

MakeMyTrip Search Flow - 3 Tier Architecture

1. Presentation Tier (Frontend / Client-Side)

- User MakeMyTrip website / mobile app kholta hai.
- User origin, destination, dates select karta hai aur **Search button** press karta hai.
- Ye sab actions UI (HTML, CSS, JavaScript, React/Angular) ke through hoti hain.
- Frontend ka kaam sirf user se input lena aur backend ko request bhejna hai.

Example: User enters "Delhi → Mumbai, 24th Aug"

2. Application Tier (Backend / API Layer)

- Search button dabane ke baad frontend request ko Backend API ke paas bhejta hai.
- API ek "Middle Layer" hai jo **business logic** handle karti hai.
- Backend me multiple services hoti hain:
 - Flight Search Service (Airline APIs se connect hoti hai)
 - Hotel Search Service (Hotel DB/APIs se connect hoti hai)
 - Bus/Train Search Service (Respective APIs se connect hoti hai)
- Backend input process karta hai, validation karta hai (date sahi hai ya nahi, city exist karti hai ya nahi).
- Backend DB ko query karta hai ya external airline/hotel ke APIs ko call karta hai.

Example: API query karta hai "24th Aug ko Delhi → Mumbai flights available hain kya?"

3. Data Tier (Database / External APIs)

- Backend ke paas khud ka Database hota hai (Flights ka cached data, Hotel inventory, User bookings).
- Saath hi MakeMyTrip backend external airlines/hotels ke APIs call karta hai (IndiGo, Air India, Vistara, OYO, Marriott etc.).
- DB/API results backend ko return karte hain.

Example: Database se milta hai ki 20 flights available hain + external airline APIs se real-time prices.

Flow Back (Response to User)

1. Data tier (DB + APIs) se results backend ko milte hain.
2. Backend results ko filter karta hai (cheapest, fastest, recommended).
3. Backend results ko JSON response me convert karke frontend ko bhejta hai.
4. Frontend us response ko UI me convert karta hai (cards, tables, filters).
5. User ko screen par available flights/hotels dikhaayi dete hain.

Simple Mapping:

- Presentation Tier = Website / App (User ke samne UI)
- Application Tier = Backend APIs (Business Logic, Search Engine, Filters)
- Data Tier = Database + Airline/Hotel APIs (Actual data storage + external integration)