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# Software Requirements Specification

for

## VECC Guest House Project

Prepared by

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**Date:** 13/07/18

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# 1 Introduction

*The project described within this document is a GUEST HOUSE module which is a part of VECC Employee Database Application(VEDA). The goal of designing this module is to reduce the manual paper work of the guest house which is hectic and hard to manage. A completely computerized system is developed in this project to automate the Guest House Management System.*

*Any VEDA user will be able to raise a request to book rooms in guest house and admin will accept the request and book rooms depending upon the room availability criteria. If booking is confirmed then system will automatically send confirmation mail containing details to the requester. After arrival of the guests, there will be some status checking for allowing the guest to the VECC premises and CEP will be generated and given to the guests at the security. Then the check in time will be recorded at the guest house.*

*At the time of their departure, the bills will be generated through this system and check out time will be recorded by the guest house staffs. At the security, the status will be checked again. If the payment is done then the security staffs will collect the CEP and then the guest will be allowed to leave the VECC premises.*

## 1.1 Document Purpose

*This document covers all the details about the module GUEST HOUSE and how this module works, the flow of the system is described. It makes understanding the module and its functionalities a lot easier for the client.*

## 1.2 Product Scope

- *This module will be used by the VEDA users to book room in the guest house.*
- *It will reduce the manual work and automate the total procedure of booking the room till leaving the guest house.*
- *This module will be able to generate different reports and query results.*
- *After generating the request, requester must send it to the head for approval. Without this, requester won't be able to send it to the admin. This makes sure that the higher authority is known to the request that you have generated.*
- *The admin himself also can generate a request on behalf of a user. In that case, it will be sent to the user for approval to make sure all the information is correct.*

## 1.3 Intended Audience and Document Overview

*This module will be used as a part of VEDA which will automate the guest house booking which is done manually now. It is mainly developed for the guest house management team. Any VEDA user can go to the site and generate request. No manual effort is required by the guest house*

*management. There will be 4 types of basic users such as admin, requester, security and guest house.*

## **1.4 Definitions, Acronyms and Abbreviations**

- DFD-> Data Flow Diagram
- ER-> Entity Relationship.
- UML-> Unified Modeling Language
- IDE-> Integrated Development Environment
- SRS-> Software Requirement Specification

## **1.5 Document Conventions**

*This document follows the IEEE formatting requirements. Use Arial font size 11, or 12 throughout the document for text. Use italics for comments. Document text should be single spaced and maintain the 1" margins found in this template. For Section and Subsection titles please follow the template.*

## 2 Overall Description

### 2.1 Product Perspective

*This Guest House module is a web application which is a part of the VEDA. The main goal is to automate the guest house booking and billing system. No module has been developed yet previously, this is the first version of this module. We can access this module from VEDA. It will take care of every work done in the guest house and we have to update this accordingly.*

### 2.2 Product Functionality

*The major functionalities are listed below:*

- *Generates a form where the requester will fill the details and request for room.*
- *Approval from the employee hierarchy is maintained.*
- *Requester will receive mail if booking is confirmed.*
- *Security will check the status of the booking for allowing the guest to enter and generates CEP.*
- *Guest house will reallocate the room if requested depending upon the room availability at that moment.*
- *The bill will be calculated in the guest house. If it has to be paid by the official then food cost will be added otherwise not.*
- *It will show the approval hierarchy details along with date and comments.*
- 

### 2.3 Users and Characteristics

*There are 4 major users of this module.*

#### **1. Admin:**

- *All the booking requests will be sent to the admin and admin will confirm or reject them according to the room availability within those requested dates.*
- *If room is available then admin will allot room according to the specified requirement of the guest. After the room has been booked against a guest an booking confirmation mail will be sent to the guest as well as the VECC employee who requested for that concerned guest.*
- *Admin can view and manage the rooms, the room charge list, all the bookings as well as the guest archive data.*
- *If something with higher priority takes place at the guest house then the admin has rights to cancel the bookings in those days and notification through mails will be sent to the requester.*

#### **2. Requester:**

- *Any VEDA user can play the role of a requester.*
- *He will be able to fill up a requisition form and send it to the head for approval. This will follow an employee hierarchy according to which this approval will be done.*

