SOFTWARE ENGINEERING CASE STUDY
(B.TECH V SEMESTER)

HOTEL MANAGEMENT SYSTEM

Software Requirements Specification

UNDER THE GUIDANCE OF: **DR GIRDHARI SINGH**

DONE BY:

HARSH RAJIV GANDHI
2015UCP1011

CONTENTS

INTRODUCTION

The main goal of the automated Hotel Management System Software is to simplify every day process of hotel. Day to day Hotels are increasing and they need to automate to provide customer ease of access. It will be able to take care of services to customer in a quick manner. This automation will be able to replace the drawbacks of large customer information physical files which were difficult to handle. Secure Transaction, quick retrieval of information, ease of use, quick recovery of errors, fault tolerance are some of the benefits that development team will be working on to achieve end-user satisfaction.

Purpose

This **Hotel Management System Software Requirement Specification**'s (SRS) main objective is to provide a base for the foundation of the project. It gives a comprehensive view of how the system is supposed to work and what is to be expected by the end users. Client's expectation and requirements are analyzed to produce specific unambiguous functional and non-functional requirements, so they can be used by development team with clear understanding to build a system as per end user needs.

This SRS for HMS can also be used for future as basis for detailed understanding on how project was started. It provides a blueprint for upcoming new developers and maintenance teams to assist in maintaining and modifying this project as per required changeability.

Scope of Project

The HMS project is intended for the reservations for room that can be made online. It will be able to automate the various operations of the Hotel. This Hotel Management System will have **three end users**: **Customer**, **Receptionist**, and **Hotel Manager**.

Hotel Management System will consists of Booking Management System, DBMS Server, and Report Generator. Customers will be able to check for room's availability, select the rooms, and pay for the room. Receptionist will have access to update or modify booking details. Manager will able to view the financial report and able to update room information such as cost and category.

Definitions, Acronyms and Abbreviations

SRS	Software Requirement Specifications
HMS	Hotel Management System
DBMS	Database Management System
Blueprint	A design technical plan
JDBC	Java Database Connectivity
HTTP/HTTPS	Hyper Text Transfer Protocol/Secure
EJB	Enterprise Java Beans
API	Application Interface
OS	Operating System
JSP	Java Server Pages
FR	Functional Requirement
NFR	Non Functional Requirement

Table 1 - Definitions, Acronyms & Abbreviations

References

1. Creately
2. Concept Draw
3. Tutorials Point
4. Slide Share
5. Quora
6. Database Systems – Elmasri Navathe
7. Software Engineering – Pressman

Overview

The remaining sections of this documentations describes the overall descriptions which includes product perspective and functions, characteristics of users. It also consists of Assumptions, and Constraints. Overall description is listed in section 2. Section 3 includes Specific Requirements which consists of Functional and Non-functional requirements, External Interface Requirements, Software System Attributes, Performance Requirements, Capacity Requirements, Availability Requirements and Safety Requirements etc.

