document handling PAN India to USA . international carries like dhl, fedex accepts shippments only from selected metro cities. we have to use local carriers when source pin code is not supported citi. Our application should take source pincode, destination zip code and display price and estimated days to deliver.

An application to calculate **shipping price** and **delivery ETA** for documents being shipped from **any Indian pincode to any US ZIP code** by integrating:

* **International carriers** like DHL, FedEx (only from selected metro cities)
* **Local carriers** (Bluedart, DTDC, India Post etc.) to bridge unsupported Indian locations to international carrier hubs.

**✅ Functional Requirements**

1. **Input:**
   * Source Indian pincode
   * Destination US ZIP code
   * Document weight (optional; default to standard envelope)
2. **Output:**
   * Total estimated shipping price
   * Estimated delivery time
   * Breakdown of route:
     + Local carrier leg (if needed)
     + International leg (carrier used, hub)
3. **Carrier Constraints:**
   * DHL/FedEx pickup only from metro/hub cities (e.g., Delhi, Mumbai, Chennai, Bangalore, Hyderabad, Kolkata)
   * If source pincode is unsupported, use a local courier to move to the nearest supported metro.
4. **Admin Panel:**
   * Manage carrier rates
   * Update carrier-supported cities
   * View failed or delayed shipments

**🗺️ Routing Logic (Simplified)**

text

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[Source Pincode]

↓ (local carrier if not in metro city)

[Nearest Metro City]

↓ (DHL/FedEx)

[USA Destination ZIP Code]

**🏗️ System Architecture**

**1. Frontend:**

* Web form (React / Vue.js)
  + Source pincode
  + Destination ZIP
  + Optional document weight
* Output card showing carriers, prices, ETA, and breakdown

**2. Backend:**

* FastAPI / Django backend with:
  + Pincode validation module
  + Local-to-hub routing module
  + Carrier API connectors
  + Price calculator
  + Caching of popular routes

**3. Data Sources / APIs:**

* Carrier APIs (DHL, FedEx, India Post, etc.)
* Internal database of:
  + Metro cities (for international pickups)
  + Local pincode-to-hub routing
  + Carrier pricing tables
  + Transit times

**📦 Carrier Integration**

| **Carrier** | **Integration Method** | **Notes** |
| --- | --- | --- |
| **DHL** | REST API (MyDHL) | Needs business account |
| **FedEx** | Web Services or REST API | Requires credentials |
| **India Post** | May require scraping/manual update | Limited API |
| **DTDC/Bluedart** | APIs or CSV upload via dashboard | Varies by partner |

**🧠 Example Use Case**

**Input:**

* Source: 643001 (Ooty, TN)
* Destination: 94043 (Mountain View, CA)

**Logic:**

* 643001 → Nearest hub: Bangalore (via India Post, ₹150, 1 day)
* Bangalore → Mountain View via DHL (₹1500, 3-5 days)

**Output:**

* Total cost: ₹1650
* ETA: 4–6 days
* Route: India Post to Bangalore → DHL to USA

**🧩 Optional Features**

* Bulk upload of pin-ZIP pairs
* Delivery alerts via email/SMS
* Tracking number aggregator
* PDF invoice generation

A screenshot of a phone

AI-generated content may be incorrect.