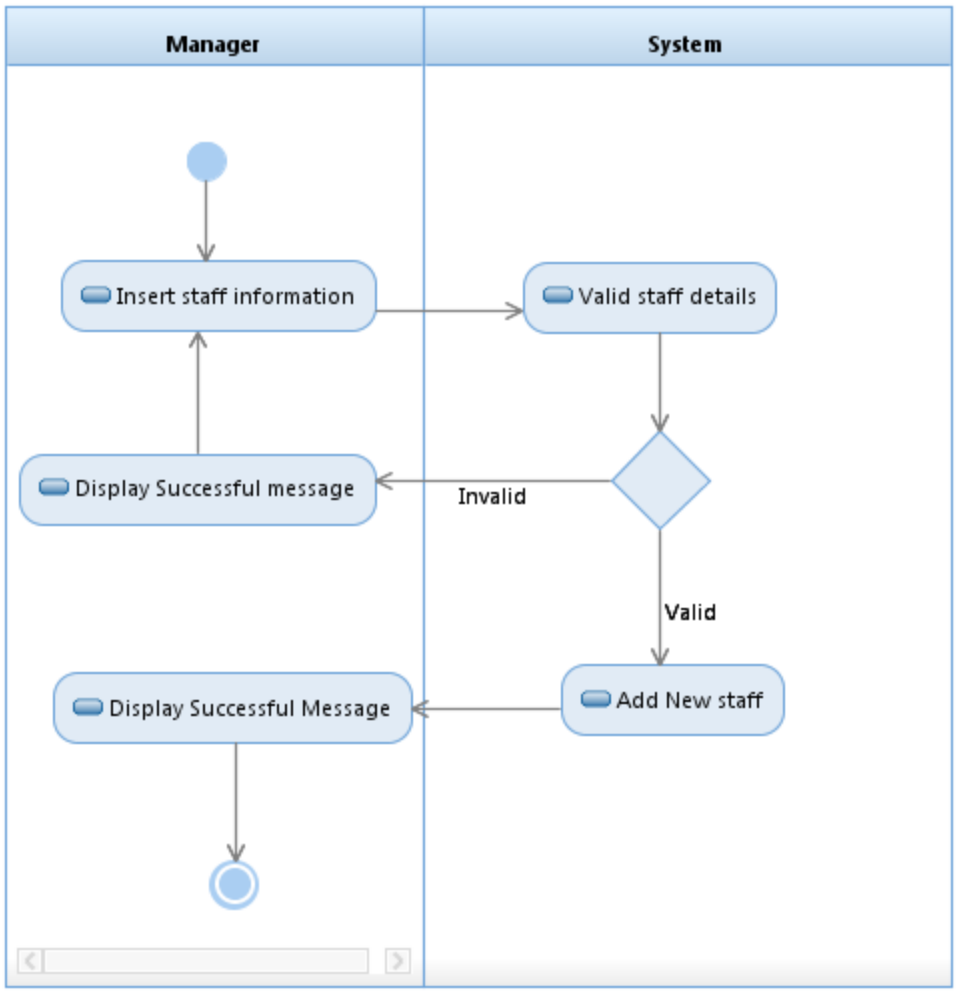
Add Payment


Receptionist
System
Enter Payment Info
Validate Credit Card
Invalid
Valid
Display rejected message
Accept and update database
Display successful message