OVERALL DESCRIPTION

Product Perspective

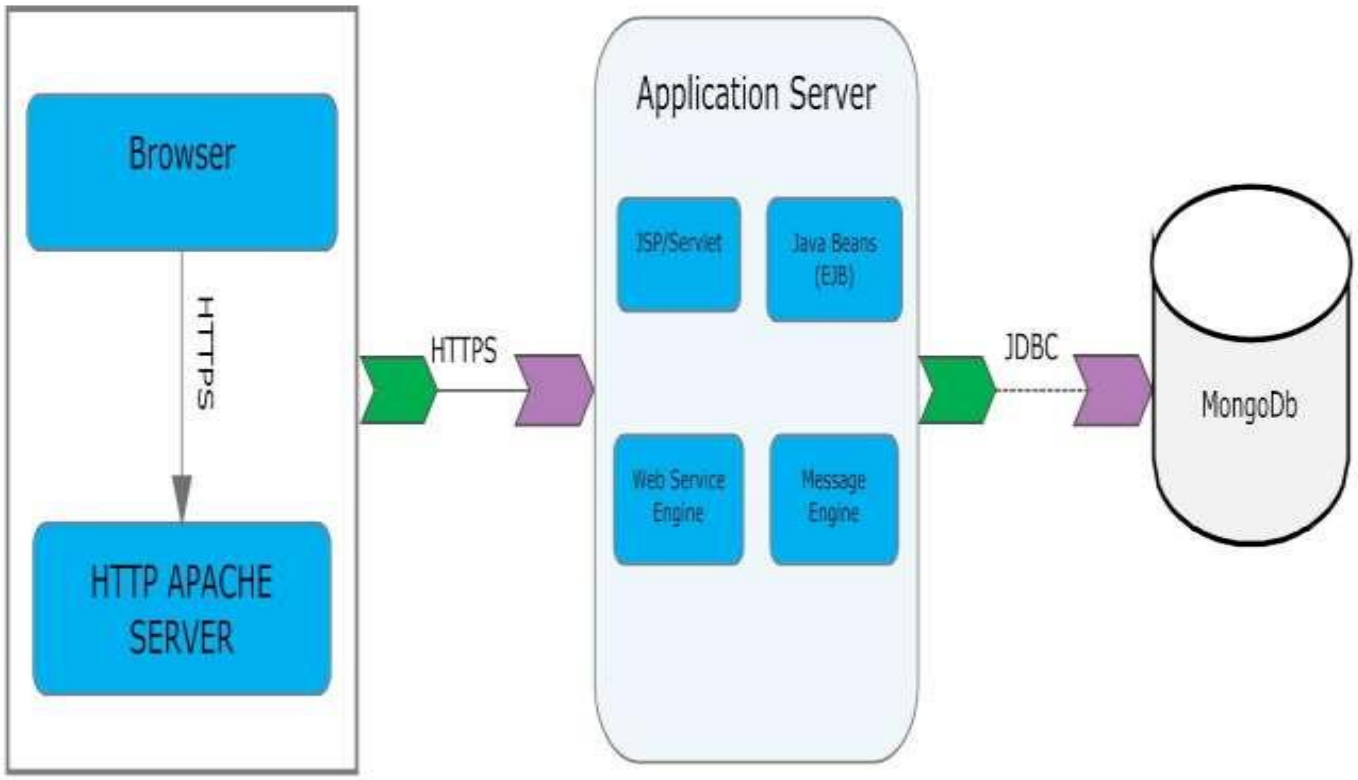

Figure 1 - Product Perspective

Product Functions

Some of the general functions of the HMS include the following:

1. Customer Registration and Allotment of preferred Room
2. Price Display and Confirm Booking on Customer Agreement
3. Email Notification on Payment
4. Manage Booking Details and Room Status
5. Report on Checkout
6. Customer Feedback

User Characteristics

1. Hotel Manager

Manager has super access to everything the hotel management system. Manager is solely responsible for managing hotel resources and staffs. Manager can view any report such as financial report, customer information, booking information, and room information, analyse them and take the decision accordingly. Manger is required to have experience on managing hotel previously, and have basic knowledge of database and application server.

2. Receptionist

Hotel Receptionist's sole purpose is to provide a quality customer service. She has lesser access to the system than the manager. She can manage the booking details. She can search for availability of rooms, add the customer, confirm the booking, and update the booking details. Manager of hotel would probably want the receptionist who have good communication skills and command over English language. She should have basic IT Knowledge.

3. Customer/Visitor

Customers are vital part of the system. Customers have access to view the vacant room information and price rate. They should be able to confirm the booking and cancel it if necessary. Customers have access to customer service desk portal to forward their inquiry. Customer should at least be capable to use the web UI interface.

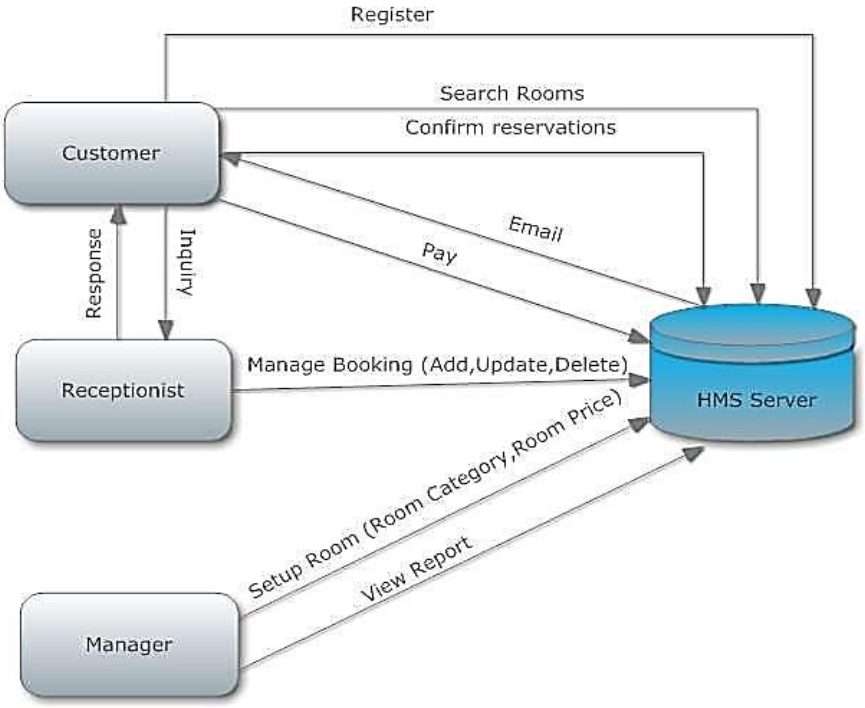

Figure 2 – System Architecture

Constraints

1. **Memory:** System will have only 10GB space of data server.
2. **Language Requirement:** Software must be only in English.
3. **Budget Constraint:** Due to limited budget, HMS is intended to be very simple and just to perform basic functionalities. UI is going to be very simple.
4. **Implementation Constraint:** Application should be based on PHP, JavaScript, Java and CSS.
5. **Reliability Requirements:** System should sync frequently to backup server in order to avoid the data loss during failure, so it can be recovered.

Assumptions and Dependencies

It is assumed that system developed will work perfectly if all the listed requirements are met.

SPECIFIC REQUIREMENTS

A. External Interfaces Requirements

1. User Interfaces

The user interface for system shall be compatible with any type of web browser such as Mozilla Firefox, Google Chrome, and Internet Explorer.

