

HMS Software Design Document



Session: 2021 – 2025

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1. Introduction

1.1. Purpose

The purpose of Software Design Description is to identify what need to coded that is specified in SRS. In this document, brief information of Hotel Management System will be given.

1.2. Scope

In this document, the detailed description of Hotel Management System will be given. Our hotel management system project will have a web interface.

In the web interface, there are 3 types of user and which are;

- Administration
- Staff
- Authorized user

Each user type will have a different authorization to access to the system.

1.3. Definitions, Acronyms & Abbreviations

DB	Database
FP	Function Points
GUI	Graphic User Interface
HW	Hardware
IDE	Integrated Development Environment
IE	Internet Explorer
IEEE	Institute of Electrical and Electronics Engineers
I/O	Input / Output
IP	Initial Plan
KU	Knowledge Unit

PY	Python
LOC	Line Of Code
MS	Microsoft
PS	Problem Statement
RAM:	Random Access Memory
SDD	Software Design Description
SPMP	Software Project Management Plan
SQL	Structured Query Language
SRS	Software Requirements Specification
SW	Software

2. System Overview

Hotel management system is a desktop application based project, which helps to hotel employees interacting to clients and each other. To do this, hotel management system has messaging, sending e-mail module

3. System Components

3.1. Decomposition Description

3.1.1. Module Decomposition

The way followed while making module decomposition is to divide the system into modules so that the operations are done under each module will be highly related with each other, but they are not so much related with other operations in other modules. Taking this into consideration, hotel management system project's main services are as follows;

3.1.1.1 User Authentication Module

Identification: User Authentication Module

Type: Application

Purpose: This Module provide user to register and authenticate user.

Function: User enables to register to system and log in. Also this module provide changing password and help user if they forgot their password.

Subordinates:

- Sing in
- Log in
- Changed Password
 - Forgotten Password

3.1.1.1.1. Sign in

Identification: Sign in

Type: Process

Purpose: Provides user to get their authorization level which is recorded in corresponding cell of the user table.

Function: A user enters their required information (e-mail, password) to the web form. If those information match with a row of the user table, user gets their authorization level.

Subordinates:

3.1.1.1.2. Sign Up

Identification: Sign up

Type: Process

Purpose: Provides a registration process to user, if user information is not recorded to the user table.

Funtion: A visitor fills the registration form and click on the Complete Registration button. If every information given is correct, user's information is recorded to user table and user get the “customer” status by default. For other employee is defined by the administrator in their panel manually.

3.1.1.1.4. Change Password

Identification: Change Password

Type: Process

Purpose: To make user able to change their passwords.

Funtion: User enters their old password and new password. New password replaces with the old password if it is correct.

Subordinates:

3.1.1.1.5. Forgotten Password

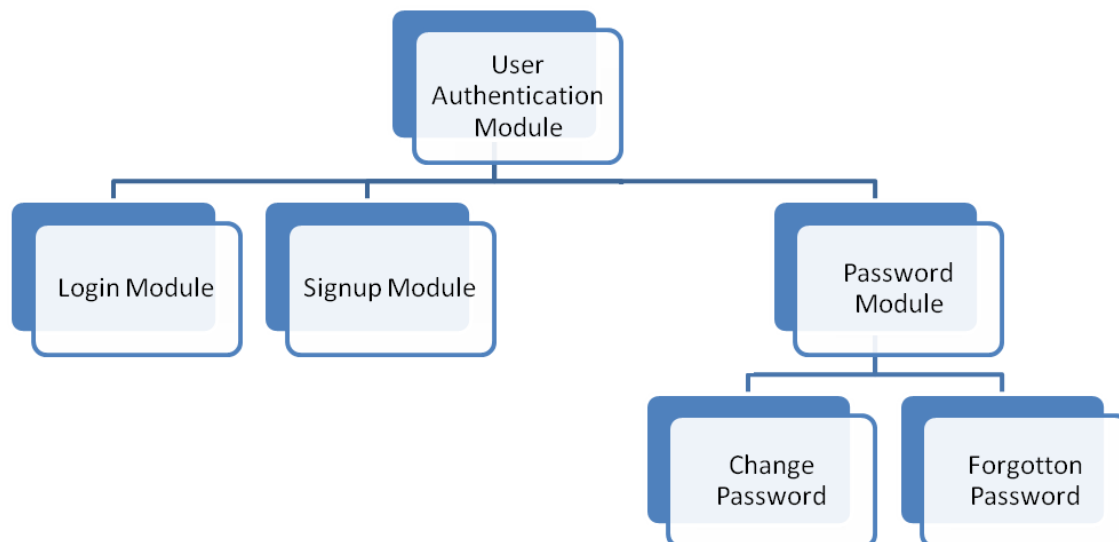
Identification: Forgotten Password

Type: Process

Purpose: By this module, user can get their forgotten password.