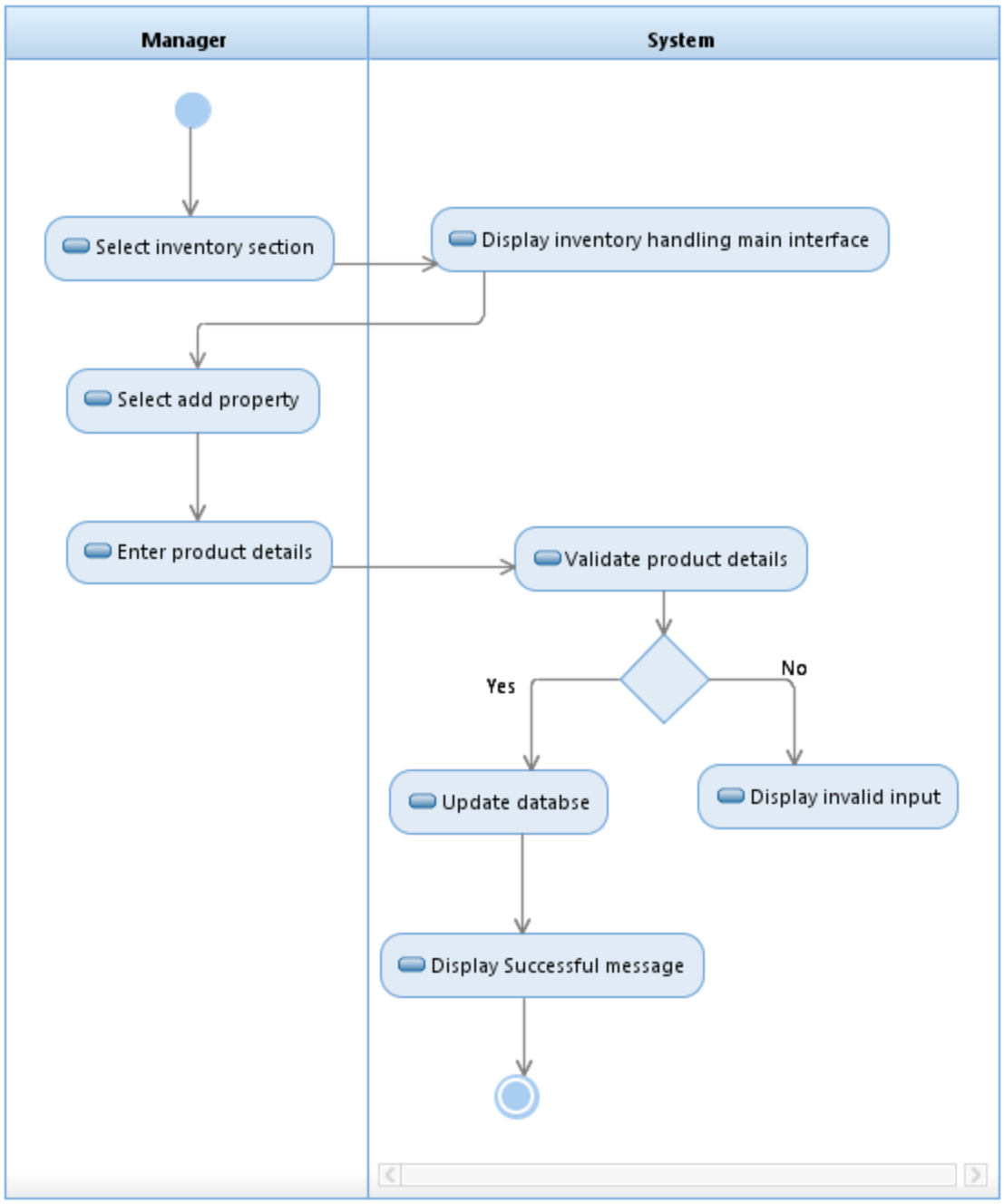
Add Guest


Receptionist
System
Insert Guest infomation
Validate guest details
Display error message
Invalid
Valid
Add new guest
Display successful message