2. Software Interfaces (OS – Windows)

Web Server: Apache Tomcat Server

Database Server: Mongo DB

Development End: Java, JSP Servlet, HTML, XML, CSS, JavaScript

3. Hardware Interfaces

Server Side			
Monitor	**Processor**	**RAM**	**Disk Space**
1024x768	Intel or AMD 2GHZ	4GB	10GB
Client Side			
Monitor	**Processor**	**RAM**	**Disk Space**
1024x768	Intel or AMD 1GHZ	512MB	2GB

Table 2 – Hardware Interfaces

4. Communication Interfaces

The System shall be using **HTTP/HTTPS** for communication over Internet and for intranet communications, it shall use TCP/IP protocol.

B. Functional Requirements

1. Registration

FR1. The Customer should be able to register with their details

FR2. The system should record the basic details like Name, Email, Password, DOB etc. of the customer into the database.

FR3. The system shall send verification message to email.

2. Login

FR4. The system should verify the customer's email and password against the values stored in the database.

FR5. After login, customer should be redirected to the Home Page.

3. Reservation

FR6. The system should enable customer to check for availability of rooms.

FR7. The system should display rate for all the rooms.

FR8. The system should allow the customer to confirm or cancel the booking.

FR9. The system should record booking details into database.

4. Receptionist Access

FR10. The system should allow Receptionist to update, add or delete booking information.

FR11. The system should provide the customer desk portal to receptionist for providing response to customer query.

5. Admin Access

FR12. The system should generate financial and customer report for manager

FR13. The system should enable full access to manager.

6. Payment Management System

FR14. The system should allow customer to pay bill via online using credit or debit card.

C. Performance Requirements

NF1. Data in database should be updated within 2 seconds.

NF2. Query results must return results within 5 seconds.

NF3. Load time of UI should not take more than 2 seconds.

NF4. Login Validation should be done within 3 seconds.

NF5. Response to customer inquiry must be done within 5 minutes.

D. Security Requirements

NF6. All external communications between the data's server and client must be encrypted.

NF7. All data must be stored, protected or protectively marked.

NF8. Payment Process should use HTTP over Secure protocol to secure the payment transactions.

E. Safety Requirements

NF9. Database should be backed up every hour.

NF10. Under failure, system should be able to come back at normal operation under an hour.

F. Capacity Requirements

NF11. Not more than 10,000 members to be registered.

NF12. System needs to handle at least 20 transactions during peak hours.

G. Availability Requirements

NF13. Report should be generated automatically every day for manager and anytime upon request.

H. Software System Attributes

- **Correctness**: This system should satisfy the normal Hotel Management operations precisely to fulfil the end user objectives.
- **Efficiency:** Enough resources to be implemented to achieve the particular task efficiently without any hassle.
- **Flexibility**: System should be flexible enough to provide space to add new features and to handle them conveniently.
- **Integrity:** System should focus on securing the customer information and avoid data losses as much as possible.
- **Portability:** The system should run on any Windows environment.
- **Usability:** The system should provide user manual at every level.
- **Testability:** The system should be able to be tested to confirm the performance and clients specifications.
- **Maintainability:** The system should be maintainable.

