Hotel Revolution 2014s

Gianpaolo Branca, Simone Mosciatti, Giovanni Pelosi
Sara Zanzottera

October 22, 2014

Abstract

The software aim to help the staff of an hotel to manage the rooms of the structure.

It will help to identify free rooms in a particular period of time thus helping to understand if it is possible to satisfy clients' requests.

Also it will keep count of how many days a particular client has been host of the structure helping the manager to bill accordingly.

1 Assigment 1

1.1 Name

Hotel Revolution 2014s

1.2 Team Member

Giovanni Pelosi, Sara Zanzottera, Gianpaolo Branca and Simone Mosciatti

1.3 Specification

The system will be a Back-Office information system. The system implement the functions of a Decision Support System, it will help decide what room offer to who.

1.4 Problem the software will solve

How to manage the booking of rooms in a big hotel, including the assigment of rooms to big groups or guest with particular request (smokers, pets, disabilities, etc...)

1.5 Requirements of the system

The system helps in a useful and friendly way the staff in the hotel managment.

- Will allow the reception to be quick and extremely precise in answering any inquiry from possible guests.

- Will let fast booking operation by the hotel staff.
- Will show all the possible options available for a guest.
- Will let the staff know who is guesting in a particular room.
- Will let the staff know how long a guest has been in the hotel.
- Will let the staff know which rooms will be free sooner.
- Will help to manage the revenue of the hotel, providing an interface that shows the distribution of the bookings during the years.
- Will provide two level of authentication, one from the staff and one from the manager, the manager will be able to access all the information while some sensitive information (revenue) won't be show to the staff.

1.6 User

The software will be used by the hotel staff, in particular by the receptionist and the manager.

The main user is know, and it will be possible to teach the staff how to use it.

Despite, the interface will be user friendly even for non-technical staff, so it will be simple for a new hire to learn quickly how to interact with the system.

The receptionist will, mainly, use the system to check the availability of the rooms in a specific period.

The manager will use the software to bill the client.

1.7 Note for development

Since the team is not extremely aware of the mechanics behind an hotel, we will ask to a real hotel staff feedback on the prototype of the software.

2 Assigment 2

2.1 The Client

The client of the project is a medium size hotel in China, the Jason Hotel.

2.2 The Task to be Undertaken

Our project aims to help hotel receptionists in their work, making easier and quicker for them to book rooms for the hotel's guests.

The software will allow them to book a rooms in few clicks, to find out precisely and immediately which rooms are free and for how many days, the general availiability of rooms in a certain period, the features of every room and so on.

It will also help the hotel owner while billing the clients, calculating automatically the price of the stay and the total revenue of the hotel in a certain period.

We will develop our software on three sides: realizing a database containing the information about hotel's rooms and their availiability, designing a graphical interface that will be user-friendly to minimize the training period of the staff and allow them to be comfortable with our software, and developing a software that will hold database's informations for the staff and help the owner to bill clients and to calculate the revenue of his hotel.

2.3 Requirement Analysis

The system will meet the following requirements.

2.3.1 Interface

1. Booking Interface

    - Intuitive and user-friendly to provide a quick answer to the client for his request, and if possible, confirm with one click the booking.
    - Has a section where fill the date of check-in and check-out and show all the rooms free for that period. The system can show many type of rooms and prices.

- Has some feature to satisfy other request, like guest disability, pet, child, smoker. For example, for a disable guest the system choose a room at the lower floor possible
- Has a form for fill the guest information, like name, passport, e-mail. If the guest can't give all the information immediately can be filled later in the room section

2. Rooms interface

   - Has a section where see all the room, if they are free or occupied in the current day or a choosed period.
   - Clicking on the room the user can see all the feature of the room, and also modify it if necessary, if it's booked or occupied the system show also all the guests data.
   - The user can modify guests data, check-in/out time or delete the booking.
   - A form can be filled with other particular requests, in case.

3. Guest Search Interface

   - Has a form to fill with the name and will return all the available information about such guest.

