**Semester: FALL 2025**

**Topic Name: Hotel Management System**

**Duration: 10 weeks**

**Total marks: 10**

**Group: 3 students**

**The context**

A hotel needs a system to manage its daily operations:

* Guest registration and booking
* Room availability and allocation
* Check-in/check-out process
* Additional services used by guests (restaurant, spa, laundry, etc.)
* Payments and invoices
* Reports for management

The system must ensure smooth operation, avoid double-bookings, calculate charges correctly, and provide analytical statistics.

**2. Actors**

* **Guest**: Customer who books and uses hotel rooms and services.
* **Receptionist**: Manages bookings, check-ins, check-outs, and generates bills.
* **Service Staff**: Provides additional services (spa, dining, cleaning, etc.).
* **Housekeeping Staff**: Maintains and updates room status (clean/dirty).
* **Manager**: Oversees hotel operations, monitors reports and revenue.
* **Administrator (System Admin)**: Maintains system, manages users, security, and configurations.

## 3. Actor’s Features

### Guest (student 1)

* Search available rooms by date/room type. (workshop 1)
* Make bookings. (assignment) => đăng kí thành viên => login => book room:
* Điền member infor tự động dựa trên thông tin tài khoản + loại phòng đã đk room status=”Available” => sau submit: lưu data trên form vào bảng booking(form chỉ cần cho user nhập ngày checkin ngày checkout) => update room status vừa gán cho khách hàng thành “Not Available”
* Request additional services. (workshop 1): Khách hàng login => chọn booking của mình (Booking chưa checkout) kiểm tra đk add service phải trước ngày checkOut => chọn N service trong hệ thống, Nhập quantity ứng với mỗi service => insert N dòng mới vào bảng Booking Service
* Make payments at checkout. (assignment) Khách hàng login => để có được guestID, chọn booking cần check out(điều kiện status = CheckIn) => Tính tiền service cho booking này, Khách hàng chọn loại thanh toán bằng các nút radio => insert dòng mới vào bảng Invoice(BookingID, TongTien, VAT=A%TongTien), 1 dòng mới vào bảng payment => Update Booking status = “CheckOut” //Booking chưa được nv approve

### Logined Actors: Receptionist, service staff, housekepping staff, manager, admin

Loggin by the staff’s username and pasword.

### Receptionist (student 2)

* Create, update, or cancel bookings.(workshop 1): Giống ST1
* Manage check-in and check-out. (workshop 1)

CheckOut: chọn bookingID,

nếu trạng thái booking là “CheckOut” => nhấn nút “Approve” thì sẽ đổi status của booking thành “Complete”

Ngc lại nhân viên sẽ thực hiện quy trình “Make payments at CheckOut” giống với khách Hàng và nhân viên phải nhấn nút “Approve” thì sẽ đổi status của booking thành “Complete”

CheckIn: nhân viên sẽ chọn booking cần check in(Where status = “reserved”) => chuyển trạng thái thành CheckIn

* Generate invoices for guests. (workshop 2) Giống tính năng “Make payment at checkOut”
* Assign rooms. (workshop 2): tính năng này là đổi phòng cho 1 booking. Quy trình nhân viên chọn Booking có trạng thái “Checkin”, Lấy ds roomID cùng loại của booking này, nhân viên chọn RoomID trong ds này => submit: update roomid cho booking
* Logout

### Service Staff (student 3)

* Record service usage (food order, spa, laundry, etc.). (workshop 1): giống tính năng Request addditional sẻvices y chang
* Update service completion status. (workshop 2) nhân viên sẽ chọn 1 booking(Only Booking Status = “CheckIn”) => chọn service của booking và nhấn nút “Complete” => update status của Booking-Service = Complete
* Report and statics(assignment)

Report 1

* + List of all services provided today.
  + Includes guest name, booking ID, service name, quantity, and service date.
  + Helps staff keep track of what has been delivered.

**Example columns:**  
ServiceDate | GuestName | RoomNumber | ServiceName | Quantity | Status

Report 2

* Shows services that have been requested but not yet fulfilled.
* Allows staff to prioritize and complete tasks.

**Example columns:**  
RequestTime | GuestName | RoomNumber | ServiceName | Quantity | AssignedStaff

Report 3

* Services completed by each staff member per shift/day. ( Làm hoặc không làm )
* Used for accountability and performance evaluation.

**Example columns:**  
StaffName | ServiceName | TotalCompleted | Date

Report 4

* Total value of services provided during a specific period (daily/weekly).
* Useful for tracking contribution of service staff to hotel revenue.

**Example columns:**  
ServiceName | Quantity | TotalRevenue | Period

* logout

### Housekeeping Staff (student 3)

* Update room status (clean, dirty, under maintenance).(workshop 2) giống tính năng trên
* Report and statics(assignment)

### 1. ****Daily Room Cleaning Report****

* List of all rooms cleaned today.
* Shows who cleaned the room, when, and what type of cleaning was done (regular, deep, post-checkout). ( Làm hoặc không làm )

**Example columns:**  
Date | RoomNumber | CleaningType | StaffName | Status (Completed/Pending)

### 2. ****Pending Cleaning Tasks****

* Rooms that need cleaning but haven’t been done yet.
* Includes **priority** (e.g., check-in at 2 PM → urgent).

**Example columns:**  
RoomNumber | Status (Dirty/Maintenance) | Priority | AssignedStaff

### 3. ****Room Status Report****

* Snapshot of all rooms and their statuses.
* Shows if the room is **Available, Occupied, Dirty, or Under Maintenance**.

**Example columns:**  
RoomNumber | RoomType | Status | LastCleanedDate | NextCheckIn

### 4. ****Maintenance Issue Report****

* Rooms with reported maintenance issues (broken AC, plumbing, etc.).
* Tracks issue description, status (Pending/Fixed), and assigned staff.

**Example columns:**  
RoomNumber | IssueDescription | ReportDate | Status | FixedBy

### 5. ****Housekeeping Staff Performance Report****

* Number of rooms cleaned by each staff member per shift/day.
* Helps evaluate staff workload and efficiency.

**Example columns:**  
StaffName | RoomsCleaned | DeepCleanings | Date

* logout

### Manager (student 2)

* **Manager Reports (assignment):**
  + Daily/Monthly/Yearly revenue report.
  + Top 10 frequent guests.
  + Most used services.
  + Room occupancy rate per month.
  + Cancellation statistics.
* logout

### Administrator (student 1)

* Manage staff accounts, Active staff accounts. (workshop 2)
* Configure system rules (tax rates, service categories). (workshop 2)
* logout

## 4. Business Rules

1. A room can be booked by **only one guest at a time** (no double-booking).
2. A booking must specify **check-in date, check-out date, and room type**.
3. A guest can book **multiple rooms**, but each booking generates a separate invoice.
4. Services must be linked to a **specific booking**.
5. A booking cannot be checked in **before payment guarantee (deposit/credit card)**.
6. A room’s status must be **clean and available** before being assigned.
7. Payment must include **room charges + service charges + taxes**.
8. A booking must be canceled before check-in date; otherwise, a **penalty fee** applies.
9. Invoices must be generated at **check-out**.

## 5. Deadline: evaluation at slot 1 of the 10th week