APPENDICES

Data Flow Diagram

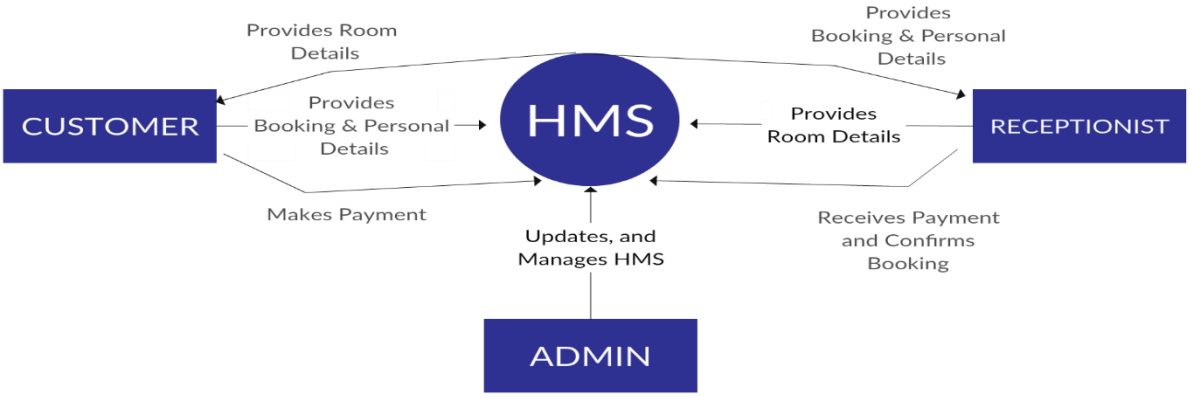

Figure 3 – DFD Level 0