4. Billing interface

   - It can be opened only by the manager with a log-in page.
   - It shows all the revenue of the hotels for a day, week, or month.
   - In the main page it shows the bill for all the guest which check-out is the current day.

2.3.2 DataBase

- It must be pre-filled with the hotel map, with all the rooms.
- It has a first table for the rooms and some column to specify rooms occupation, type and feature.

- It has a second table for the guests information, linked with a 1-m relation with the room (a room can have many guests, but a guest can stay in only one room)
- It has a third table for the revenue of the hotel.
- (optional) all the important information can be encrypted

2.4 Suggested Deliverables

Not being expert on the main procedures about hotels organization, we believe that to realize this project a continuos and total collaboration among System Analysts, System Designers, System Developers and Final Users is crucial.

2.4.1 Management deliverables

Our intention is to organize many meetings and a documentation about Requirement Analysis in such a way to be sure:

1. To have a complete acquaintance of clients necessity and expectations.
2. To improve the communication and cooperation level among developers, designers, managers and users.
3. To give the final user the possibility to have a central role during the entire development of the system and to choose, from time to time, the best solution.

2.4.2 Design Document

We want to document and to maintain the presence of final users even in the design process of the system. By doing so, and by keeping in mind the Requirement Analysis, we want to meet the final users necessities. These documents will be updated for all the Design process duration.

2.4.3 Source Code

Our intention is to document all the development of the code, not only at a technical level, comprehensible only to the programmers, but even at a more

user friendly level. So, even final users will be able to keep under control the development of the system.

2.5 Technical deliverables

2.5.1 DataBase

We are going to use a Database Structure, divided in tables, to save the different informations like:

1. Rooms
2. Guest
3. Payments
4. Others

2.5.2 Interface

We will organize the system as much user friendly as possible. We will implement the main functionalities directly on the home page. These are:

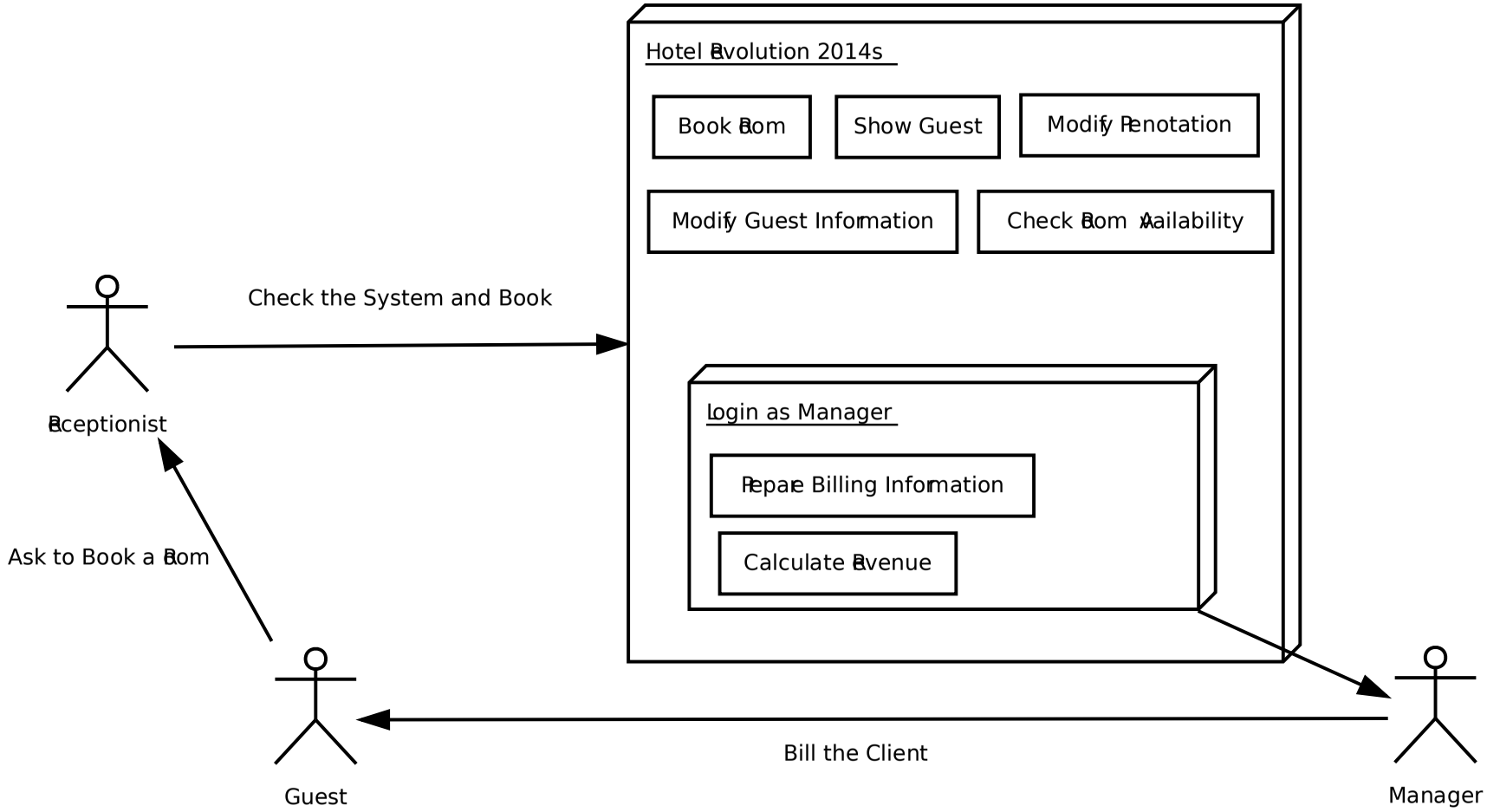
1. To add / cancel a reservation.
2. To verify the availability of a room.
3. To verify payments.
4. To control general services.

