Sales Intelligence Agent System

Complete System Design Document

For Developer Handoff

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1. What We Are Building

An AI-powered sales intelligence system that sits on top of Zoho CRM and does three things:

#	Function	What It Means
1	**Prioritize**	Tells each sales rep exactly which lead to call first, second, third — with reasons
2	**Research & Advise**	Rep clicks a lead → AI researches the company, reads all CRM notes, and suggests how to close the deal
3	**Alert & Report**	Daily morning briefs, stale lead alerts, weekly performance reports — via WhatsApp + Email + Dashboard

20 sales reps get their own dashboard. Managers see all. Founder sees everything + analytics. The system thinks for the team.

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2. Tech Stack (Final)

Layer	Tool	Why This One	Est. Cost/Month
Agent Brain	LangGraph (Python)	Best for stateful, multi-step AI workflows with branching	Free (open source)
LLM	Claude API (Sonnet 4.5)	Best reasoning + cost efficient. Fallback: GPT-4o	$30-80
Backend API	FastAPI (Python)	Async, fast, perfect for AI + API serving	Free
Database	Supabase (PostgreSQL)	Auth, real-time, row-level security, generous free tier	Free-$25
Frontend	React + Tailwind + shadcn/ui	Modern, fast, mobile-ready, beautiful components	Free
Auth & Roles	Supabase Auth	Email login, role-based access, built-in	Included
CRM Data	Zoho CRM REST API v8	Full access to leads, deals, notes, activities	Included in plan
WhatsApp	Gupshup or Twilio	Reliable in India, API-friendly	₹2-5K

Email Alerts	Resend or Zoho Mail API	Transactional emails, free tier available	Free-$20
Hosting	Railway (backend) + Vercel (frontend)	Simple deploy, auto-scaling, good free tiers	$10-30
Monitoring	LangSmith	Trace every AI decision, debug easily	Free tier
Scheduler	APScheduler / Celery	Runs agent pipeline on schedule (8 AM daily, etc.)	Free

Total estimated cost: ₹5,000-12,000/month for infrastructure. The main cost is developer time to build.

3. How Data Flows

Simple flow, step by step:

#	Step	Detail
1	Zoho CRM API Pull	Every 2 hours: fetch all leads, deals, contacts, notes, activities, call logs from Zoho
2	Store in Supabase	Raw CRM data stored in PostgreSQL. Historical data preserved for trend analysis.
3	LangGraph Agent Runs	Scheduled at 7:30 AM daily. Agent scores leads, ranks priority, generates briefs.
4	Enriched Data Stored	AI scores, priority rankings, recommendations saved back to Supabase.
5	Dashboard Reads	React dashboard pulls enriched data from Supabase via FastAPI. Real-time via WebSocket.
6	Alerts Sent	Morning brief → WhatsApp + Email. Urgent alerts → WhatsApp instantly.
7	Rep Takes Action	Rep calls lead, logs notes in Zoho CRM. Next sync picks up the new data.

Key principle: Zoho CRM remains the source of truth. Reps keep working in Zoho. The dashboard is the intelligence layer on top.

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4. LangGraph Agent Design

The agent is a graph with nodes. Each node does one specific job. Data flows through the graph as state.

4.1 The Daily Pipeline Agent (Runs at 7:30 AM)

This agent runs automatically every morning before the team starts work:

#	Node	What It Does	Uses AI?
1	**Fetch CRM Data**	Pulls all open leads, deals, recent notes, activities from Zoho API	No — API call
2	**Score Leads**	AI reads each lead's data + notes + history. Assigns Hot/Warm/Cold score with reason.	Yes — Claude
3	**Rank Priority**	Takes scored leads per rep. Creates ordered call list: "Call #1, #2, #3..."	Yes — Claude

#	Node	What It Does	Uses AI?
4	Detect Stale Leads	Finds leads with no activity for 7+ days. Flags as urgent.	No — Logic
5	Detect Anomalies	Compares this week vs last: drops in activity, sudden changes in pipeline.	Yes — Claude
6	Generate Briefs	Creates personalized morning brief for each rep + summary for manager.	Yes — Claude
7	Save Results	Stores all scores, rankings, briefs in Supabase.	No — DB write
8	Send Alerts	Sends morning brief via WhatsApp + Email to each rep.	No — API call

4.2 The Research Agent (On-Demand, When Rep Clicks)

This is the killer feature. When a rep clicks "Research This Lead" on the dashboard:

#	Node	What It Does	Uses AI?
1	Gather CRM Context	Pulls ALL notes, call logs, emails, deal stage, every touchpoint from Zoho for this lead.	No — API call
2	Web Research	Searches the web for the company: what they do, recent news, projects, size, decision makers.	Yes — Claude + Search
3	Analyze Notes	AI reads every note, every call summary. Understands: what was discussed, objections raised, interest level, pain points.	Yes — Claude
4	Match Past Wins	Finds similar leads that were WON in the past. What worked? What approach closed them?	Yes — Claude
5	Generate Close Strategy	Outputs a clear recommendation: "Here's how to close this deal" with talking points, pricing suggestion, objection handling.	Yes — Claude
6	Save & Display	Saves research to DB. Shows on dashboard as a clean "Intel Card" for the rep.	No — DB/UI

What the rep sees after clicking "Research": A clean card on dashboard showing: Company overview, key contacts, all past interaction summary, what the lead cares about, objections to prepare for, recommended close approach, similar deals that won, suggested next step and talking points.

Response time target: 15-30 seconds. The agent runs in the background, the dashboard shows a loading state, then the intel card appears.

