

Course Code: MTH785

Course Name: Programming for Business Analytics

Project Topic: Hotel Management System

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1. Introduction

The Hotel Management System project integrates Microsoft Access, Excel, and VBA to streamline hotel operations, including room booking, customer management, and sales analysis. The database (HotelManagement.accdb) stores customer, room, and booking details, while the Excel front-end (HotelManagement.xlsm) allows users to interact with the data through forms, reports, and automated functions.

2. Database Structure

2.1 Tables

The Access database consists of three primary tables:

- **Customers** (CustomerID, Name, Contact, Email, Address)
- **Rooms** (RoomID, RoomType, Price, Status)
- **Bookings** (BookingID, CustomerID, RoomID, CheckInDate, CheckOutDate, TotalPrice)

2.2 Relationships

- The Customer's table is linked to Bookings via CustomerID.
- The Rooms table is linked to Bookings via RoomID.

2.3 Queries

Three main queries help retrieve essential business insights:

1. **Revenue Report** – Calculates the total revenue generated each Month.
2. **Booking Overview** – Lists all ongoing and upcoming bookings.
3. **Booking Form** – Saves the details and the room type that the customer wants to book according to the availability.

3. Excel Interface

The Excel workbook (HotelManagement.xlsm) includes three main worksheets:

3.1 Booking Summary

- Displays all bookings with conditional formatting for status (e.g., upcoming, completed).
- Data is pulled from the Access database using VBA.

3.2 Revenue Report

- A pivot table summarizing total revenue per Month.
- A pivot table is created on click of a button summarizing the total revenue for each month.

3.3 Booking Form

- Input fields for customer name, room type, check-in, and check-out dates.
- Uses dropdown lists for Customer Name and Room Type.
- Date validation ensures correct check-in and check-out dates.

4. VBA Functionality

The system includes several VBA macros to automate processes:

4.1 Import Data from Access

Sub ImportBookings()

Dim conn As Object, rs As Object, sql As String

Set conn = CreateObject("ADODB.Connection")

conn.Open "Provider=Microsoft.ACE.OLEDB.12.0;Data
Source=\HotelManagement.accdb;" // Update the file path here

sql = "SELECT * FROM Bookings"

Set rs = conn.Execute(sql)

Sheets("Booking Summary").Range("A2").CopyFromRecordset rs

rs.Close: conn.Close

End Sub

4.2 Booking Overview

Sub ImportBooking()

Dim custName As String

custName = Sheets("Booking Form").Range("B1").Value

Dim sql As String

sql = "SELECT * FROM Bookings WHERE CustomerID IN (SELECT CustomerID
FROM Customers WHERE Name='" & custName & "')" "

' Execute SQL and populate Booking Summary

End Sub

4.3 Insert New Booking

Sub SubmitBooking()

' Collect data from Booking Form and insert into Access database

' Validate input before updating database

End Sub

5. Conditional Formatting for Status

To visually distinguish booking statuses, the system uses colour codes:

- **Today** – Green
- **Next Week** – Yellow
- **Completed** – Red

6. Conclusion

This project successfully integrates Access, Excel, and VBA to create a functional hotel management system. The system enables efficient data management, real-time reporting, and automation of booking operations. Future improvements can include an enhanced user interface and extended reporting features.

Link for GitHub:

<https://github.com/Hemang417/HotelManagementSystem.git>