2.5.3 Interactive Structure of the Hotel

According to clients necessity we will implement, on the home page, an interactive structure that represents the hotel. By doing so, final user will immediately have a complete view of general situation, and the possibility to select a room to know its details.

2.6 Outline Plan (Principal activities and Milestones)

1. (Friday 09/26) Preliminary overview of the project.
2. (Friday 10/10) Detailed system analysis, this will include:
    - The task to be undertaken.
    - The use cases.
    - Detailed explaination of the features.
    - The client who required the software.
3. (Thursday 10/23) System required analysis, it will include:
    - The detailed data modelling.
    - The detailed data analysis.
    - The detailed process modeling.
4. (Friday 11/07) Final describtion of the project, it will include:
    - The detailed explaination of the application architecture.
    - The detailed database design.
    - The datailed input of the application.
    - The detailed output of the application.
    - The user interface design.


Hotel Revolution 2014s
Book Room
Show Guest
Modify Reservation
Modify Guest Information
Check Room Availability
Login as Manager
Prepare Billing Information
Calculate Revenue
Check the System and Book
Receptionist
Ask to Book a Room
Guest
Bill the Client
Manager

2.7 Functions Debscription

Book a Room:

Allows the receptionist to choose and book a room for a guest in a specified period, inserting all related data into the database.

Show Guest:

Allows the receptionist to search in the database for a specified guest's data, in order to make a new reservation for the same guest.

Modify Reservation:

Allows the receptionist to modify reservation's data, for example change checkin-checkout dates, change the guest's name, change room etc.

Modify Guest's Information:

Allows the receptionist to modify guest's data, for example to update passport number or fix a mistake in name's spelling.