- *The guest may be some person inside VECC Kolkata or any outsiders. In case of guests coming from outside of VECC the person details will be sent by fax/ mail and the VECC employee will fill up his data accordingly will raising a request for him.*
- *If the request is approved then send it to the admin for booking.*
- *He will receive a confirmation mail from the admin if the booking is confirmed.*
- *He will be able to cancel booking if required for any case. A mail will be sent to admin regarding the booking cancellation.*
- *He will be able to view the bill details of the guests requisited by him.*

### **3. Security:**

- *After arrival of the guests, the security section will access the module and check their booking details. If their booking is there then they will issue a CEP and allow them to go to the guest house.*
- *At the time of departure also they will check the status, if payment is done then they will take the CEP back and allow them to go.*
- *They will be able to see all the booking details but cannot change anything except the status. They will make the status as CEP generated.*

### **4. Guest house:**

- *After going to the guest house, the guest house stuff will record the check in time.*
- *If guest wants to change the room and if rooms are available then the guest house can change the room.*
- *Bill calculation depending upon the room booked and expenditures and generation is also a part of this guest house. Here they will check if any room damage occurred or not. If yes, then charges will be taken accordingly.*

## **2.4 Operating Environment**

### **Software Requirement:**

- *Operating System: Window 7 and higher versions.*
- *Front End: Html, CSS, JavaScript, Bootstrap*
- *Back End: Oracle Database, Grails, AJAX, itex*
- *Software Tools : Groovy Grails Tool Suite, SQL Developer*
- *Web Server : Apache Tomcat 8.0 or above versions*
- *Browser: Internet Explorer and others.*

### **Hardware Requirement:**

#### **Client Side:**

- *Processor: Pentium 2.0 and above.*
- *Ram: 256 Mb and above.*

#### **Server Side:**

- *Processor: Pentium 2.0 and above.*
- *Ram: 2 Gb*

- *Hard Disk Space: 4Gb*

## **2.5 Design and Implementation Constraints**

- *It can only be used by the veda users. Others cannot access it. So the booking can only be done by a person from VECC.*
- *Have to enter the food bills for each day manuall*

## 3 Specific Requirements

### 3.1 External Interface Requirements

#### 3.1.1 User Interfaces

*The request form will be available to every VEDA user as well as the admin. Anyone can play the role of a requester and generate request by filling up the form and sending it to the higher authority for approval. After the request gets approved, requester will send it to the admin for booking. The admin can see all the requests which is stored in "GH\_REQUISITION" table as well as the room availability which will be fetched using the tables "GH\_ROOM" and "GH\_ROOM\_TRANSACTION" table. If room is available within the requested period then admin will confirm booking and book room. Admin can cancel any booking for emergency purpose. The security also can access the system and check the status of the bookings. They cannot change anything except the status of the booking. They will generate a CEP for the guests at the check-in time. The guest house can view all the details of the guest and can change the room number of the guest which was set by the admin if guest requests so and the room is also available. They will generate the bills at the check-out time and bill will be calculated according to the type of guest. If personal, then only room charge and damage cost (if any) will be applicable and if official then food charges will also be calculated with this. The bill will be printed. Security will check the status in the "GH\_BILL" table, if it is showing that the payment is done then the CEP will be collected. The admin and the guest house can check all the details of a particular room or a person using the table "GH\_ROOM\_TRANSACTION" and flow of the request using "GH\_COMMENT" table.*

#### 3.1.2 Hardware Interfaces

**Hardware requirements for a system to work are:**

- CPU : Any CPU which can be in the form of external (CPU for PC) or internal (for laptops)
- Monitor: Any monitor which is capable of displaying the signals sent by the computer.
- Keyboard: A standard QWERTY keyboard for data entering.
- Mouse: Any standard mouse.