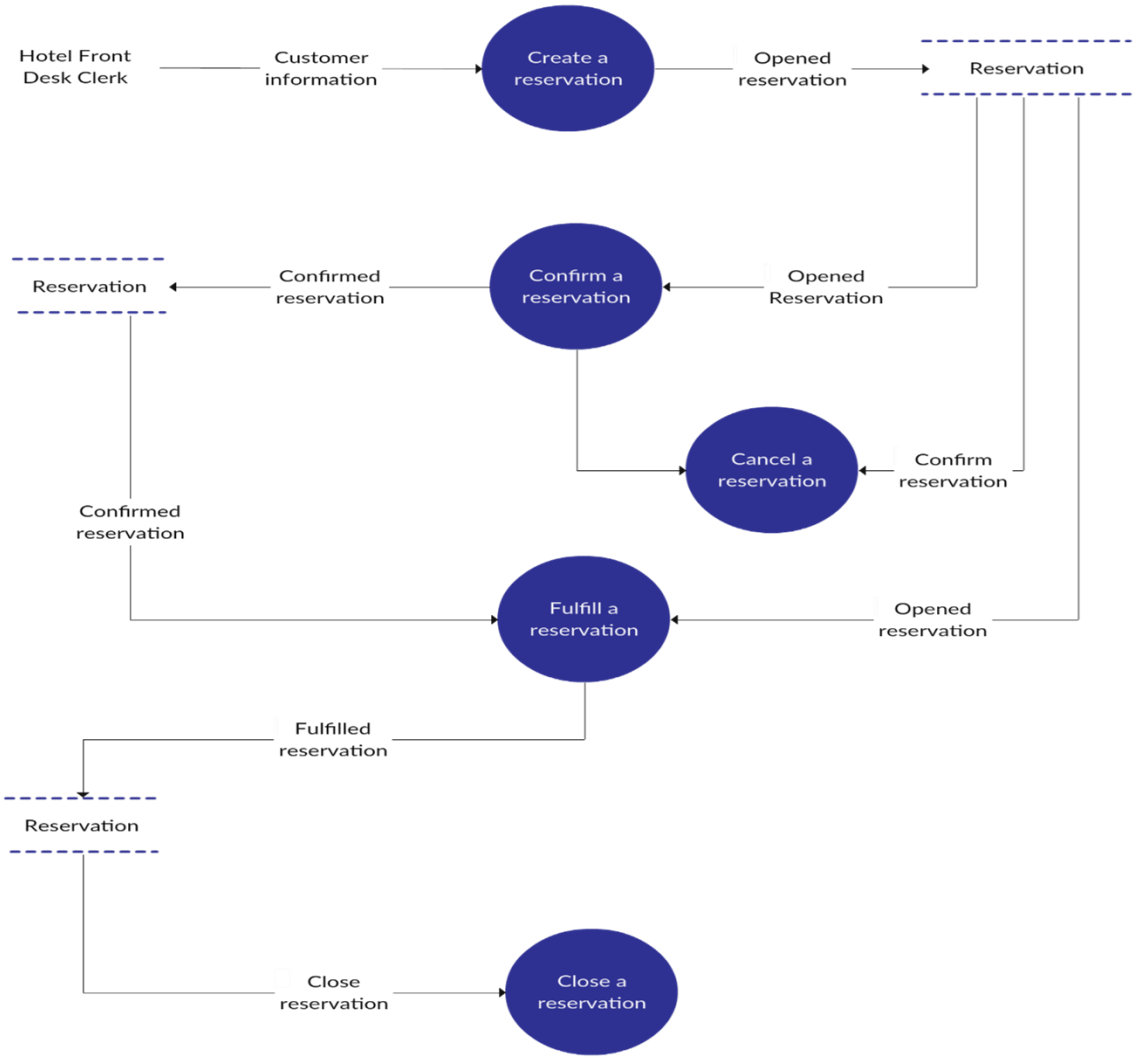

Figure 4 – DFD Level 1

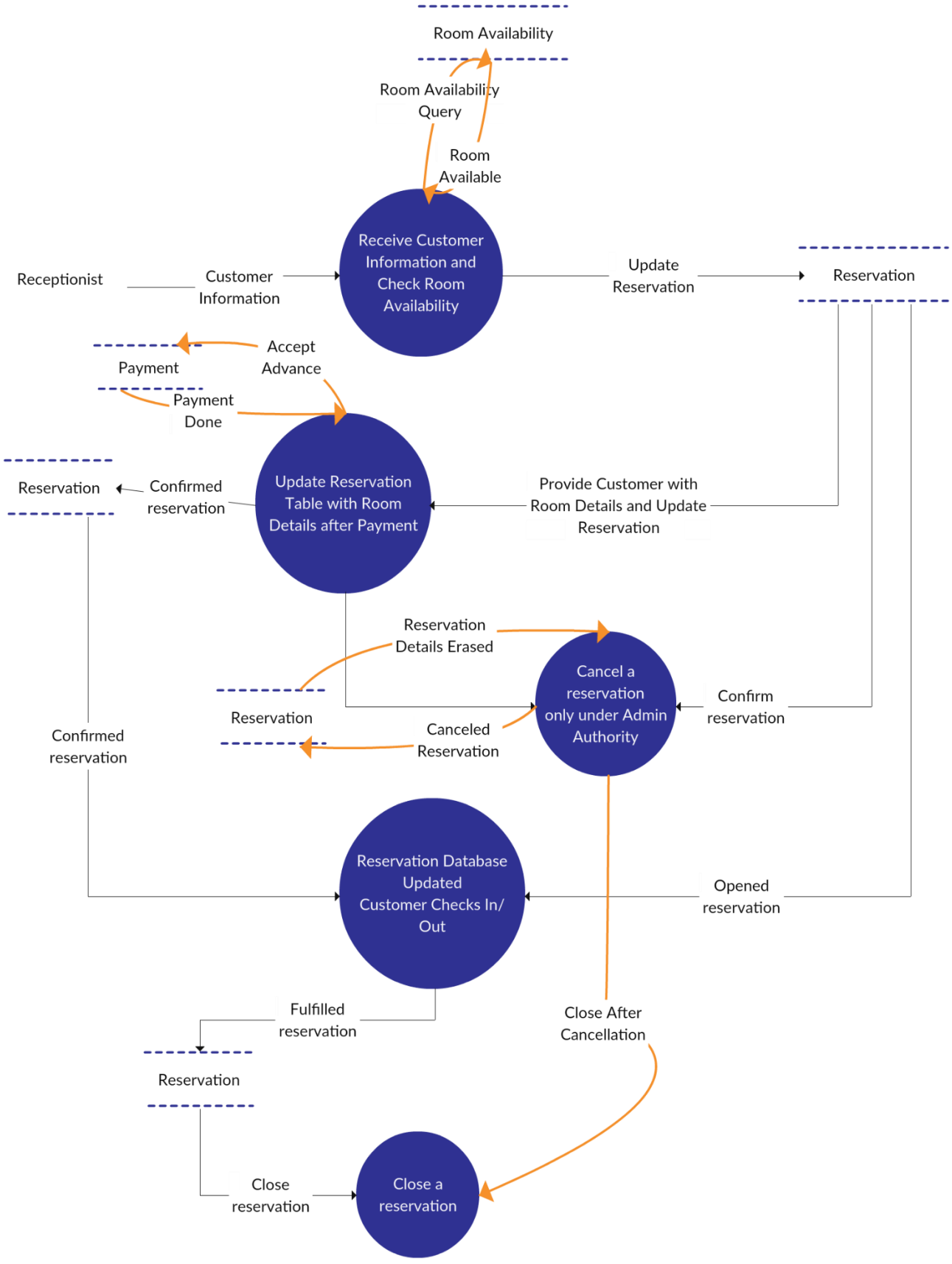

Figure 5 – DFD Level 2

