

Coastal Tourism Management System (CTMS)

The following is the design and implementation using Microsoft access.

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Abstract

The report describes the design and deployment of a Coastal Tourism Management System (CTMS) that was designed in Microsoft Access to apply to a tourism firm in Wales. The system handles tourist bookings, vacation packages, bookings, payments, events and feedbacks. The data integrity was achieved, redundancy was reduced and efficiency was enhanced using a relational database model. The CTMS offers accessible forms and automatic reports to enhance operational decisions and better customer services delivery in managing coastal tourism.

Introduction

Coastal tourism is a major economic driving force in terms of employment and generation of revenue. With the influx of tourists, the manual data handling system becomes unproductive and subject to mistake. A database management system ensures properly organized storage, speedy retrieval of data as well as safe management of customer information.

The present project is a development of a Coastal Tourism Management System (CTMS) of a fictional company known as Coastal Getaways. The system assists in the registration of the tourists, booking of vacation packages, and managing events, handling payments, and feedback.

Users and Departments

2.1 Types of Users

- Tourists: Subscribe, see packages, book and write comments.
- Database Administrator: Table, relationship and security management.
- Customer Service Personnel: Booking and customer queries.
- Manager of Event: Revise event information.
- Finance Officers: Pay and make revenue reports.

2.2 Departments

- Reservations Department: Handles the reservation and availability.
- Marketing Department: It deals with vacation packages and promotions.
- Customer Service Department: Responsible in complaints and reviews.
- Finance Department: Checks and balances check and balances.
- IT Department: Holds up and securing of the system.

Database Design

3.1 Entities

- Tourist
- Vacation Package

- Reservation
- Payment
- Event
- Feedback

3.2 Relationships

- Tourist - Reservation (1:M)
- Vacation Package - Reservation (1:M)
- Reservation - Payment (1:1)
- Tourist → Feedback (1:M)
- Vacation Package → Event (1:M)
- Vacation Package → Feedback (1:M)

Entity Relationship Diagram (ERD)-Textual Representation.

The database system is planned to be designed based on six major entities, namely, Tourist, Vacation Package, Reservation, Payment, Event, and Feedback.

One of the Reservations is made by a single tourist though he may have a lot of Reservations. This is a one to many between Tourist and Reservation.

A Reservation is associated with a Vacation Package, and more than one set of tourists can book a vacation package with the help of various reservations. This establishes one to many between Vacation Package and Reservation.

There is one payment record in each Reservation, and a payment is only associated with a single reservation. This is a one-to-one association between Reservation and Payment.

There can be a lot of Events in a Vacation Package, however, there is only one vacation package related to a certain event. This is a one-to-many association between Vacation Package and Event.

A Tourist is able to supply numerous Feedbacks, although the record of Feedback is furnished by single tourist. This is a one-to-many association between Tourist and Feedback.

Feedback records are associated with a single Vacation Package and a vacation package may have numerous feedbacks by various tourists. This is a one-to-many relationship between Vacation Package and Feedback.

All the bookings, payments, events, and feedback are effectively interconnected with each other using these relationships, which ensures that the system can efficiently control all the operations of the tourism business and that the data is accurate.

Warranty of Entities and Attributes.

- Tourist: Customer identity and contact information is stored.
- Vacation Package: Stores store descriptions and prices.
- Reservation: This is a connection between the tourists and the packages and also booking information.

- Payment: Documents payment.
- Event: Stores planned beach holidays.
- Feedback: Rating of the stores and comments to improve the services.

Records are uniquely identified by primary keys. Foreign keys guarantee data consistency among the tables.