Funtion: User sends a request to the system that denotes they have forgotten their password. System sends them an e-mail including their password.

Subordinates:



3.1.1.3 Searching Module

Identification: Searching Module

Type: Application

Purpose: It allows user to searching infomration, data in the system.

Function:

Subordinates:

Searching Module(Administrator)

- Search Room
- Search Employee
- Search Customer

3.1.1.3.1 Search Room (Administrator)

Identification: Search Room

Type: Process

Purpose: Provides a sophisticated room searching to administrators.

Funtion: Administrator enters the capacity and price intervals to the module.

All suitable rooms are listed.

Subordinates:

3.1.1.3.2 Search Employee

Identification: Search Employee

Type: Process

Purpose: Provides administrator to search employee by type, name, etc.

Funtion: Administrator specifies how the search will be done, all suitable employee information are listed.

Subordinates:

3.1.1.3.3 Search Customer

Identification: Search Customer

Type: Process

Purpose: Provides administrator to search customer by name and SSN.

Funtion: Administrator specifies how the search data, all suitable customer information are listed.

Subordinates:



3.1.1.5 Online Reservation Module

Identification: Online Reservation Module

Type: Application

Purpose: This module allows to customer

Function:

Subordinates:

- Reserve Room
- Modify Reservation
- Cancel Reservation

3.1.1.5.1 Reserve Room

Identification: Reserve Room

Type: Process

Purpose: Provides customer to reserve a room.

Funtion: Customer picks a room. Specifies entering and leaving dates and how the room price will be paid. Clicks on reserve button.

Subordinates:

3.1.1.5.2 Modify Reservation

Identification: Modify Reservation

Type: Process

Purpose: Provides customer to change their reservation information.

Funtion: Customer clicks on modify reservation button. They can change any information about the room and cancel the reservation.

Subordinates:

3.1.1.5.2.1 Cancel Reservation

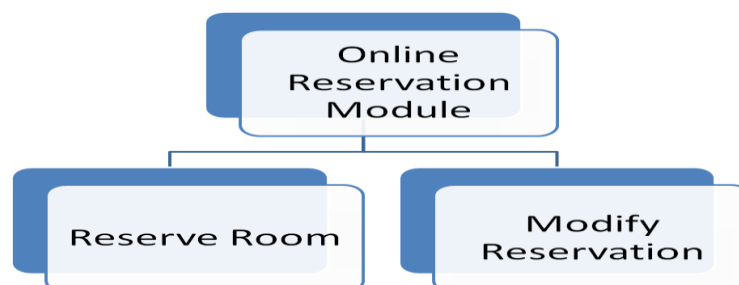
Identification: Cancel Reservation

Type: Process

Purpose: Provides customer to cancel the reservation. Any related data in the reservation table will be erased.

Funtion: Customer clicks on cancel reservation button. Reservation is canceled.

Subordinates:



3.1.1.6 Manage Room Module

Identification: Manage Room Module

Type: Application

Purpose: Adminstator enable to manage room.

Function: This module provides add, delete or change room information like room is vacated or occupied.

- Add Room

- Delete Room

3.1.1.6.1 Add Room

Identification: Add Room

Type: Process

Purpose: Provides administrator to add a new room.

Funtion: Administrator clicks on “Add new Room” button, fills the form according to room specifications, clicks on save button.

Subordinates:

3.1.1.6.2 Delete Room

Identification: Delete Room

Type: Process

Purpose: Provides administrator to delete a room.

Funtion: Administrator clicks on “Delete Room” button, clicks on save button. Because room information does not erased from the database, this process is reversible.

Subordinates:

3.1.1.6.1 Modify Room Information

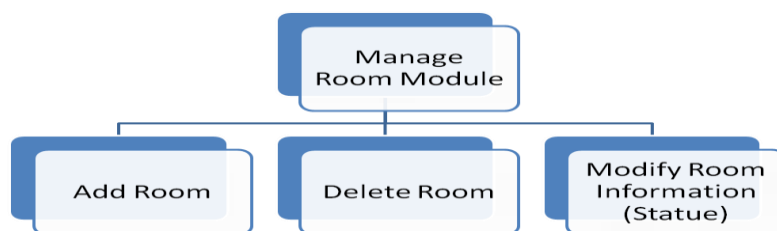
Identification: Modify Room Information

Type: Process

Purpose: Provides administrator to modify a room's information.