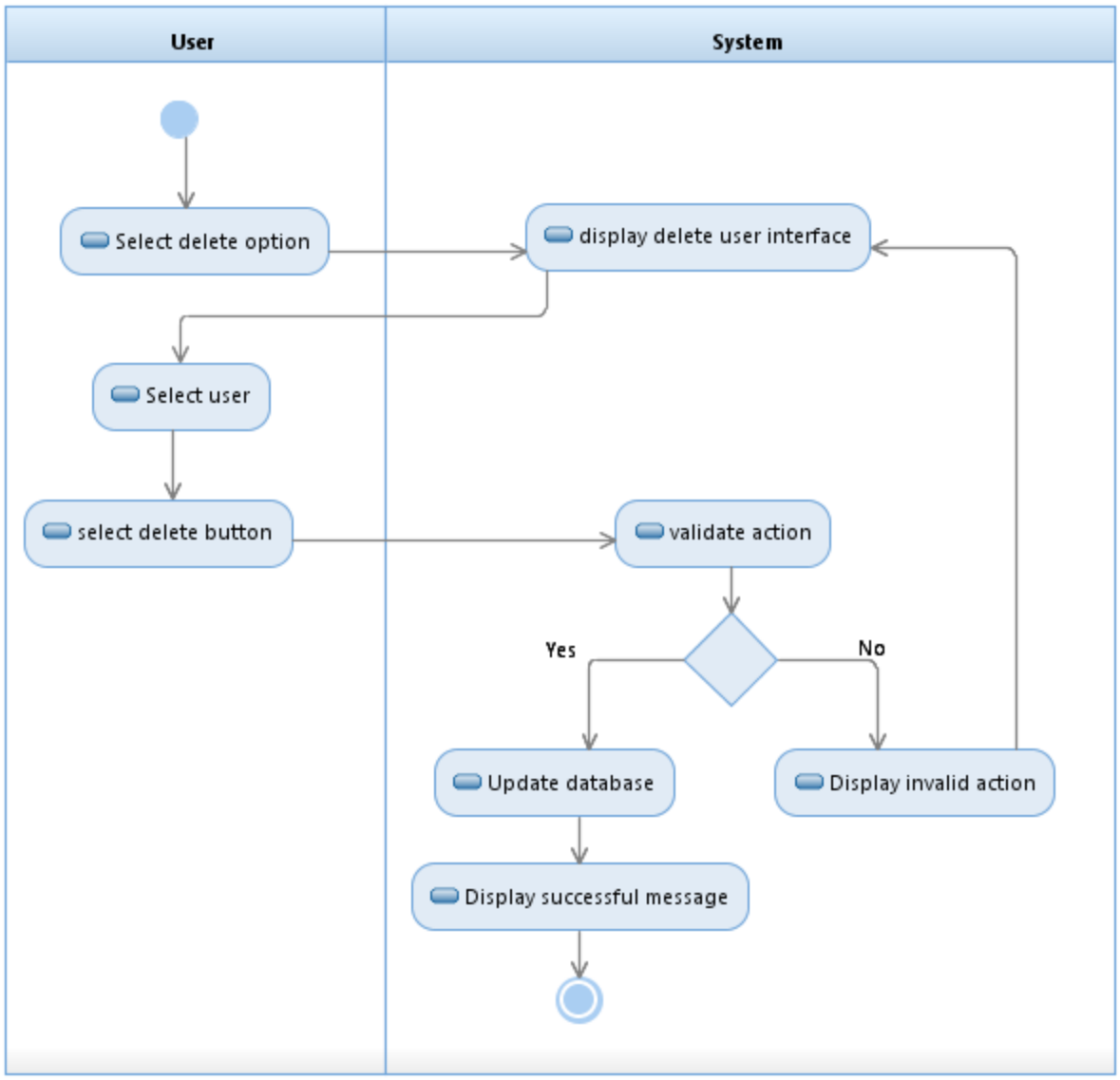
Add Staff


Manager
System
Insert staff information
Valid staff details
Display Successful message
Invalid
Valid
Display Successful Message
Add New staff

