State & Props Apps

Case Study 1: Online Food Ordering System

Scenario:
A customer browses a food delivery app. They can add food items to a cart, see the total cost, and finally place an order.

- **State**:
  - Track selected food items in the cart.
  - Track quantity of each item.
  - Track total bill amount dynamically.

- **Props**:
  - Pass food item details (name, price, description) from parent (Menu) to child (FoodCard).
  - Pass event handlers (e.g., `addToCart`) to children for updating state in the parent.

- **Outcomes**:
  - When a user clicks "Add to Cart", the cart updates instantly.
  - Cart summary updates total price automatically.
  - FoodCard doesn't manage the cart but informs parent using props.

Case Study 2: E-Learning Platform (Course Enrollment)

Scenario:
A student logs into an e-learning site, views available courses, and enrolls in some.

- **State**:
  - Track enrolled courses list.
  - Track whether a course is marked as "favorite".
  - Store progress (e.g., 40% completed).

- **Props**:
  - Pass course details (title, author, duration) from parent CourseList to child CourseCard.
  - Pass enrollment status from parent to child so CourseCard shows "Enroll" or "Already Enrolled".

- **Outcomes**:
  - Students see available vs. enrolled courses clearly.
  - Clicking "Enroll" updates state in parent and re-renders child.
  - Progress bar updates dynamically.

Case Study 3: Movie Ticket Booking

Scenario:
A user books tickets for a movie by selecting seats and confirming the booking.

- **State**:
  - Track selected seats.
  - Track number of tickets.
  - Track booking confirmation status.
- **Props**:
  - Pass movie details (title, timing, price per seat) from parent to child SeatSelector.
  - Pass selected seats from parent to a child Summary component to display the total cost.
- **Outcomes**:
  - User selects seats, and they immediately appear in the summary.
  - If more seats are added, total cost updates dynamically.
  - After confirmation, booking status changes to "Confirmed".

Case Study 4: Fitness Tracker Dashboard

Scenario:
A fitness app tracks user workouts (steps, calories burned, water intake).

- **State**:
  - Track number of steps walked.
  - Track calories burned.
  - Track water intake (glasses).
- **Props**:

- Parent passes user details (name, age, weight) to child components like StepsTracker, CaloriesTracker.

- Child components send updates (via event handler props) to parent which manages all stats.

- **Outcomes**:

  - Steps, calories, and water intake update live.

  - The parent dashboard displays a combined summary.

  - Each tracker shows only its metric, but parent shows full progress.

Case Study 5: Hotel Room Reservation

Scenario:
A hotel booking website lets customers select rooms, choose dates, and view total price before confirming.

- **State**:

  - Track check-in and check-out dates.

  - Track number of rooms selected.

  - Track total price calculation.

- **Props**:

  - Pass room details (type, price per night, availability) from parent RoomList to RoomCard child.

  - Pass reservation details (dates, selected rooms) to a child Summary component.

- **Outcomes**:

  - If a user changes dates, price updates instantly.

  - RoomCard highlights when selected.

  - Summary component shows booking details before payment.