Entity Relationship Diagram

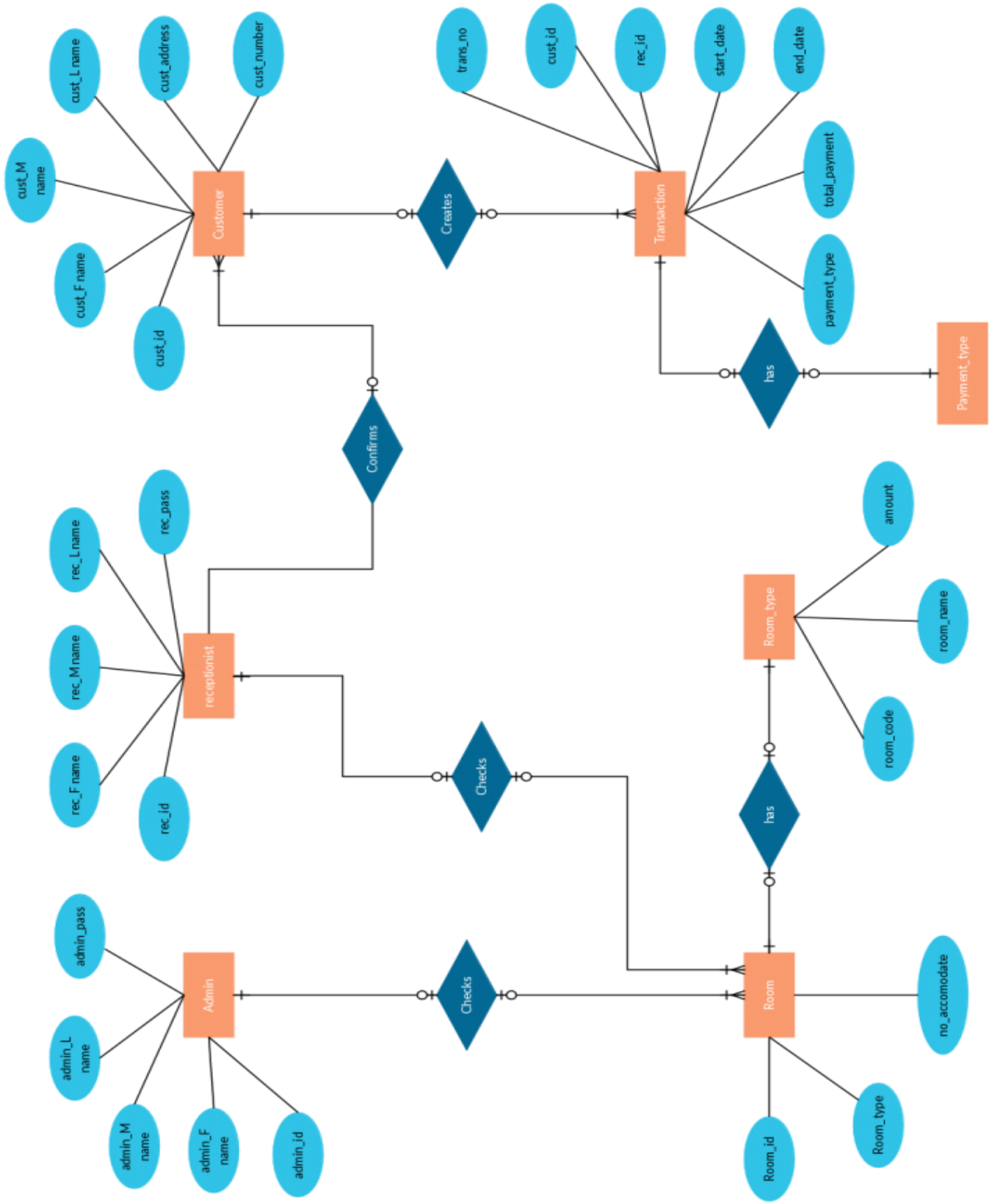

Figure 6

Sequence Diagram

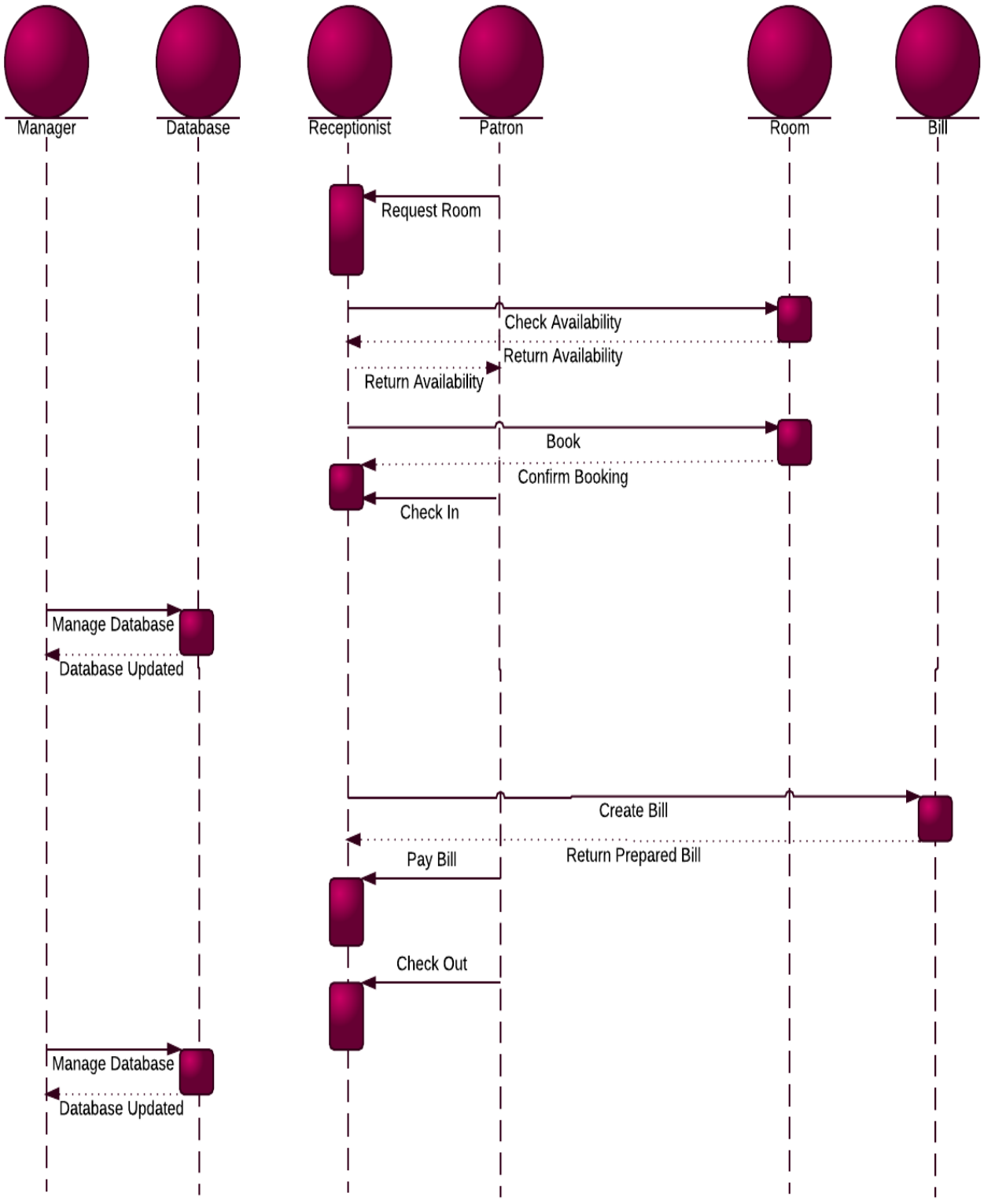