Check Rooms Availability:

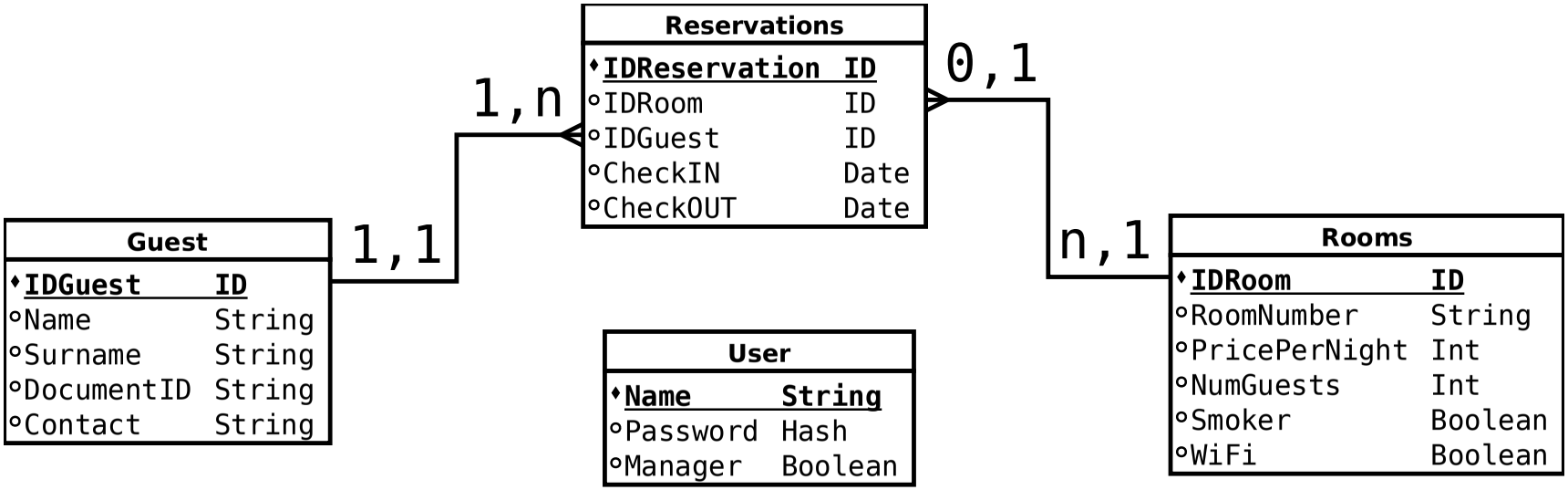
Searches in the database which rooms are free in a specified period and shows the results to the receptionist.

Prepare Billing Informations:

Calculates the price of the stay using the reservation's data, allowing the hotel's owner to easily bill the clients.

Calculate Revenue:

Calculates the total revenue of the hotel in a specified period, summing up all the revenues from every single reservation made in that period of time.


Reservations
♦IDReservation ID
∘IDRoom ID
∘IDGuest ID
∘CheckIN Date
∘CheckOUT Date
1,n
0,1
Guest
♦IDGuest ID
∘Name String
∘Surname String
∘DocumentID String
∘Contact String
1,1
n,1
Rooms
♦IDRoom ID
∘RoomNumber String
∘PricePerNight Int
∘NumGuests Int
∘Smoker Boolean
∘WiFi Boolean
User
♦Name String
∘Password Hash
∘Manager Boolean

2.8 Data Model Table Attributes

- Guest
  The table contains the information about a single guest.

  GuestID:
  The ID for a single guest

  Name:
  The name of the guest

  Surname:
  The surname of the guest

  DocumentID:
  The ID of the document of the guest

  Contact:
  An email or a phone number to contact in case of problem

- Reservation
  The table is necessary to manage the many-to-many relationship between Guest and Rooms.

  IDRegistration:
  The ID of a single reservation

  IDRoom:
  The ID of the room the guest will use for this particolar reservation

  IDGuest:
  The ID of the guest whose prenotation is refered to

  CheckIN:
  The date when the guest will arrive

  CheckOUT:
  The date when the guest will leave

- Rooms
  The table contains the information about the rooms in the hotel.

