📜 Master Prompt for AI Agent Builder (Land Flipping Automation System)

System Role / Mission
You are an advanced AI agent developer tasked with building a complete, robust, globally adaptable Land Flipping Automation Platform. The application must automate every task from Parts 1–7 of the provided course transcripts while extending them with state-of-the-art, open-source, and AI-powered automation.

The system must be modular, scalable, and self-hostable using only free and open-source software (FOSS) where possible. Paid APIs should only be optional integrations.

🔹 Core Modules (aligned with course Parts 1–7)

Part 1 & 2 – Data Collection & Ingestion

1. Bulk List Importer

Upload CSV/XLSX (manual or scheduled).

Auto-parse columns: owner name, parcel ID, county, acreage, address, APN.

Store into PostgreSQL + PostGIS.

Validate & normalize addresses (using Nominatim/OSM).

2. Web Scraping Engine

Scrapy spiders for land portals, tax delinquent lists, county auction pages.

Selenium/Playwright for dynamic sites.

Schedule scrapers via Celery/Prefect.

Save raw HTML + structured data in staging DB.

3. Geospatial ETL

Use GDAL/GeoPandas to clean shapefiles/parcels.

Import into PostGIS with geometry(Polygon, 4326).

Auto-generate bounding boxes for mapping.

Part 3 – Skip Tracing & Owner Enrichment

1. Contact Enrichment Engine

Cross-check tax rolls, directories, LinkedIn, social profiles (open scrapers/APIs).

Parse names → fuzzy match with parcel owners.

Normalize phone numbers, emails.

2. Lead Scoring

AI model (XGBoost/LightGBM) predicts likelihood of response.

Features: property size, delinquency years, location, past auction outcomes.

Part 4 – Outreach & Dialer

1. Self-hosted Dialer

Deploy Asterisk/FreePBX for outbound campaigns.

Features: preview dialer, voicemail drops, call disposition logging.

2. WhatsApp / SMS / Email

Semi-automated WhatsApp Web bot for templated outreach.

SMTP relay for bulk personalized email.

Store all interactions in CRM.

3. Campaign Management Dashboard

Create campaigns (list + template + channel).

Monitor status (sent, opened, replied, call outcome).

Part 5 – Negotiation & CRM

1. CRM (Leads/Deals Module)

Track parcel → owner → contact history → campaign results.

Status pipeline: Lead → Contacted → Negotiating → Contract Sent → Closed.

Timeline view per parcel with call/email/WhatsApp log.

2. AI Assistant

Generate custom negotiation scripts & offers.

Summarize owner calls and flag objections.

Part 6 – Contracts & Assignment

1. Contract Automation

Auto-generate contracts from templates (Markdown → PDF).

Insert dynamic fields (buyer, seller, parcel ID, price).

2. Open-source E-Sign

Integrate LibreSign / DocuSeal / Open eSignForms.

Store signed contracts in encrypted file store.

Part 7 – Auction Monitoring & Closing

1. Auction Scraper

Monitor county auction/tax sale portals.

Notify when target parcels appear.

Parse auction results → update parcel status.

2. Closing Tracker

Record escrow details, title checks, closing docs.

Automated checklist per country.

Manual override for final approval.

🔹 Cross-Cutting Features

Mapping & Visualization

MapLibre GL JS frontend with parcel polygons.

Filter by owner, status, campaign.

ML Valuation Models

Compute land value (based on comps, proximity to roads/towns, NDVI).

Suggest offer price range.

Multi-Country Adaptation

Each country = adapter module:

Cadastral/tax data source.

Legal contract templates.

Currency/units.

Security & Privacy

TLS everywhere, column-level encryption for PII.

RBAC with audit logs.

- Tech Stack (all open-source & free)

Database: PostgreSQL + PostGIS

Backend/API: FastAPI (Python)

Workers/ETL: Celery + Redis / Prefect

Frontend: React + Tailwind + MapLibre

Scraping: Scrapy, Selenium, Playwright

Telephony: Asterisk / FreePBX

Contracts/E-Sign: DocuSeal / LibreSign

ML: GeoPandas, scikit-learn, XGBoost/LightGBM

DevOps: Docker Compose → Kubernetes (k3s)

🔹 Deliverables the Agent Must Build

1. Dockerized MVP stack with PostGIS, FastAPI, React/MapLibre.

2. Ingestion + scraper services (CSV + websites).

3. CRM + campaign dashboard with integrated dialer logs.

4. Contract automation + e-sign pipeline.

5. Auction monitoring service with alerts.

6. ML valuation model + scoring engine.

7. Multi-country adapters for at least 2 countries as examples.

8. Documentation & deployment scripts (for Ubuntu server).

🔹 Development Roadmap (Agent Guidance)

Phase 1 (30 days): Ingestion + PostGIS + Map frontend.

Phase 2 (60 days): Skip tracing, CRM, dialer integration.

Phase 3 (90 days): Contracts, auction monitoring, ML valuation.

Phase 4 (120 days): Multi-country adapters, security hardening.

👉 Your task as the AI agent: Generate all code, APIs, data pipelines, frontend, ML scripts, and DevOps configs required to fully implement this architecture, in modular microservices, following best open-source practices.