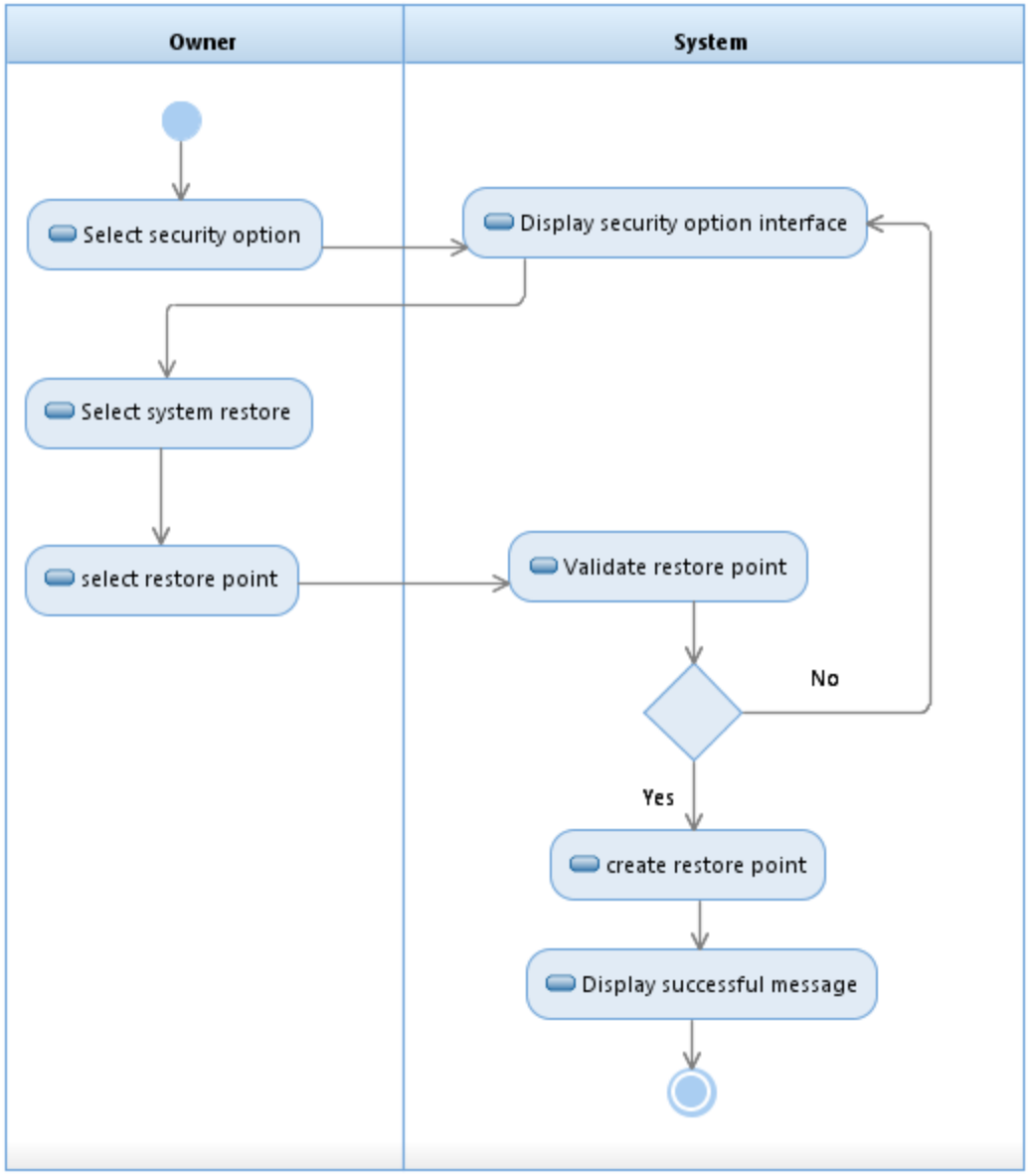
Add property



Delete user

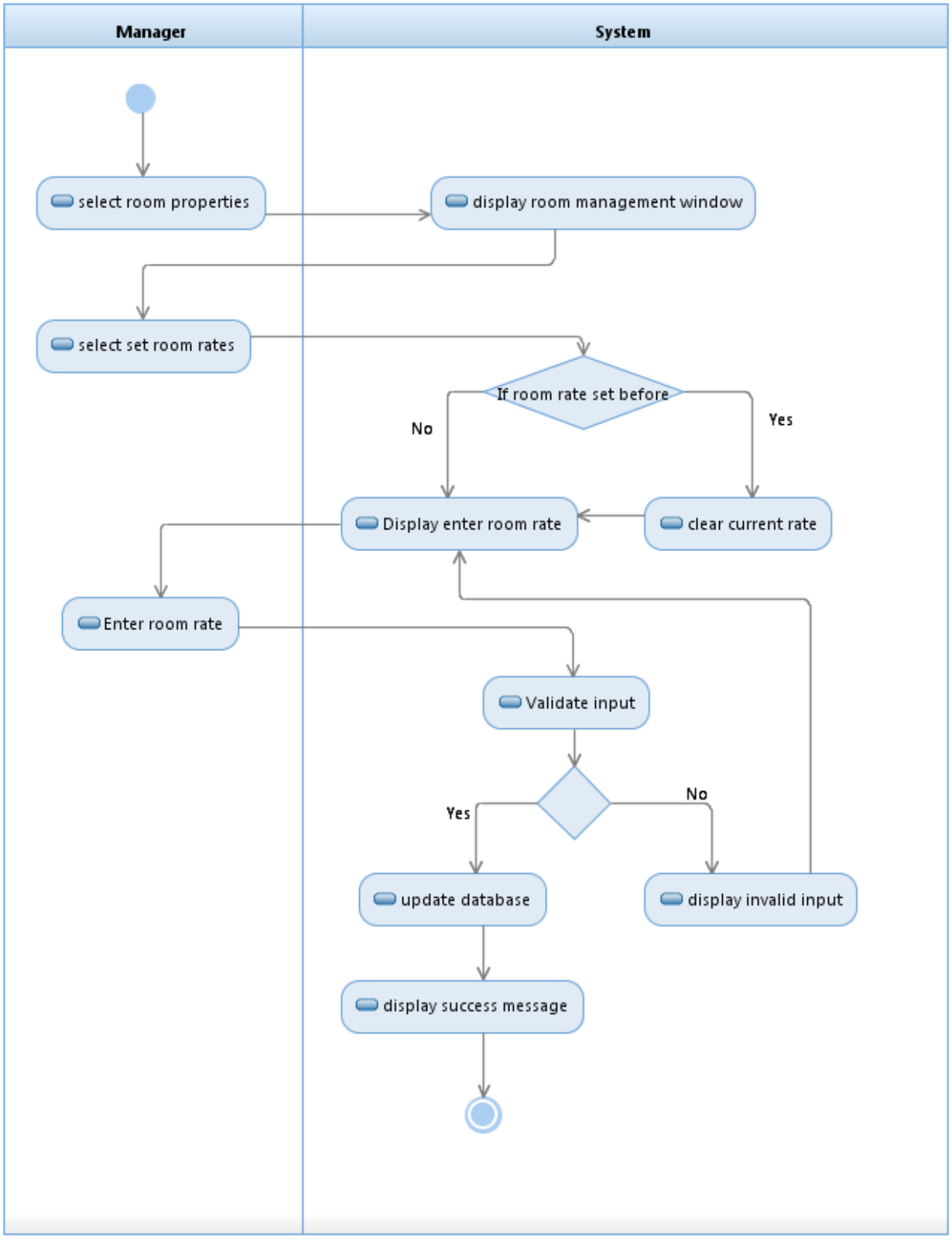

User
System
Select delete option
display delete user interface
Select user
select delete button
validate action
Yes
No
Update database
Display invalid action
Display successful message

