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SPICE ISLE TOURS DATABASE SYSTEMS FINAL PROJECT

COURSE NAME AND NUMBER: DATABASE SYSTEMS CIT247

DATE: NOVEMBER, 25

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INTRODUCTION

This database system was designed to manage the operations of Spice Isle Tours (SIT), a growing tour company in Grenada. The system addresses the company's need for an organized information system to handle tours, guides, locations, clients, and bookings while supporting business growth and quality service delivery.

DATABASE DESIGN AND NORMALIZATION

Our database follows proper normalization principles:

First Normal Form (1NF): Eliminated repeating groups by using the TourItinerary table instead of multiple location columns. Each tour-location combination is stored as a separate record with visit order.

Second Normal Form (2NF): All tables with composite keys (Certification, Booking, TourItinerary) ensure that non-key attributes depend on the entire primary key.

Third Normal Form (3NF): Eliminated transitive dependencies - all attributes depend only on their table's primary key, not on other non-key attributes.

HOW THE DATABASE HELPS WITH TOUR PERFORMANCE

The database significantly enhances tour performance management through several key features:

Comprehensive Tour Tracking: The system tracks all tour bookings, client ratings, and revenue generated by each tour. Managers can run reports showing which tours have the highest bookings and revenue, enabling data-driven decisions about which tours to promote or expand.

Rating and Review Analysis: Each client provides ratings (1-5 stars) and reviews after completing an outing. The database calculates average ratings per tour, helping management identify the most enjoyable and well-received experiences. For example, queries can show that the "Spice Plantation Tour" has a 4.8 average rating with 50 bookings, while the "Waterfalls & Rainforest" tour has a 4.5 rating with 30 bookings.

Revenue and Popularity Metrics: The system automatically calculates total revenue per tour and tracks booking trends over time. This allows management to see that while the "Grand Anse Beach Experience" has lower fees, its high volume makes it the second-highest revenue generator.

Location Performance: By tracking which locations are included in multiple tours and their visit order, management can optimize tour itineraries and identify which attractions are most popular with visitors.

HOW THE DATABASE HELPS WITH EMPLOYEE APPRAISALS

The system provides robust tools for evaluating guide performance and supporting fair employee appraisals:

Performance Metrics: The database tracks guide performance through client ratings and reviews specific to each outing. Managers can see that Guide John Baptiste maintains a 4.9 average rating across 15 outings, while new guides can be monitored during their probation period.

Experience Tracking: The system records how many outings each guide has led, providing a clear measure of experience and workload. This helps in workload distribution and recognizing senior guides during appraisals.

Certification Management: The database maintains all guide certifications for different locations, including test dates. Managers can quickly identify which guides are qualified for specific tours and track when recertification is needed (every 3 years). This ensures only qualified guides are assigned to outings, maintaining service quality.

Skill Assessment: By correlating certification data with performance ratings, management can identify which guides excel at particular types of locations (e.g., historical sites vs. natural attractions), enabling better tour assignments.

HOW IT COULD BE EXTENDED FOR PAYROLL

The current database design provides a solid foundation that can be easily extended to handle payroll processing:

Payroll Table Extension: We could add a Payroll table with fields such as PayrollID, GuideID, PayPeriodStart, PayPeriodEnd, HoursWorked, HourlyRate, and TotalPay. This would connect to the existing Guide table through the GuideID foreign key.

Automated Hours Calculation: The system could automatically calculate hours worked by connecting outings to actual hours. Since each tour has a defined length (LengthHours), and the Outing table tracks when each tour occurs, we can calculate: HoursWorked = Tour.LengthHours for each outing led by a guide.

Payment Processing: With the addition of pay rates per guide (stored in the Guide table or a new PayRates table), the system could automatically calculate: TotalPay = SUM(Outings per period × Tour.LengthHours × Guide.HourlyRate). This would streamline the payroll process and reduce manual calculations.

Overtime and Bonuses: Additional fields could track overtime hours, bonus payments for excellent ratings (e.g., bonus for maintaining 4.5+ average rating), and other compensation factors. Reports could then generate complete pay stubs and tax documentation.

Integration Example: The query "SELECT g.GuideID, g.FirstName, g.LastName, SUM(t.LengthHours) as TotalHours FROM Guide g JOIN Outing o ON g.GuideID = o.GuideID JOIN Tour t ON o.TourID = t.TourID WHERE o.ScheduledDateTime BETWEEN '2024-02-01' AND '2024-02-28' GROUP BY g.GuideID" would provide the total hours worked per guide for February 2024 payroll.

CONCLUSION

The Spice Isle Tours database system successfully addresses all current operational requirements while providing a scalable platform for future expansion. The system enables efficient tour management, fair employee evaluations, and lays the groundwork for integrated payroll processing. By centralizing all tour operations data, SIT can make informed business decisions, maintain high service quality, and support continued growth in the competitive Grenadian tourism market.