  IDRoom:
  The ID of a room

RoomNumer:
The number of the room in the structure

PricePerNight:
How much cost the room for a single night

NumGuest:
The maximun number of people that room can accomodate

Smoker:
It is possible to smoke in the room ?

WiFi:
The room has WiFi access ?

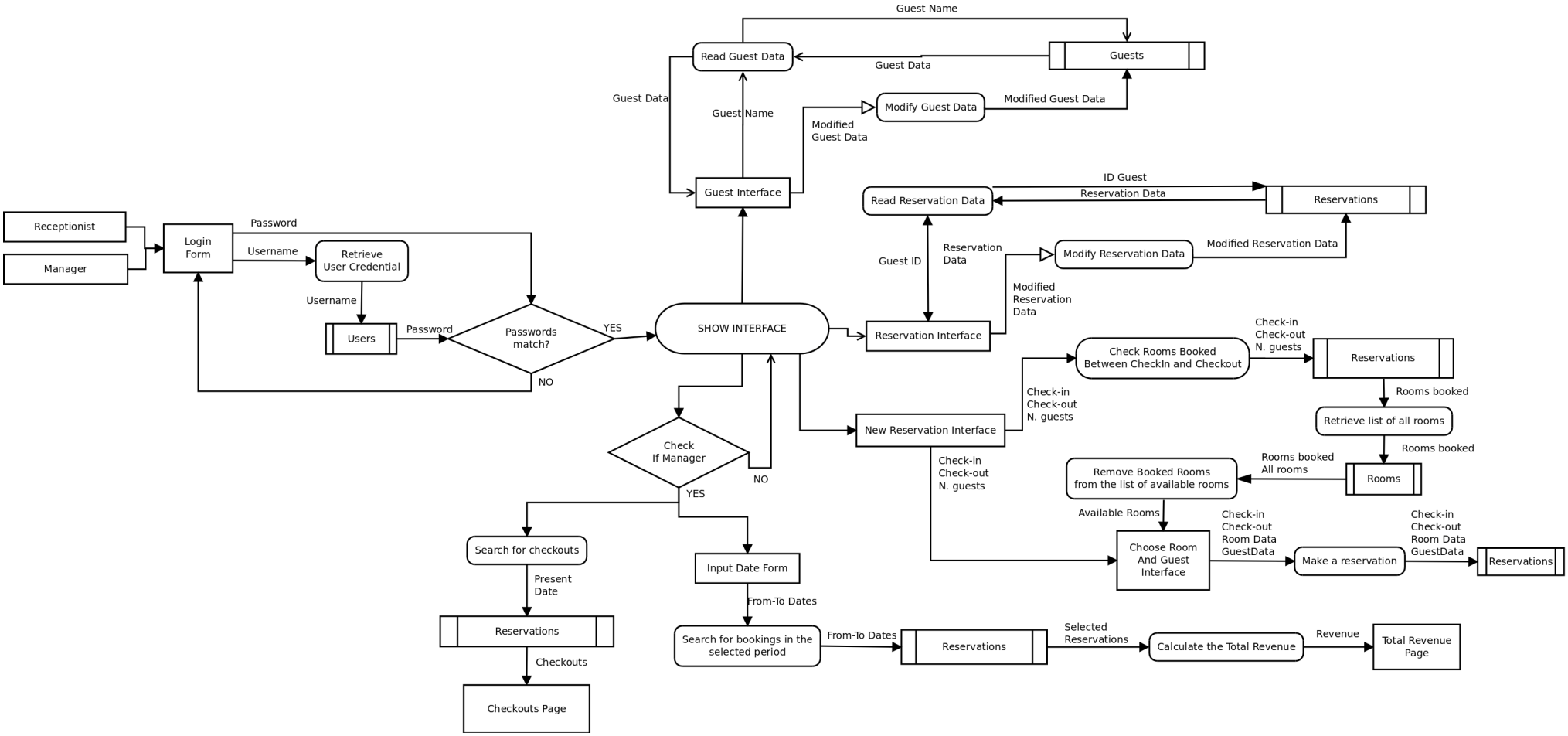
- User
  This table will keep the information about the users who can access and use the application.