Create system restore point

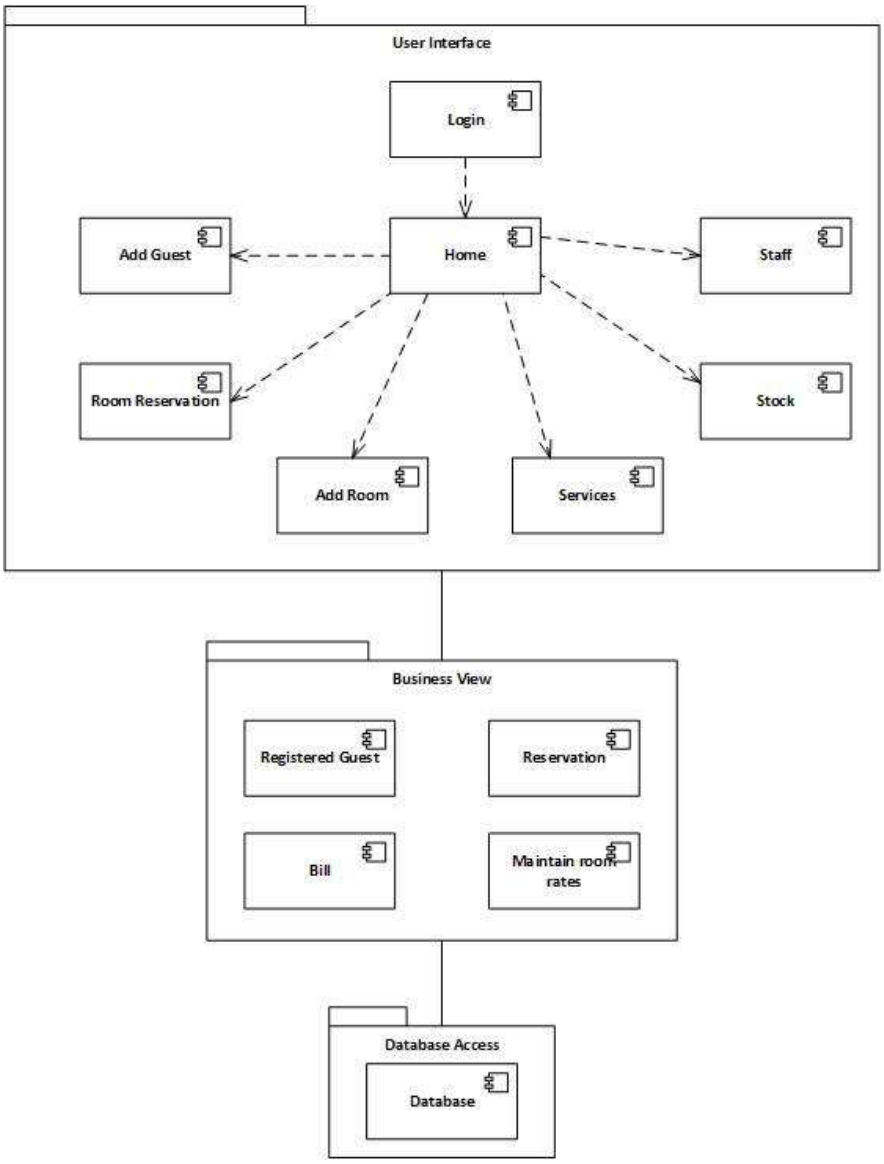


Hotel Management System

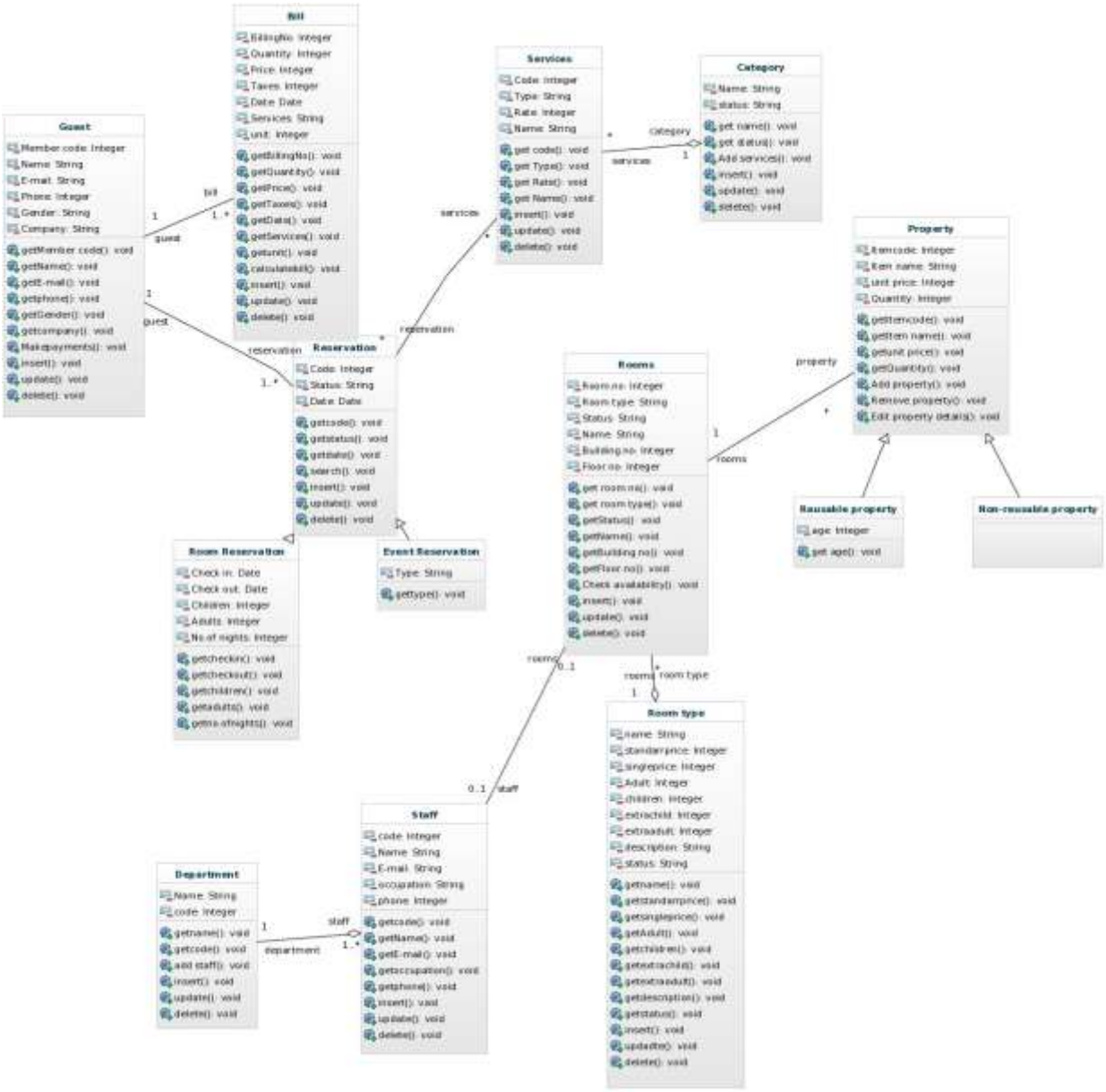
Set room rate



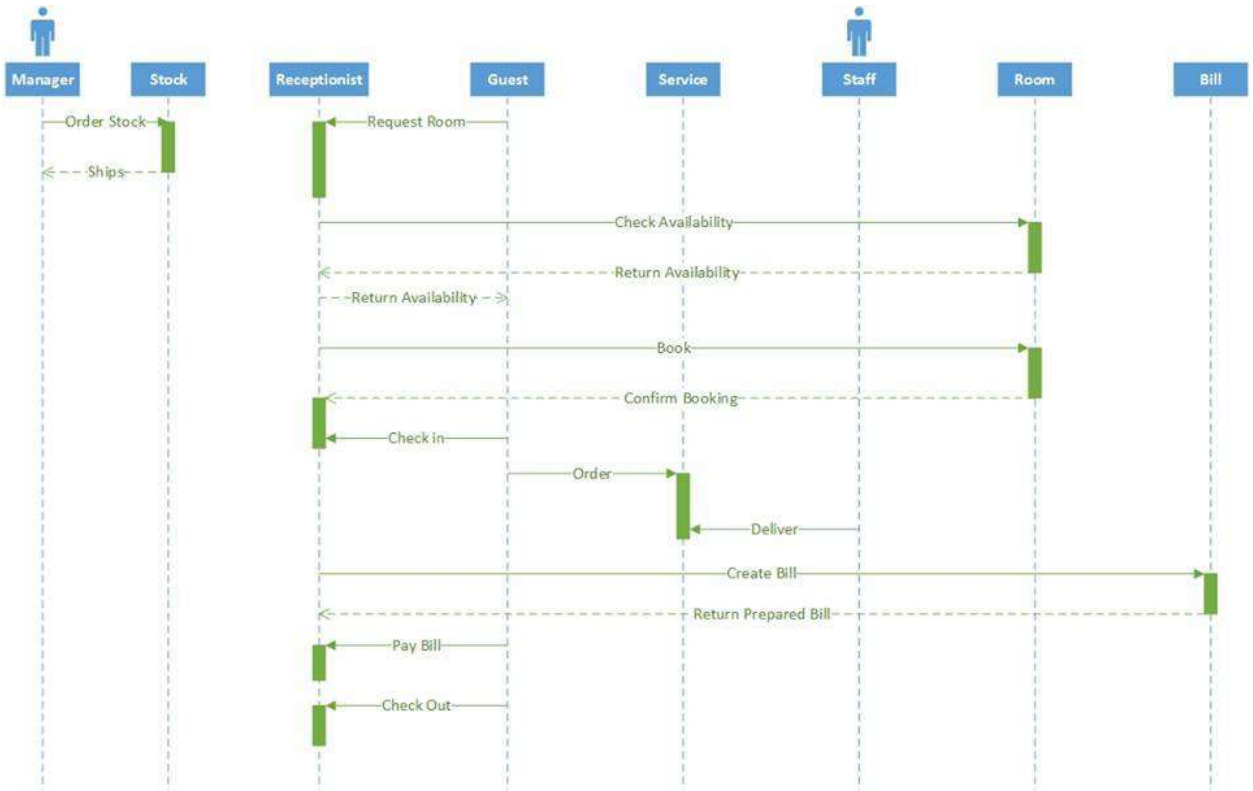
6-Component Diagram



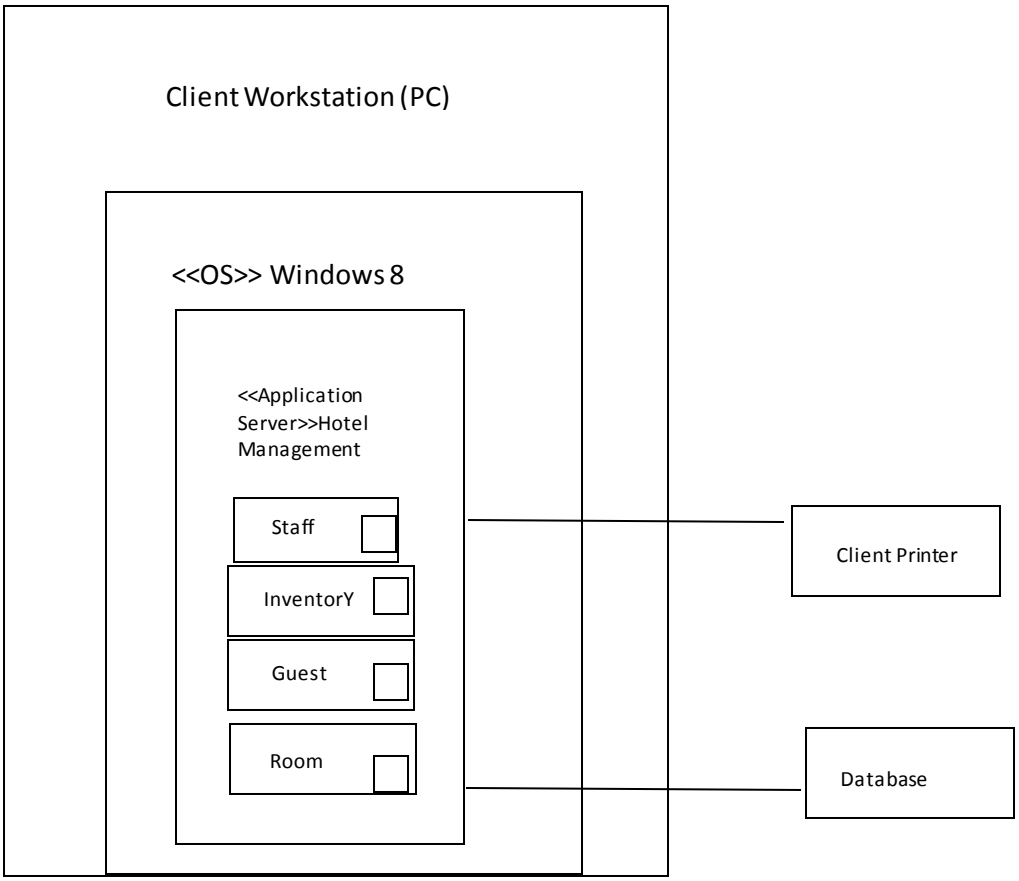