#### 3.1.3 Software Interfaces

**Software requirements for a system to work are :**

- Oracle 10g database or higher version
- Google Chrome or any other web browser

#### 3.1.4 Communications Interfaces

**Communication Interface:**

- Web browser: Chrome, internet explorer
- SMTP server
- LAN connection



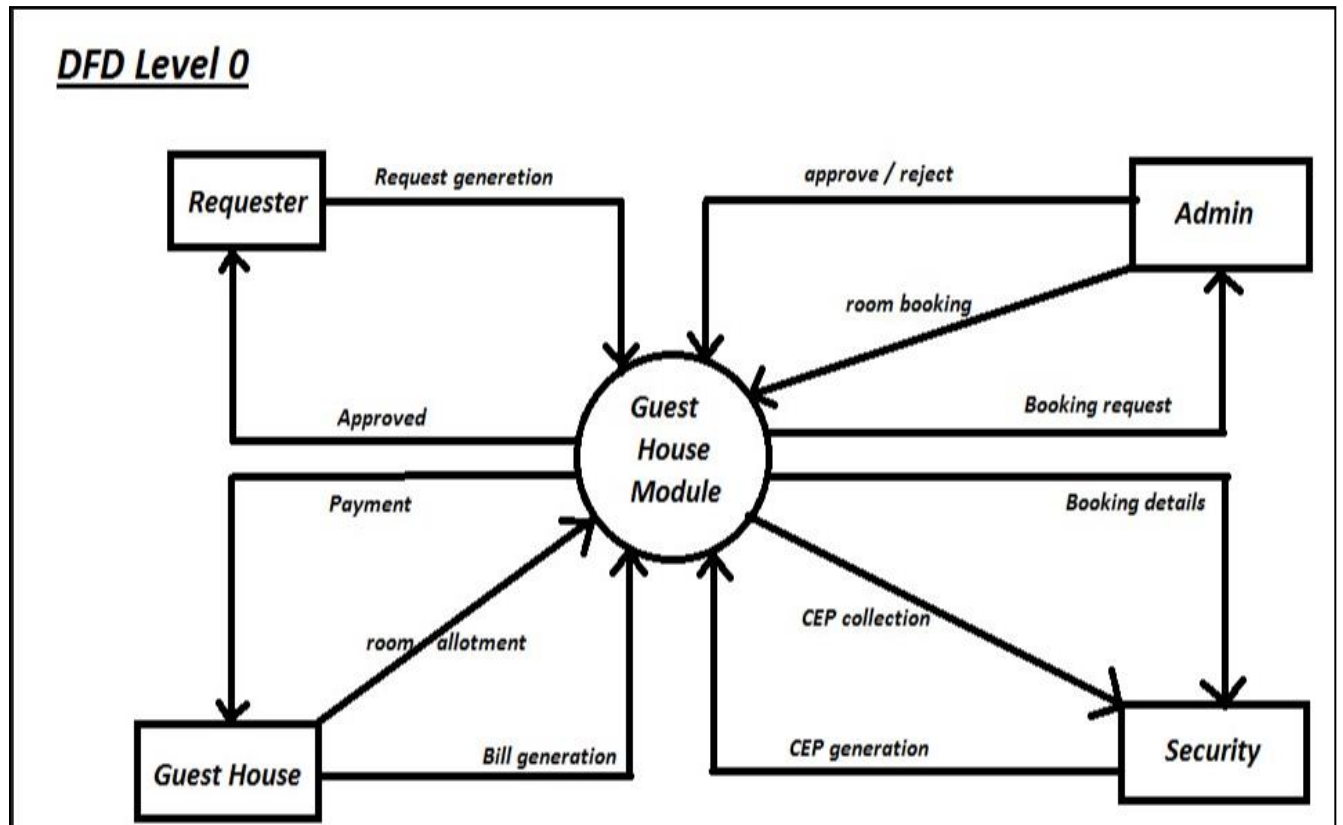
## 3.2 Functional Requirements

- *This module sends the requests to the higher authority for approval.*
- *Send the request to admin after approval.*
- *If booking is confirmed then sends a confirmation mail automatically to the requester with room details.*
- *This should be able to maintain all the information and show it whenever needed to the intended user accordingly.*
- *Different users will have different modes of access and permission.*
- *The booking cancellation can be done by the admin or the requester himself.*
- *Admin as well as the guest house can change the room number of a guest if rooms are available.*
- *At the time of bill calculation, guest house has to check whether any damage has occurred or not. If occurred then penalty cost will be added in the bill.*
- *For the official guests, the food cost will also be calculated.*
- *Female guests will not be allotted to rooms in which already booking is done for a male guest for the other bed of the room.*
- *Rooms reserved for conference purpose or any special guests will not be shown when the beds users will search for room availability in a particular duration.*
- *Room charges will vary according to guest category.*
- *Various method of bill payment will be accepted.*
- *Booking will be done for a room or only a bed depending upon guest requirement.*

