Raquet Club

Isabella Herrera| Huntington University | CS 415 Database Management – Fall 2025 - Final Project

Overview

- Company based in Fort Wayne that specializes in sports involving racquets, such as Tennis, pickleball, Paddle, and racquetball.
- The club offers multiple courts and coaching sessions for clients of all ages and experiences.
- The primary users of this database will be the company's analyst, financial team and service personnel.

User's perspective

- The service personnel can quickly view customers' upcoming courts and times, history, profile and weather a customer is new or returning. They can also check the availability of coaches, and identify open time slots for walk in sessions or last-minute appointments.
- allow the staff to create meaningful reports for management

Database Design

Coach
Personal information about the coaches: name, last name, and phone number.

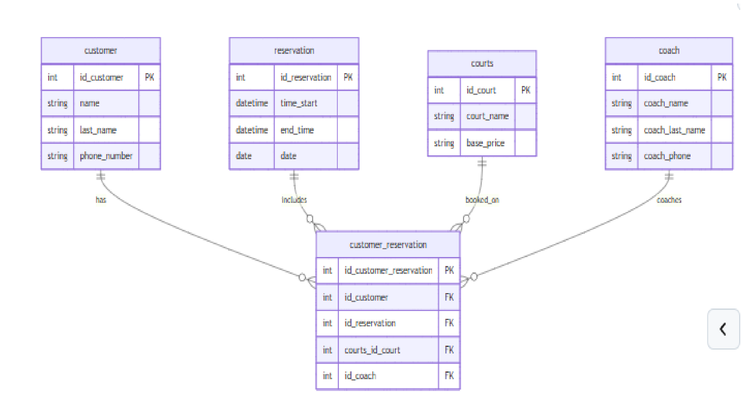
Courts
The courts table stores the courts_name and base_price. The base price is the amount the customer pays.

Reservation
The reservation table stores the start time, end time, and the date the reservation is occurring.

Customer
The customer table stores all the private information of the customer: first name, last name, and phone number.

Customer_reservation
This is the central table used to retrieve information about each customer reservation. This table stores four foreign keys from all other tables, allowing it to connect all the parts of the reservation.

ER Model



Data

Coach
- Id_coach

Courts
- Courts_id_courts

Reservation
- Id_reservation

Customer
- Id_customer

Customer_reservation
- Id_customer_reservation

Each table stores normalized, non-duplicated information that allows every reservation to be properly linked to complete customer, court, and coach details. Each table includes a primary key (PK), which is referenced as a foreign key (FK) in the **reservation** table. This structure ensures accurate relationships between tables and maintains data integrity across the entire system.

Queries

- **-- Query 4: Count reservations per customer and show only those with more than 2 reservations**

```
SELECT id_customer, COUNT(id_reservation) AS total_reservations
FROM customer_reservation
GROUP BY id_customer
HAVING COUNT(id_reservation) > 2;
```

-- Query 5: Join reservation, customer, coach, court to show reservations without coach

```
SELECT
  a.id_reservation,
  CONCAT(b.name, " ", b.last_name) AS "Customer",
  c.court_name,
  c.base_price,
  CONCAT(d.coach_name, " ", d.coach_last_name) AS "Coach"
  FROM customer_reservation AS a
JOIN customer AS b ON a.id_customer = b.id_customer
JOIN courts AS c ON a.courts_id_court = c.id_court
JOIN coach AS d ON a.id_coach = d.id_coach
LIMIT 20;
```

If we use left join then we can see all the reservations even if coach is NULL

-- Query 9: Create a view and then using it

```
CREATE VIEW total_revenue AS
SELECT
    a.courts_id_court AS courts_id_court,
    c.court_name AS court_name,
    SUM(c.base_price) AS Total_Revenue
FROM customer_reservation AS a
JOIN courts AS c
    ON a.courts_id_court = c.id_court
GROUP BY
    a.courts_id_court,
    c.court_name;

-- Use the view
SELECT * from total_revenue;
```

Reports

Name	Last Name	Court Reserved	Coach name	Reservation Number	Year	Month	Day
Olivia	Davis	Paddel	Jonathan	1	2024	July	19
Ava	Moore	Pickeball	Sophia	2	2024	January	22
Benjamin	Taylor	Tennis	Sophia	3	2023	November	25
Owen	Wright	Raquetball	Michael	4	2024	February	9
Aria	Hall	Pickeball	Emily	5	2023	August	17
Layla	Scott	Paddel	Jonathan	6	2024	March	2
James	Anderson	Raquetball	Laura	7	2024	December	11
John	Smith	Raquetball	Ethan	8	2024	May	28
Harper	Sanchez	Raquetball	Isabella	9	2023	March	8
James	Anderson	Raquetball	Emily	10	2023	February	3
Ava	Moore	Raquetball	Jonathan	11	2025	May	3

Number of courts reserved in 2025

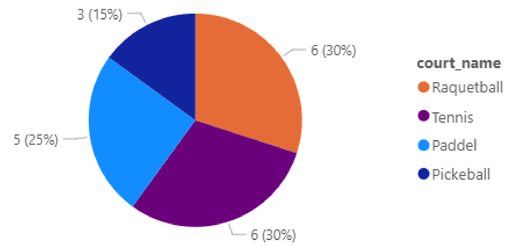


Chart #1
- Displays detailed reservation information, including the customer's first and last name, the court reserved, whether a coach was required, and the full reservation date (year, month, and day)

Chart #2
- Represents the number of courts reserved by customers in the year 2025. This visualization is useful for identifying trends across the three sports offered and helps determine which one is the most popular.

Future Work

Several opportunities exist for future development of this project.

- Implementing stored procedures or triggers to automatically calculate reservation pricing would improve consistency and reduce human error.
- Data constraints, such as preventing double booking of courts or coaches, would strengthen data integrity.
- Expanding the system to include payment management, membership tiers, and automated billing would create a more complete operational environment.
- integrating a user interface or reporting module would support staff decision-making by providing real-time access to schedules, usage statistics, and customer information.

Works Cited

- OpenAI. (2025). *ChatGPT (GPT-5.1)* [Modelo de lenguaje]. https://chat.openai.com