Funtion: Administrator clicks on “Modify Room Information” button, all the information can be changed.

Subordinates:



3.1.1.8 Employee Management Module

Identification: Employee Management Module

Type: Application

Purpose: Employee management module provides recording all user information except from customer.

Function: Adding, deleting and modifying employee information.

Subordinates:

- Delete Employee
- Modify Employee Information
 - List Employees

3.1.1.8.2 Delete Employee

Identification: Delete Employee

Type: Process

Purpose: Provides administrator to delete an employee.

Funtion: When an employee is fired or quit, administrator clicks on “Delete employee” button and employee is deleted from user table.

Subordinates:

3.1.1.8.3 Modify Employee Information

Identification: Modify Employee Information

Type: Process

Purpose: Provides administrator to modify an employee's information.

Funtion: When it is required, administrator clicks on “Modify” button and makes the necessary changes.

Subordinates:

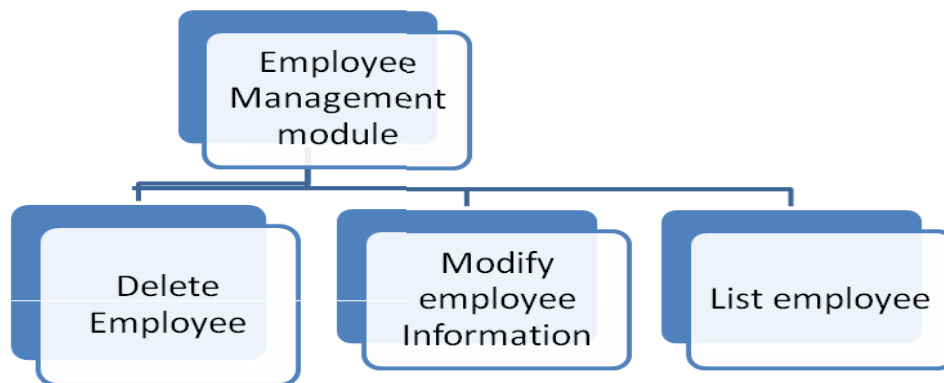
3.1.1.8.4 List Employees

Identification: List Employees

Type: Process

Purpose: Provides administrator to list all the employees according to given interval.

Funtion: Administrator clicks on “List” button and specifies the listing property. All the suitable employee information are listed.

Subordinates:**3.1.1.9 Contact to Supplier Module**

Identification: Contact to Supplier Module

Type : Application

Purpose: Administrator can control Supplier relation in side of order.

Function: This module provides contact to supplier, sending email and order.

Subordinates:

- Search Supplier
 - Send E-Mail

3.1.1.9.1 Search Supplier

Identification: Search Supplier

Type: Process

Purpose: Provides administrator to search suppliers.

Funtion: Administrator clicks on “Search” button and specifies the wanted supplier properties. All the suitable suppliers are listed.

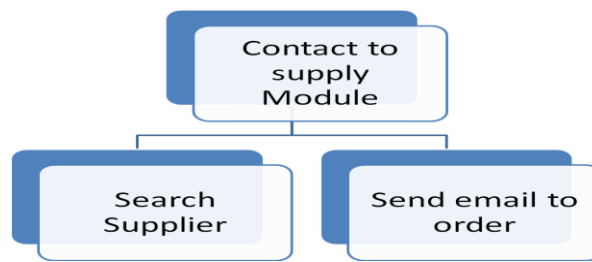
Subordinates:**3.1.1.9.2 Send E-Mail**

Identification: Send E-Mail

Type: Process

Purpose: Provides administrator to send an e-mail to supplier.

Function: Administrator clicks on e-mail link in the supplier information, clicks on “Send” button.

Subordinates:**3.1.1.10. Announcements Module**

Identification: Announcement Module

Type: Application

Purpose: This module provides giving information about events.

Function: Administrator enable to add, delete or change announcement.

Subordinates:

- Add Announcement
- Delete Announcement
 - Modify Announcement

3.1.1.10.1 Add Announcement

Identification: Add Announcement

Type: Process

Purpose: Provides administrator to add a new announcement.

Funtion: Administrator clicks on “Add new Announcement” button, enters the announcement information and clicks on “Done” button.

Subordinates:**3.1.1.10.2 Delete Announcement**

Identification: Delete Announcement

Type: Process

Purpose: Provides administrator to delete an announcement.

Funtion: Administrator clicks on “Delete” button, and deletes the announcement.

