DEPARMENT RESOURCE BOOKING SYSTEM

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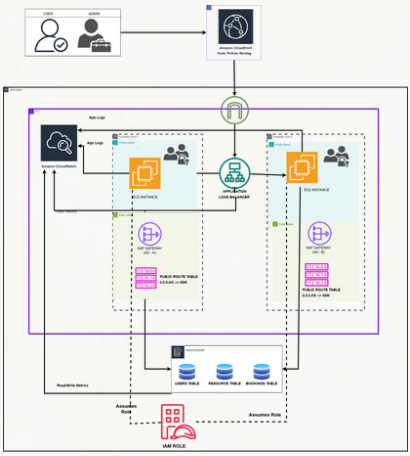
PROBLEM STATEMENT:

University resource booking through manual paper-based systems causes double bookings, scheduling conflicts, and lack of real-time visibility. Students and staff face long queues and administrative delays, leading to frustration and reduced productivity.

SOLUTION OVERVIEW

We developed a Departmental Resource Booking System that solves manual booking problems like double booking and lack of real-time visibility. It's a Full-Stack Cloud Application with a React (frontend) and Node.js (backend), hosted on AWS EC2. Data is stored in Amazon DynamoDB for secure and fast retrieval.



3. TECHNICAL IMPLEMENTATION

The application uses a Decoupled Architecture where frontend and backend run as separate processes. Deployed in AWS VPC with Public Subnet and Internet Gateway. Security is handled by AWS Security Groups allowing only essential ports: Port 22 (SSH), Port 3000 (React), and Port 5000 (Node.js API).

KEY FEATURES

Real-time Availability: Users can instantly check if labs, rooms, and equipment are available

Automated Booking: After secure login, users submit booking requests that are automatically validated by the backend

Admin Dashboard: Admins can manage pending bookings and update resource status

24/7 Cloud Access: Deployed on AWS for anytime, anywhere accessibility