Relational Schema

- Tourist (Tourist ID, Full Name, Email, Phone, Country)
- Vacation Package (Package Name, Description, Price per Person, Availability)
- Reservation (Reservation ID, Tourist ID, Package ID, StartDate, End Date, Number of Guests, Total Cost)
- Payment (Payment ID, Reservation ID, Payment Date, Amount, Payment Method)
- Event (Event ID, Package ID, Event Name, Event Date, Location)
- Feedback (Feedback ID, Tourist ID, Package ID, Rating, Comments)

Sample Data

Tourist

- 1, John Smith, john@gmail.com
, 0712345678, UK
- 2, Maria Lopez, maria@yahoo.com
, 0723456789, Spain
- 3, Ahmed Ali, ahmed@gmail.com
, 0734567890, UAE

Vacation Package

- 1, Beach Escape, 3-day holiday, 250, Yes
- 2, Coastal Adventure, Surfing and hiking, 350, Yes.
- 3, Family Seaside, Family package, 200, Yes.

Reservation

- 1, 1, 2, 01/08/2024, 05/08/2024, 2, 700
- 2, 2, 1, 10/08/2024, 13/08/2024, 1, 250
- 3, 3, 3, 15/08/2024, 18/08/2024, 4, 800

Payment

- 1, 1, 01/08/2024, 700, Card
- 2, 2, 10/08/2024, 250, Cash
- 3, 3, 15/08/2024, 800, Transfer

Event

- 1, 2, Surf Competition, 03/08/2024, Swansea
- 2, 1, Sunset Boat Tour, 11/08/2024, Tenby
- 3, 3, Sandcastle Festival, 16/08/2024, Rhyl

Feedback

- 1, 1, 2, 5, Amazing experience
- 2, 2, 1, 4, Very relaxing
- 3, 3, 3, 5, Perfect for family

Queries

Total Revenue Query

This query is applied to estimate the amount earned in terms of payment during a given date period. The system makes the user input a start date and an end date and the system will add up all the amount of payment made by the user in those two dates. This aids the management in tracking the revenue within a given time.

Feedback Report Query

This query brings out feedback information by integrating the information in the Tourist, Vacation Package, and Feedback tables. It shows the full name of the tourist, vacation package name, rating provided and comments made. This will enable the management to check customer satisfaction and judge the quality of the services provided.

Reservations Report Query

The query gives an elaborate list of reservations by connecting the Tourist, Vacation Package and Reservation tables. It displays the name of the tourist, package booked, dating and termination of the reservation date and the total price of the reservation. This report aids in the management of booking and efficient monitoring of customer reservations by staff.

Forms Design

- Reservation Form: Tourist and Package combo boxes, date pickers, field of number of guests, validation.
- Event Update Form: This is where event managers can update event name, date and location.

Reports Design

- Revenue Report: Shows total revenue during given time.
- Feedback Report: Shows ratings and comments of tourists.

Menu Design

There is a default main menu form which opens automatically and has buttons of:

- Tourist Registration
- Reservation Form
- Event Form
- Revenue Report
- Feedback Report
- Exit System

Significance of creating a CTMS.

Database enhances efficiency, accuracy and decision making as it automates bookings and the data is centrally stored. It decreases duplication and enhances the delivery of customer service (Elmasri and Navathe, 2016).

Benefits and Challenges

Benefits

- Faster data processing
- Reduced paperwork
- Improved accuracy
- Better reporting

Challenges

- Training staff
- Initial cost
- Data migration

Validation, access control, and backup are the mechanisms that help a DBMS to overcome these challenges (Connolly and Begg, 2015).

Conclusion

The CTMS shows how the concepts of relational database can be put into practical use concerning management of coastal tourism. The system improves efficiency, assists in the improvement of services, and allows making informed decisions.

References (APA 7th Edition)

Connolly, T., & Begg, C. (2015). Database systems: An introduction to the design, implementation, and management (6th ed.). Pearson.

Elmasri, R., & Navathe, S. (2016). Basic database systems (7th ed.). Pearson.

Silberschatz, A., Korth, H. F., and Sudarshan, S. (2019). The concepts of database systems (7th ed.). McGraw-Hill.