Figure 7

Use Case Diagram

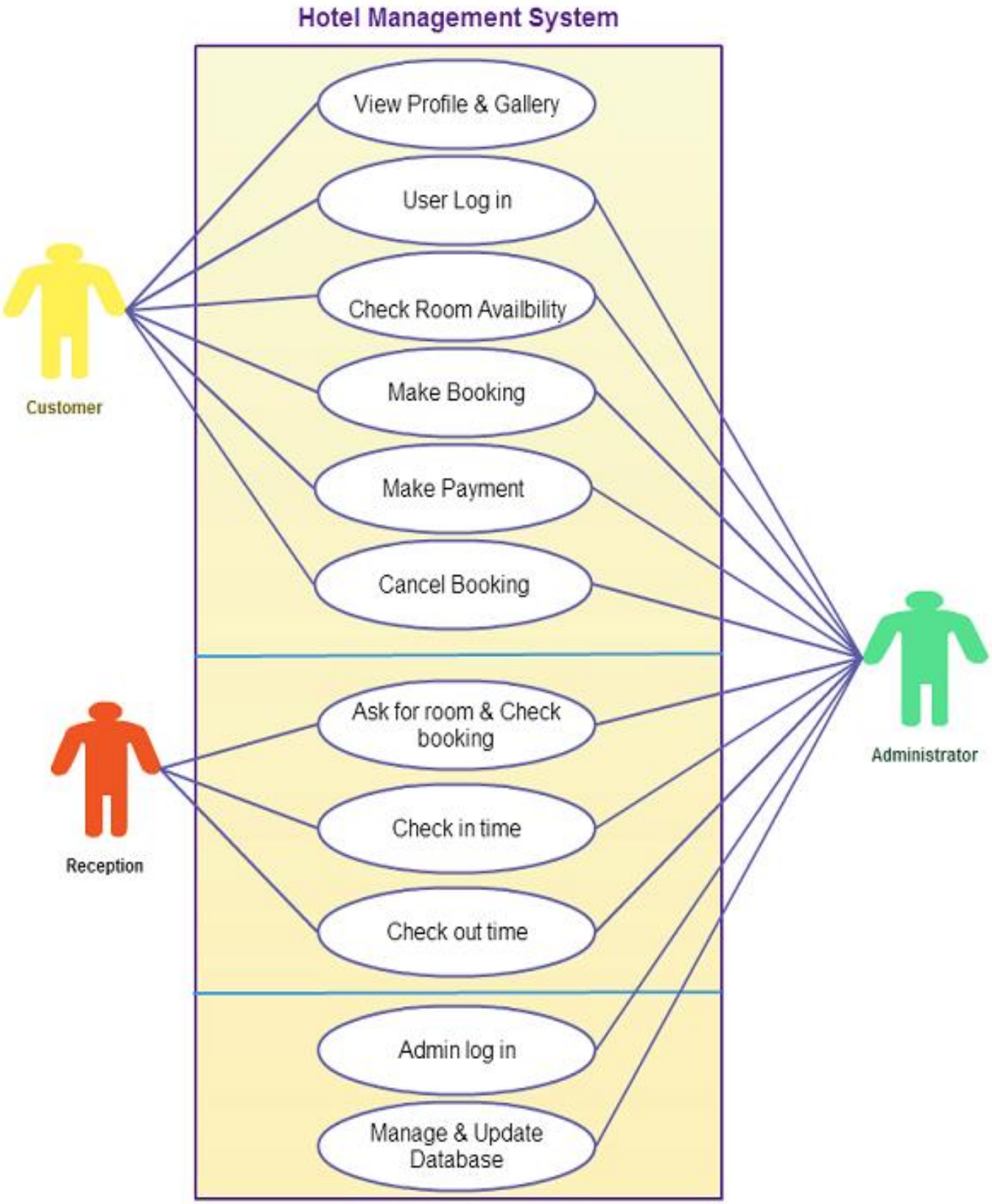

Figure 8

Class Diagram

