Cracking the PM interview 🚀

Case Study Solution (Method 1) - Estimate the average number of daily flights (landing and take-off) at Mumbai airport in India.

Case study - **Guesstimate**

Estimate the average number of daily flights (landing and take-off) at Mumbai airport in India

Solution (Method 1) - Estimate the daily flights at Mumbai airport

In this method, let's start with total passengers catered by Mumbai airport on a daily basis.

A quick search gives us an estimate that Mumbai airport caters to almost 50 million passengers annually.

On a daily basis, this translates to

→ 50 million/360

→ 138,889 passengers/day

~140k passengers/day (for the sake of simplicity)

Now, let's bifurcate the traffic coming in and going out from Mumbai airport by aircraft carrier (this should be close to domestic vs international traffic; however, some of the international traffic may be going through mid-sized domestic aircrafts as well).

Solution (Method 1) - Estimate the daily flights at Mumbai airport

International traffic (large-sized carrier with a seating of ~400 passengers) = 15% of total daily flights

Domestic traffic (mid-sized carrier with a seating of ~200 passengers) = 80% of total daily flights

Private traffic (chartered planes with a seating of ~12 passengers) = 5% of total daily flights

*Chartered planes have been considered because of the Mumbai airport. For smaller cities, you may skip this.

Now, the average seat utilization for different flights would be as below:

International flights = 75%

Domestic flights = 90%

Chartered flights = 50%

Solution (Method 1) - Estimate the daily flights at Mumbai airport

Total daily passengers =
(Total flights * International percentage * international flight seat utilization rate * capacity utilization) +
(Total flights * Domestic percentage * domestic flight seat utilization rate * capacity utilization) +
(Total flights * chartered percentage * chartered flight seat utilization rate * capacity utilization)

⇒ 140k = Total flights * [(15% * 400 * 75%) + (80% * 200 * 90%) + (5% * 12 * 50%)]

⇒ 140k = Total flights * (45 + 144 + 0.3)

⇒ Total daily flights = 140k / 189.3 ~ 750 flights per day

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Thank you!