7-Class Diagram



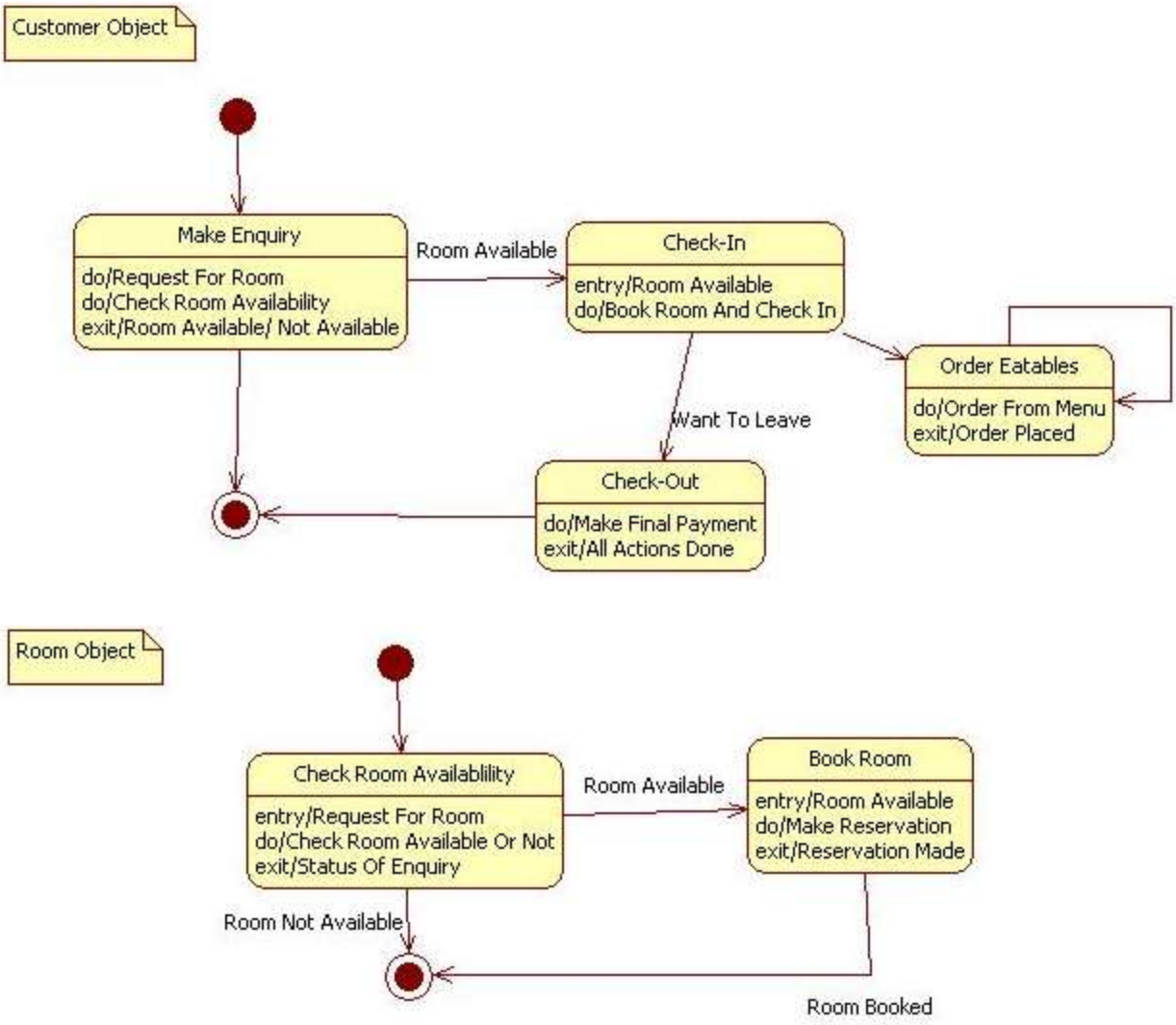
8-Sequence Diagram

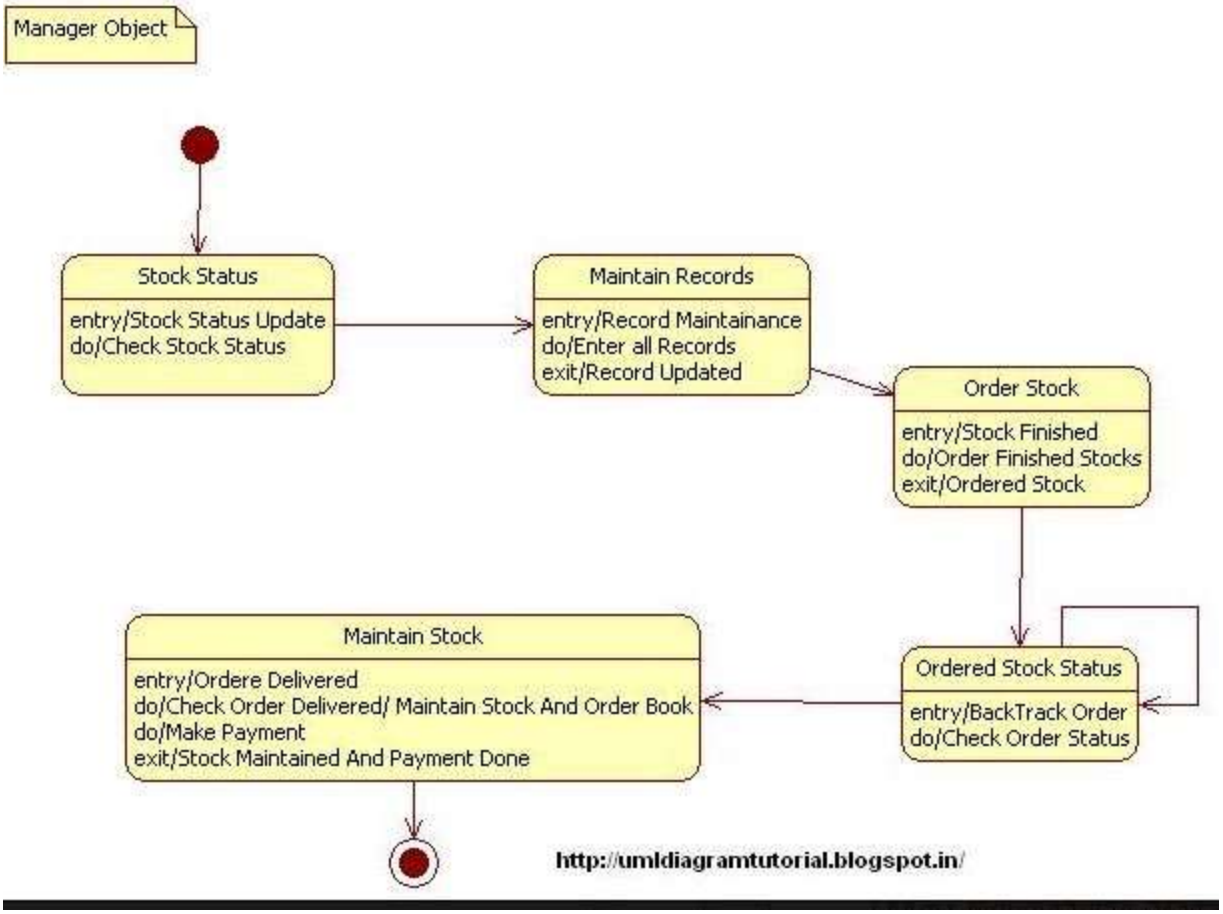


9-Deployment Diagram



10-STATE DIAGRAM




Manager Object
Stock Status
entry/Stock Status Update
do/Check Stock Status
Maintain Records
entry/Record Maintainance
do/Enter all Records
exit/Record Updated
Order Stock
entry/Stock Finished
do/Order Finished Stocks
exit/Ordered Stock
Ordered Stock Status
entry/BackTrack Order
do/Check Order Status
Maintain Stock
entry/Ordere Delivered
do/Check Order Delivered/ Maintain Stock And Order Book
do/Make Payment
exit/Stock Maintained And Payment Done
http://umldiagramtutorial.blogspot.in/

11- Communication Diagram/ Collaboration diagram