**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)
* Request additional services. (workshop 1)
* Make payments at checkout. (assignment)

### 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)
* Manage check-in and check-out. (workshop 1)
* Generate invoices for guests. (workshop 2)
* Assign rooms. (workshop 2)
* Logout

### Service Staff (student 3)

* Record service usage (food order, spa, laundry, etc.). (workshop 1)
* Update service completion status. (workshop 2)
* 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.
* 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)
* 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).

**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