  Name:
  Use as PrimaryKey, the username necessary to access at the application

  Password:
  The hash of the password used to access the application

  Manager:
  Is the user a manager ?

3 Assigment 3


Guest Name
Read Guest Data
Guests
Guest Data
Guest Data
Guest Name
Modify Guest Data
Modified Guest Data
Modified Guest Data
Guest Interface
ID Guest
Reservation Data
Read Reservation Data
Reservations
Receptionist
Manager
Login Form
Password
Username
Retrieve User Credential
Guest ID
Reservation Data
Modify Reservation Data
Modified Reservation Data
Username
Users
Password
Passwords match?
YES
NO
SHOW INTERFACE
Reservation Interface
Modified Reservation Data
Check-in Check-out N. guests
Check Rooms Booked Between CheckIn and Checkout
Reservations
Rooms booked
Retrieve list of all rooms
Rooms booked
Check If Manager
NO
YES
New Reservation Interface
Check-in Check-out N. guests
Check-in Check-out N. guests
Rooms booked All rooms
Rooms
Remove Booked Rooms from the list of available rooms
Available Rooms
Check-in Check-out Room Data GuestData
Check-in Check-out Room Data GuestData
Choose Room And Guest Interface
Make a reservation
Reservations
Search for checkouts
Present Date
Input Date Form
From-To Dates
Reservations
Checkouts
Search for bookings in the selected period
From-To Dates
Reservations
Selected Reservations
Calculate the Total Revenue
Revenue
Total Revenue Page
Checkouts Page

3.1 Elementary Process

Login Form:
A form to login in the system interface

Retrive User Credential:
Retrive the user credential for the users database table

Users (database):
Where the user credential and information are stored

Password Match?:
Check if the user credential input match with the data in users database table

Guest Interface:
a page where the guest information are managed

Read Guest Data:
read all the information about the guest from the database

Modify Guest Data:
a function to modify all or a part of the information about a guest

Guest (database):
where all guest informations are stored

Reservation Interface:
a page where the reservation information are managed

Read Reservation Data:
read all the reservations data of a guest from the database

Modify Reservation Data:
a function to modify the reservation data

Reservations (database):
where all the reservations are stored

New Reservation Interface:
a page where the user can do a new reservation

Retrive List Of All Rooms:
get the list of all the hotel rooms

Remove Booked Rooms From The List of Available Rooms:
remove the booked rooms in the selected period from the list of the hotels rooms

Choose Room And Guest interface:
a page where the user can choose the room and input the guest information

Make A Reservation:
the reservation is done and stored in the database

Check If Manager:
check if the user is logged as manager

Search for Check-OUTs:
search all the check-out of today or a specific day

Check-OUTs Page:
a page where manager can see all the check-out

Input Date Form:
a form where input the date for the begin/end of a period

Search For Bookings In The Selected Period:
Search for all the booking made in the selected pariod

Calculate The Total Revenue:
Sum all the revenue from the booking of the period

Total Revenue Page:
show the total revenue in the selected period

3.2 Data Structures

username:
The indentifier used by the manager or receptionists to login

password:
The secret word used to verify the user's identity

Guest Name:
Name of a guest searched in the database

Guest Data:
All the information of a guest founded in the database

Modified Guest Data:
Information modified by the user updating the guests data in the database

Reservation Guest:
The name of the guest

Reservation Data:
All the information of a reservation founded in the database

Modified Reservation data:
Information modified by the user updating the reservation data in the database

Check In/ Check Out:
The data of arriving and departuring of a guest used to check the avaliability of the rooms in that period

Rooms booked:
all the rooms not available for the indicated period

Available rooms:
All the rooms available for the indicated period

All room:
The list of all the room in the Hotel

Room Data:
All the information of a room founded in the database

Checkouts:
The reservation founded that end today

From/to dates:
a period selected by the manager to show the reveneues in that period