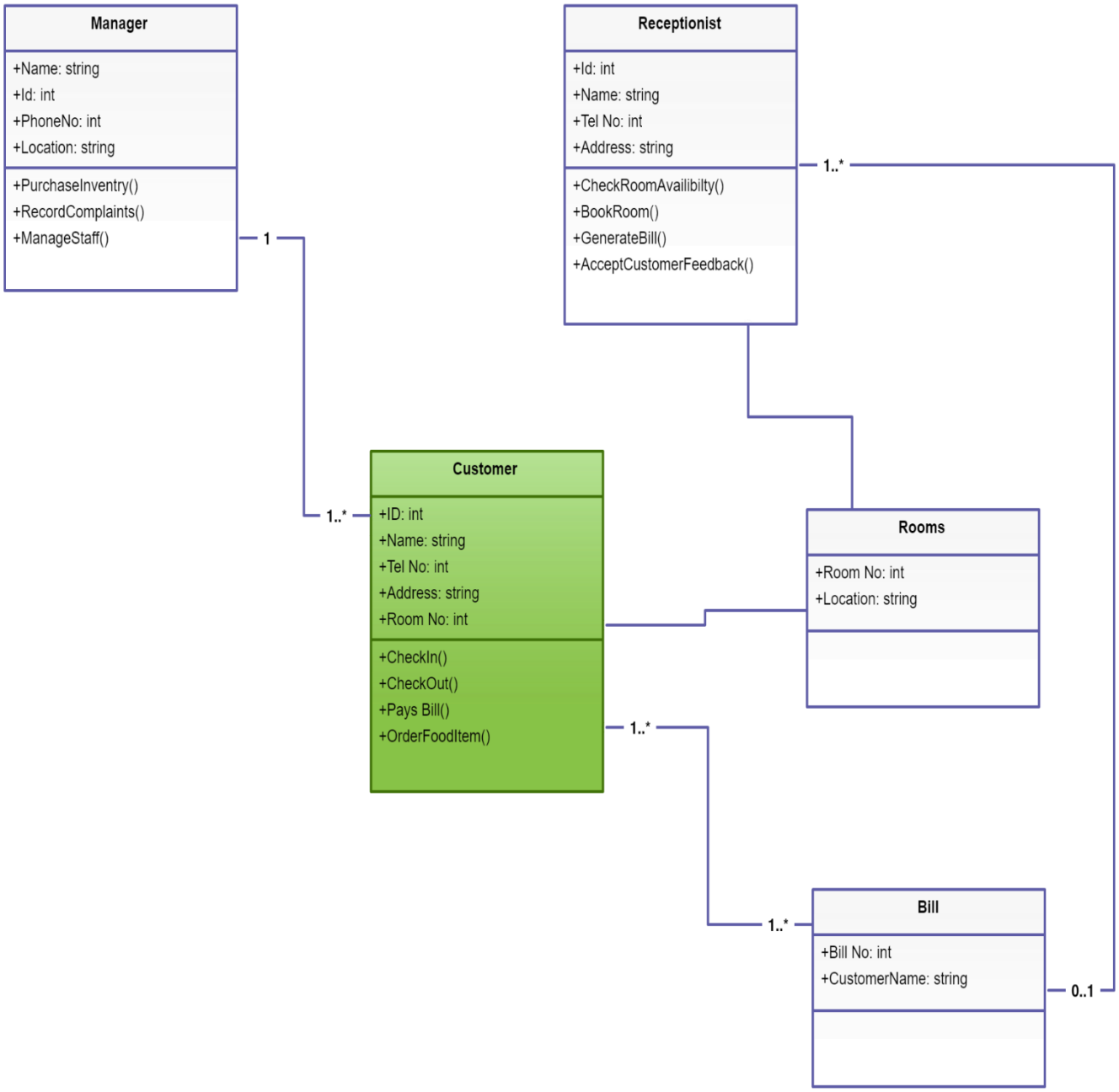

Figure 9

Activity Diagram

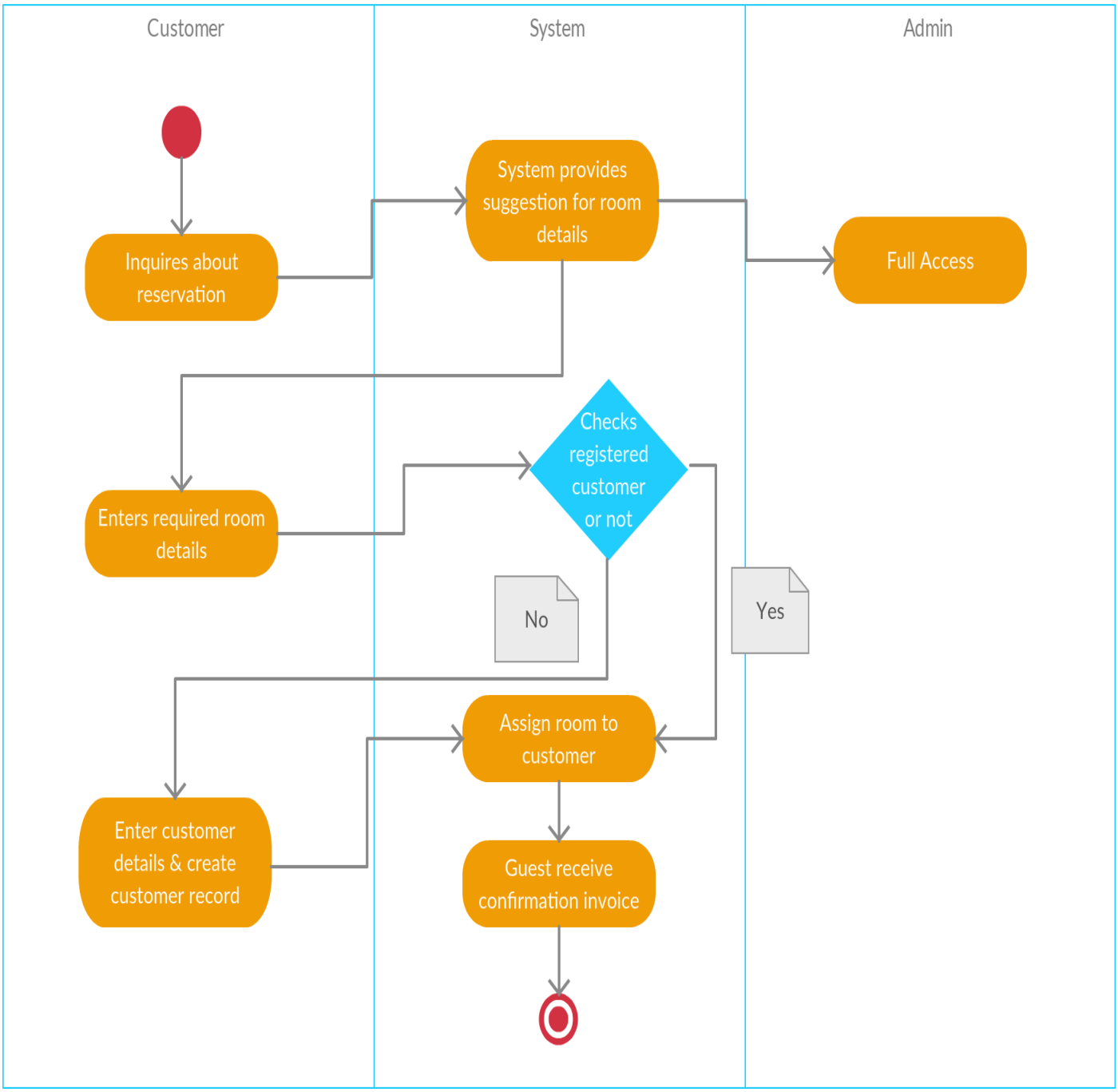

Figure 10