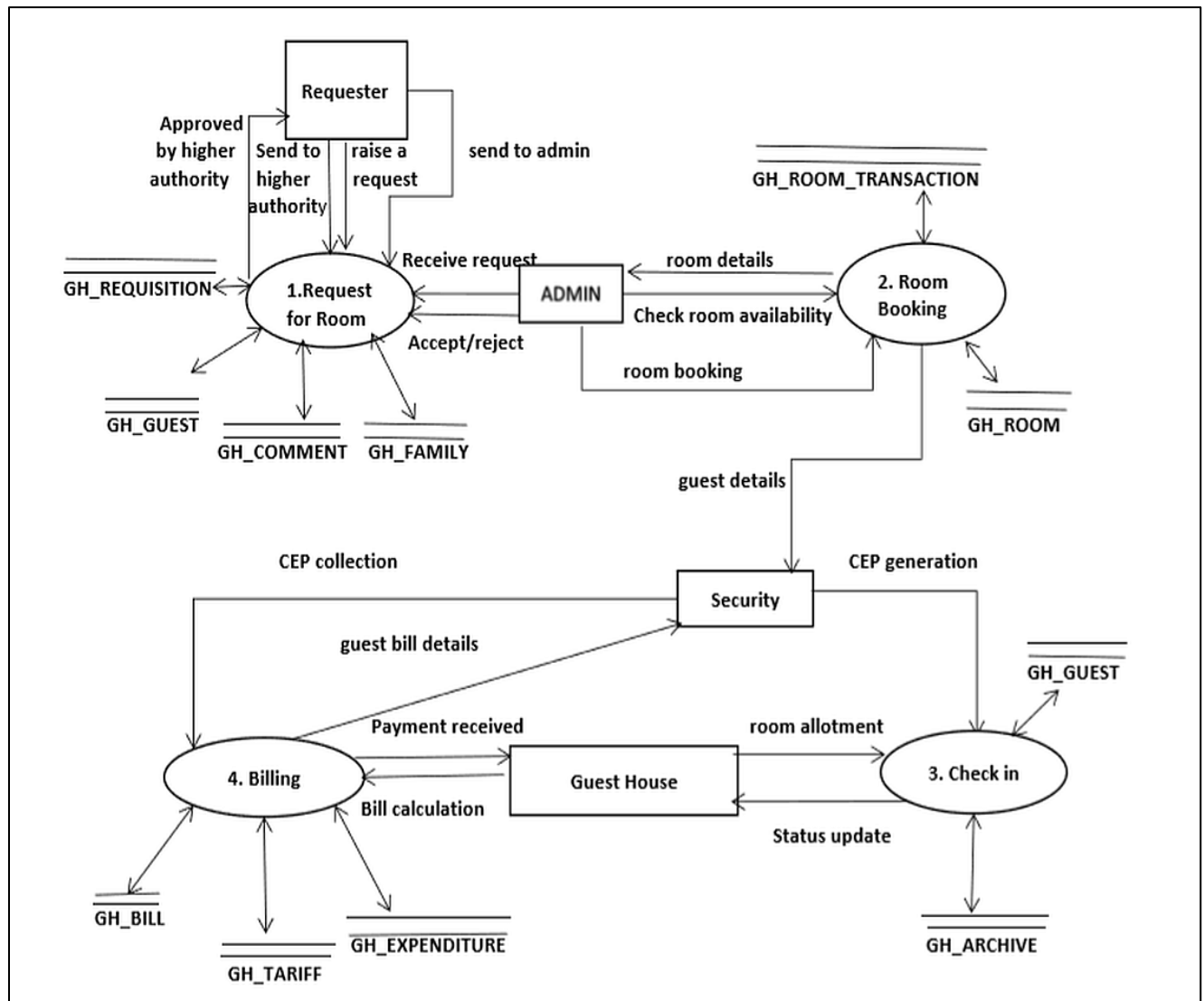
### 3.3 Behaviour Requirement

#### 3.3.1 Data Flow Diagram

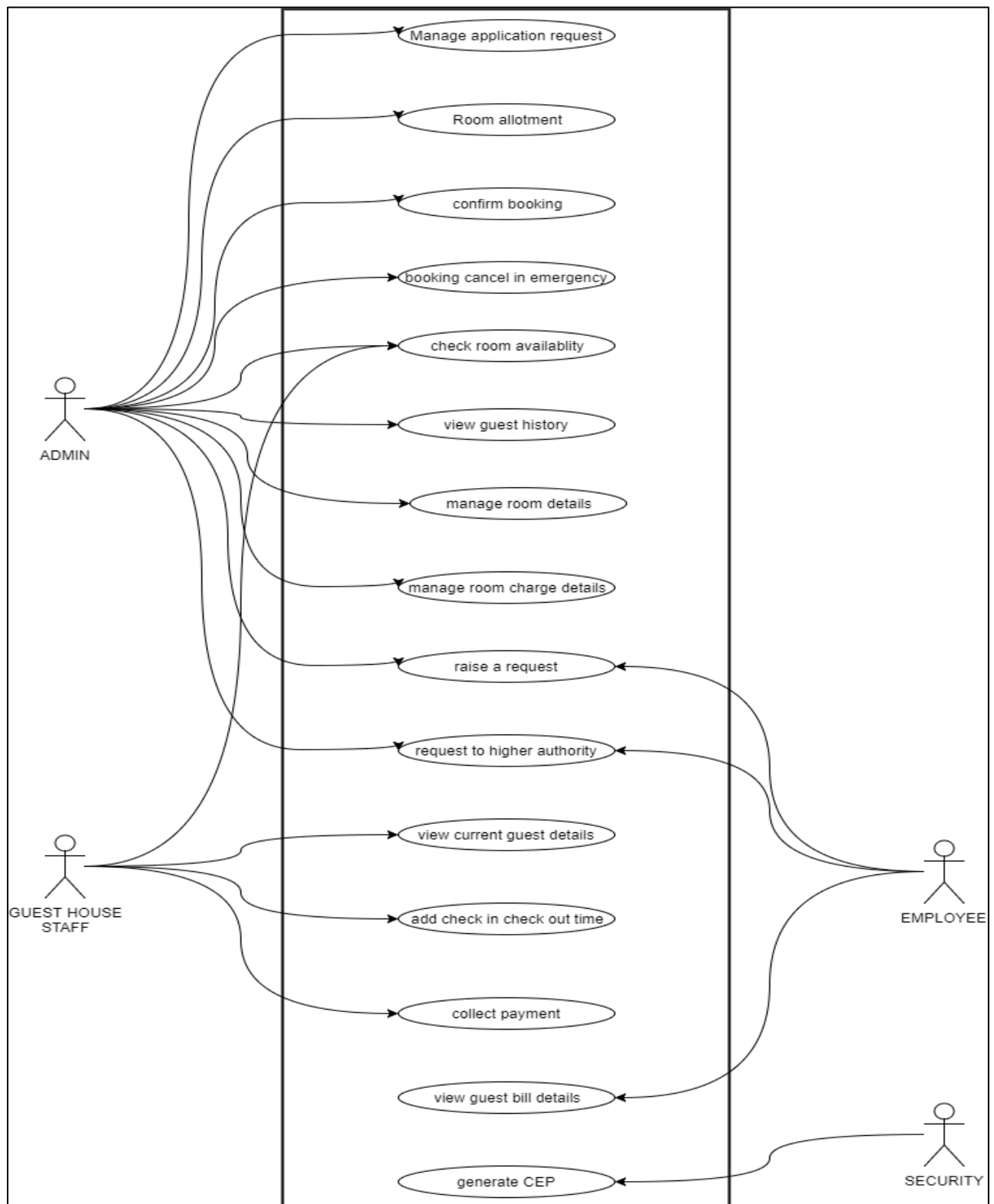
DFD-Level-0



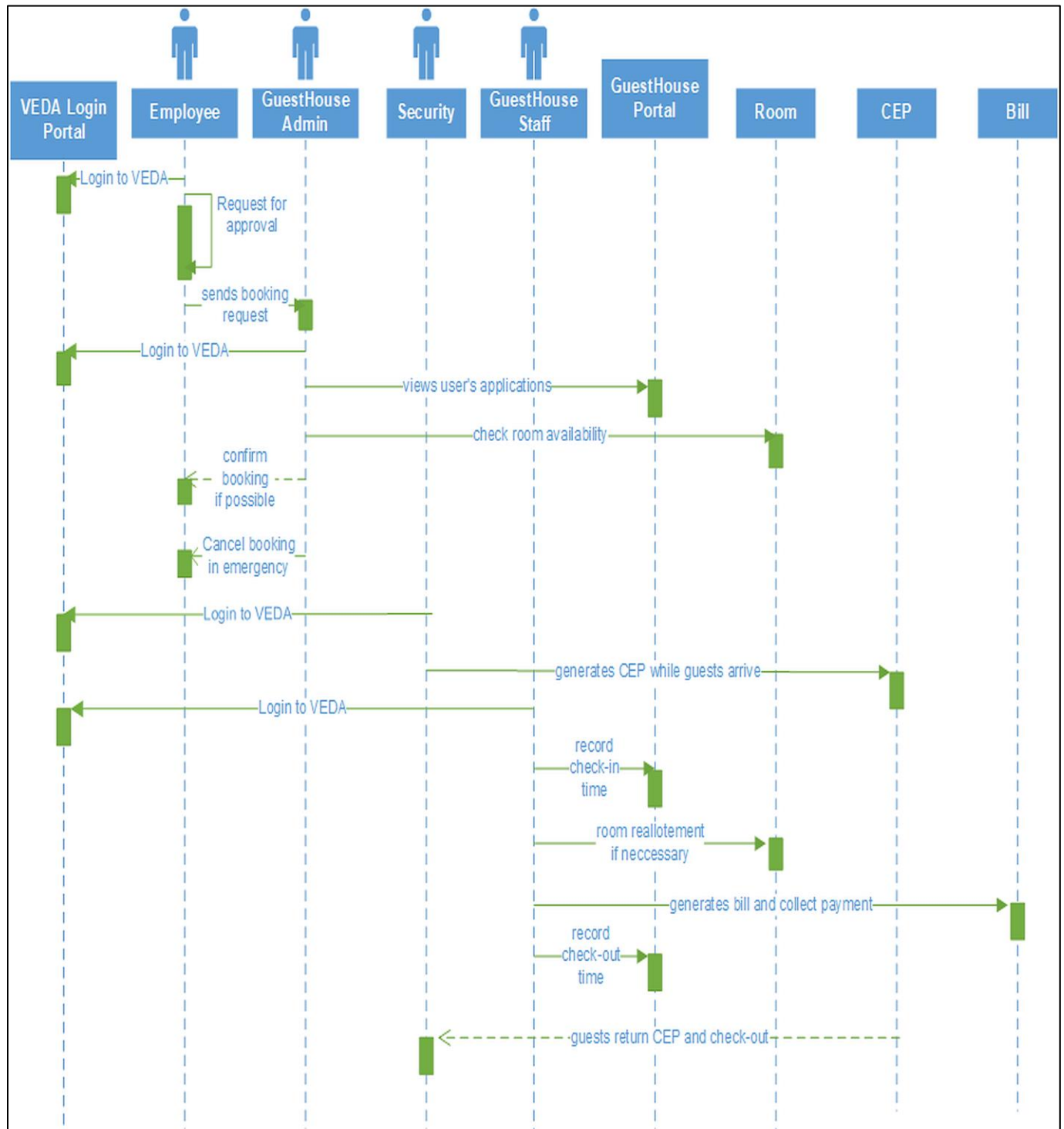
## DFD-Level-1



### 3.3.2 Use Case Diagram



### 3.3.3 Sequence Diagram



## 4 Other Non-functional Requirements

### 4.1 Performance Requirements

- *System should be able to handle multiple users.*
- *Database updating should follow transaction processing to avoid data inconsistency.*
- *Our module provides a good graphical user interface with various forms for viewers.*
- *The web pages will be updated without reloading the page.*

### 4.2 Safety and Security Requirements

- **Safety**
  - *Only the veda users will be able to use it using their id which will map to the employee database of veda.*
  - *Here we will be using session perid.*