Subordinates:**3.1.1.10.2 Modify Announcement**

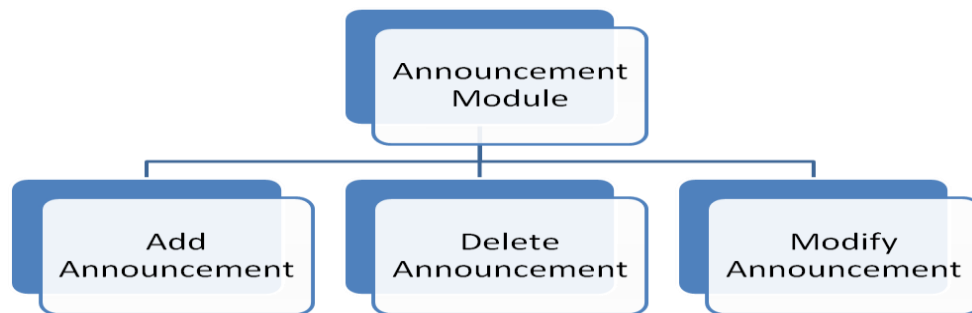
Identification: Modify Announcement

Type: Process

Purpose: Provides administrator to modify an announcement.

Funtion: Administrator clicks on “Modify” button, makes the necessary changes, clicks on “Done” button.

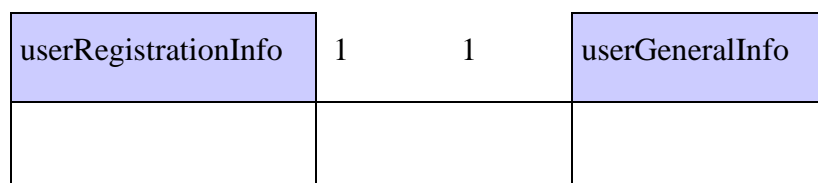
Subordinates:



3.1.2. Data dependencies

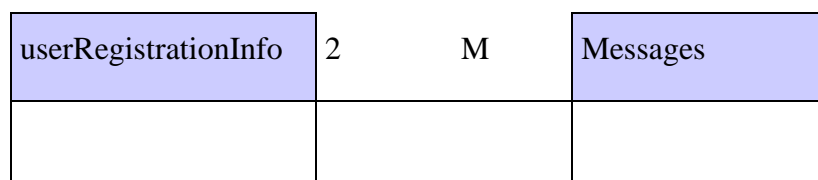
In this part of SDD, relations between entities will be mentioned.

userregistrationInfo – userGeneralInfo



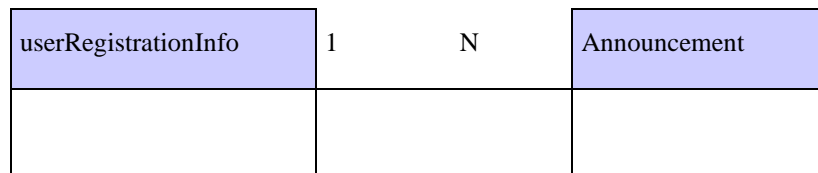
1:1 relation. A user can have one general information. A general information can belong to one user.

userregistrationInfo – messages



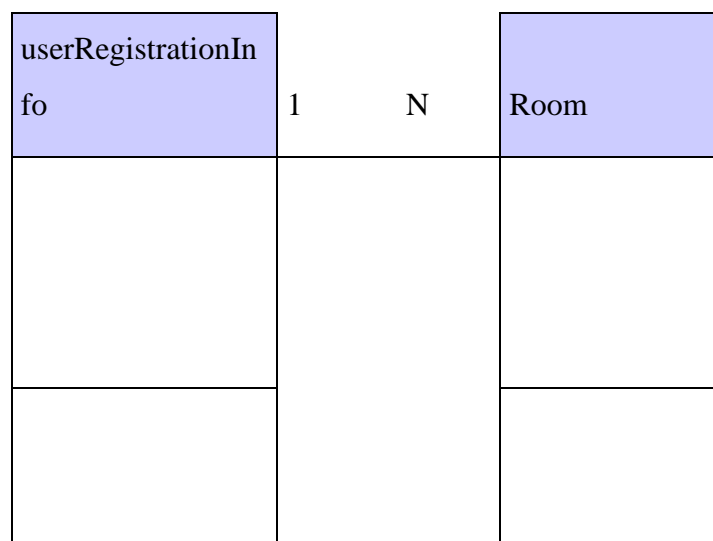
2:M relation. A user may have many messages. A particular message belongs to two users which are sender and receiver.

userregistrationInfo – announcement



1:N relation. One user(administor) can give several announcements. An announcement may belong to one user(administrator).

userregistrationInfo - room



A user can book several rooms. A room can be reserved by one user.

