|  |  |
| --- | --- |
| *Airlines Fare & Route Analysis*  [Tableau project] | AbstractThe Flights Booking Dataset of various Airlines is a scraped date wise from a famous website in a structured format. The dataset contains the records of flight travel details between the cities in India. Here, multiple features are present like Source & Destination City, Arrival & Departure Time, Duration & Price of the flight etc.Muhammed Aslam k |

**Tableau Project Report**

**Project Title:** *Airlines Fare & Route Analysis*   
**Author:** Muhammed Aslam  
**Tool:** Tableau  
**Dataset Size:** 300,153 records, 12 columns  
**Dataset Source:** Kaggle

## ****1. Project Objective****

The objective of this project is to analyze airline ticket pricing, flight routes, and performance metrics across major Indian cities.  
Using Tableau, two interactive dashboards were created to:

* Identify popular and high-performing routes
* Compare ticket pricing patterns by airline and class
* Study flight duration differences by stops
* Evaluate airline market share by flight frequency
* Display fare distribution by city and airline

## ****2. Dataset Overview****

| **Column** | **Description** |
| --- | --- |
| airline | Airline name |
| flight | Flight number |
| Source city | Departure city |
| Departure time | Time of day (categorical) |
| stops | Number of stops |
| Arrival time | Time of arrival (categorical) |
| Destination city | Arrival city |
| class | Economy or Business |
| duration | Flight time in hours |
| Days left | Days until departure |
| price | Ticket price (₹) |

## ****3. Key Analyses & Visuals****

### ****Dashboard 1 – Airlines Fare Analysis****

1. **Minimum Ticket Price by Origin City**
   * Kolkata has the highest minimum fare (₹1.1K).
   * Possible causes: demand variation, operational costs, competition.
2. **Average Ticket Price by Airlines and Travel Class**
   * Business fares: Vistara highest (₹47K).
   * Economy fares: AirAsia lowest (₹5K).
3. **Average Ticket Price by Airline and Destination**
   * Kolkata, Mumbai routes are most expensive (₹31K–₹34K average).
   * Hyderabad and Delhi routes are comparatively cheaper.

### ****Dashboard 2 – Airline Route & Performance Analysis****

1. **Top 5 Most Popular Routes**
   * Delhi → Mumbai (15.29K flights) is the busiest route.
   * Other high-traffic routes: Mumbai ↔ Delhi, Delhi → Bangalore, Bangalore ↔ Delhi, Bangalore → Mumbai.
2. **Number of Flights by Airline**
   * Vistara leads with 127,859 flights (~43% of total).
   * Air India follows with 80,892 flights (~27% of total).
   * SpiceJet operates the least (~9,011 flights).
3. **Stops vs Average Duration**
   * Non-stop flights: 2.19 hrs (fastest).
   * 1 stop: 13.5 hrs, 2+ stops: 15.3 hrs (significantly longer).
4. **Top 10 Most Expensive Flights**
   * All belong to Vistara, ranging from ₹1.11L to ₹1.23L.
   * Suggests premium, possibly international or business-heavy routes.
5. **Departure Time vs Arrival Time (Heatmap)**
   * Evening arrivals are frequent across multiple departure times.
   * Peak traffic patterns vary by airline and route.

## ****4. Insights****

* **High-demand routes** (e.g., Delhi–Mumbai) dominate flight volume, indicating business and tourism hubs.
* **Premium pricing** is concentrated in business class and select airlines (Vistara, Air India).
* **Non-stop flights** provide massive time savings compared to multi-stop itineraries.
* **Market share** is highly concentrated among Vistara and Air India.
* **Regional pricing** shows Kolkata and Mumbai as high-fare markets.

## ****5. Recommendations****

1. **Dynamic Pricing Strategy** – Adjust fares on high-demand routes to maximize revenue during peak travel periods.
2. **Time Efficiency** – Promote non-stop flights to appeal to time-sensitive travelers.
3. **Expand Budget Options** – Add low-cost carriers on high-fare routes like Kolkata and Mumbai to increase accessibility.
4. **Route Development** – Increase service on mid-demand routes (e.g., Bangalore–Mumbai) to spread load and capture growth.
5. **Loyalty Programs for Premium Travelers** – Airlines like Vistara and Air India should target frequent flyers with business-class perks.

## ****6. Conclusion****

This Tableau project provides a clear, interactive view of airline fare structures, route popularity, and operational performance.  
The dashboards allow users to filter by airline, class, flight type, and price category, enabling targeted insights for strategic decision-making in the airline industry.