  - *Data will be sent from one form to another in encrypted format.*
- **Security**
  - *After generation of a request, it needs to get approved by the head of the requester according to the hierarchy. It is done to make sure that the superiors have some idea about their subordinates and to check the reason behind the arrival of the guests is valid.*
  - *Every external entity cannot have the right to change all the table details. This is why limited permissions are given to each entity according to their operations.*

### 4.3 Software Quality Attributes

**Accuracy:** *The level of accuracy in the proposed system will be higher. All operation will be done correctly and it ensures whatever data is coming from the end user, is accurate.*

**Reliability:** *Human efforts of manual Guest-House booking system are replaced by well designed software. So the guest house management system becomes highly reliable.*

**Portability:** *The software runs on Java Virtual Machine, hence the software is portable enough. Also as we are using relational database to store all user's data, we can easily transfer from Oracle to MySQL or any other RDB if necessary in future, without much hassle.*

**Maintainability:** *The software is divided into separate modules for various functionalities, so the maintenance becomes easy if any bugs arise in future.*

**Usability:** *The system will be easy to operate, as most of the operations will run automatically at the background. The users need to select the options as per their requirements and provide some trivial data as input.*

**No redundancy:** *In the proposed system utmost care would be that no information is repeated anywhere in storage. This would assure economic use of storage space and consistency in the data stored.*