3.2. 3.3 Interface Description

3.2.1. Module Interfaces

In this part of SDD, communication between modules is explained in detail.

Database Module	< - >	ViewInformation viewReservedRoom viewMessages viewMails	< - >	Profile Module
Database Module	< - >	login registration passwordTransections	< - >	Authentication Module
Database Module	< - >	setHeader setImage setContent announcementHistory	< - >	Announcement Module

3.3. Module Detailed Design

3.3.1. Login Module

Method Name: Login

Description: allows users to enter the system

Share Type: public

Return Type: Boolean

Parameters: username, password, imageVerification

3.3.2. Register Module

Method Name: registration

Description: registers a new user to the system

Share Type: public

Return Type: boolean

3.3.3. Reservation Module:

Allows the front desk to manage room reservations.

Tracks guest information, check-in, and check-out dates.

Provides room availability status.

Parameters: firstName, lastName, password, email, birthDate, gender, country, city, distinct.

3.3.4. Check-In/Check-Out Module:

Manages the check-in and check-out processes.

Updates room status upon check-in and check-out.

3.3.5. Room Management Module:

Handles room inventory, availability, and maintenance.

Allows for room categorization (e.g., standard, deluxe).

3.3.6. Billing and Invoicing Module:

Manages guest billing, including room charges and additional services.

Generates and sends invoices to guests.

3.3.7. Guest Management Module:

Maintains guest profiles and history.

Manages guest preferences and special requests.

3.3.8. Reporting Module:

Generates various reports for management analysis.

Includes occupancy reports, revenue reports, etc.

3.3.9. Employee Management Module:

Manages employee information, roles, and schedules.

Handles payroll and attendance.

3.4. Data Detailed Design

3.4.1. Table Name: Users

This table holds user's registration information.

Column Name	Data Type	Description	Example
userId (PK)	INT	primary key, auto increment, not null	1
firstName	VARCHAR(15)	holds first name of user	Murat
lastName	VARCHAR(15)	holds last name of user	Çatal
Password	VARCHAR(15)	holds password of user	\$123_321\$
Email	VARCHAR(45)	holds email of user	murat@gmail.com

templateId	INT	holds the template id of user. This column is PK for template table.	23333
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Table 1: Users**3.4.2. Table Name: Customers**

This table holds customers information.

Column Name	Data Type	Description	Example
customerID (PK)	INT	primary key, auto increment, not null	1
firstName	VARCHAR(15)	holds first name of user	Murat
lastName	VARCHAR(15)	holds last name of user	Çatal
Phone Number	VARCHAR(15)	holds phone number of user	+923096435752
Feedback	VARCHAR(45)	holds email of user	murat@gmail.com

Table 2: Customers**3.4.3. Table Name: Room**

This table holds room information.

Column Name	Data Type	Description	Example
roomID (PK)	INT	primary key, auto increment, not null	1
roomNumber	VARCHAR(15)	holds room number	22
occupant	VARCHAR(15)	holds name of user	Mustafa
isAssured	VARCHAR(15)	true of false	True

Table 3: Rooms**3.4.4. Table Name: RoomBookings**

This table holds room booking information information.

Column Name	Data Type	Description	Example
bookingID (PK)	INT	primary key, auto increment, not null	1
customerId	VARCHAR(15)	holds room number	22
roomNumber	VARCHAR(15)	holds name of user	100
CheckInDate	BOOL	true of false	21/9/2002

CheckOutDate	VARCHAR(15)	Holds check out date	21/10/2002
IsAssured	BOOL	Store confirm assurance	true
ConfirmationNumber	INT	Stores confirmation number	15

Table 4: RoomBooking**3.4.5. Table Name: Meals**

This table meals information.

Column Name	Data Type	Description	Example
MealID (PK)	INT	primary key, auto increment, not null	1
Description	VARCHAR(15)	holds meal information	This meal is.....
Price	VARCHAR(15)	holds meal price	100

Table 5: Meals**3.4.6. Table Name: MealOrder**

This table holds meal order information.

Column Name	Data Type	Description	Example
orderID (PK)	INT	primary key, auto increment, not null	1
CustomerID	INT	holds room number	22
MealID	INT	holds name of user	Mustafa
PaymentType	VARCHAR(15)	true of false	True

Table 6: MealOrder