4.3 The Smart Assignment Agent (When New Lead Arrives)

When a new lead enters Zoho CRM:

- Agent detects new lead via Zoho webhook or scheduled sync
- AI checks: lead industry, geography, deal size, source
- AI checks: which rep has capacity, who has best track record with similar leads
- Assigns lead to best-fit rep
- Sends WhatsApp alert to rep: "New lead assigned: ABC Corp, construction company, Rs 50L potential. Research ready."

4.4 The Weekly Report Agent (Every Monday 8 AM)

Generates a comprehensive weekly intelligence report for the founder:

- Pipeline summary: total leads, new this week, converted, lost
- Per-rep performance: calls made, conversion rate, average deal size
- Source analysis: which lead sources convert best
- AI insights: "Cold calling conversion dropped 30% this week. Website leads are 3x better. Shift focus."
- Revenue forecast: expected closings this month based on pipeline health
- Delivered via Email + available on dashboard

5. Dashboard Screens

Screen 1: Sales Rep Dashboard ("My Leads")

Each of the 20 reps sees ONLY their assigned leads when they log in.

Section	What It Shows
Today's Call List	AI-ranked priority list. #1, #2, #3... with reason: "Hot lead, demo done, no follow-up 3 days"
All My Leads	Table: Lead name, company, source, stage, last activity, AI score (Hot/Warm/Cold), days since contact
Lead Detail View	Click any lead → full timeline, all notes, AI research card, close strategy
"Research This Lead" Button	One click → AI runs research agent → shows intel card with company info + close strategy
Quick Actions	Mark as: Called / Not Reachable / Meeting Scheduled / Won / Lost. Syncs back to Zoho.
My Stats	Calls this week, conversion rate, leads in pipeline, target vs actual

Screen 2: Manager / Team Lead Dashboard

Team leads see their team's performance. Founder (Sumit) sees all teams.

Section	What It Shows
Team Overview Cards	Each rep as a card: name, leads assigned, calls today, conversion rate, Red/Yellow/Green status
Pipeline Funnel	Visual funnel: New → Contacted → Demo → Proposal → Negotiation → Won/Lost. With numbers.
Stale Leads Alert	List of all leads with no activity 7+ days. Sorted by value. One-click reassign.
AI Insights Panel	AI-generated observations: "Ravi has 12 hot leads but only made 3 calls. Amit's leads are aging fast."
Revenue Forecast	Expected revenue this month based on pipeline, conversion rates, and deal stages.
Drill Down	Click any rep → see their full lead list, same as their personal dashboard.

Screen 3: Lead Intelligence View

When anyone clicks on a specific lead, this is the deep-dive screen:

Section	What It Shows

Lead Summary	Company name, contact, phone, email, source, stage, deal value, assigned rep
AI Score & Reason	Hot/Warm/Cold + AI explanation: "Hot because: demo completed, asked for pricing, engaged on 3 calls"
Complete Timeline	Every interaction: calls, emails, WhatsApp messages, notes, meetings. Chronological.
Notes Summary (AI)	AI reads ALL notes from Zoho and creates a summary: key topics, objections, interests, promises made
Research Card	Company info, recent news, projects, team size, decision makers (from web research)
Close Strategy (AI)	AI recommendation: how to close, what to say, pricing approach, objection handling, similar won deals
Similar Past Deals	Deals with similar profile that were Won. What approach worked. Reference for the rep.

Screen 4: Analytics & Reports

Section	What It Shows
Conversion Trends	Weekly/monthly chart: leads → conversions over time
Source Analysis	Which lead sources (website, cold call, referral, ads) perform best
Rep Leaderboard	Ranked by conversion rate, revenue generated, response time
Deal Velocity	Average days from lead → close. Per source, per rep, per deal size.
AI Weekly Brief	Full AI-generated weekly report with insights and recommendations
Revenue Forecast	Projected revenue for current month and next quarter based on pipeline health

Screen 5: Admin Settings

- User management: add/remove reps, assign roles
- Lead assignment rules: auto-assign logic, round-robin settings
- AI scoring weights: which factors matter more (recency, deal size, engagement)
- Alert settings: who gets what alerts, via which channel
- Zoho CRM connection: API keys, sync frequency, module selection

6. Role-Based Access

Screen	Sales Rep	Team Lead	Manager	Founder	Admin
My Leads	Own only	Team only	All teams	All	All
Team Pipeline	—	Own team	All teams	All	All
Lead Intelligence	Own leads	Team leads	All leads	All	All
Analytics	Own stats	Team stats	All stats	All	All
Admin Settings	—	—	—	View	Full access
Research Agent	Own leads	Team leads	All	All	All

Access is enforced at the database level using Supabase Row Level Security (RLS). Even if someone tries to hack the URL, they cannot see data they shouldn't.

7. Alert System (WhatsApp + Email)

Trigger	Message	Channel	Who Gets It
Daily 8 AM	Morning brief: your top 5 leads to call today with reasons	WhatsApp + Email	Each rep
New lead assigned	"New lead: ABC Corp. Rs 20L potential. Construction. Research ready."	WhatsApp	Assigned rep
Lead stale 7+ days	"3 leads have gone cold. Call them today or they may be lost."	WhatsApp	Assigned rep
Lead stale 14+ days	"Escalation: 5 leads with zero activity in 2 weeks."	WhatsApp + Email	Rep + Manager
Hot lead no follow-up 3 days	"URGENT: Hot lead XYZ Corp had demo but no follow-up. Call now."	WhatsApp	Rep + Manager
Deal won	"Congratulations! Deal closed: ABC Corp, Rs 15L."	WhatsApp	Rep + Team

| Monday 8 AM | Weekly performance report + AI insights | Email | Founder + Managers |
| Rep performance drop | "Amit's conversion rate dropped 40% this week. Review needed." | Email | Manager |

WhatsApp for: Time-sensitive, actionable alerts that need immediate attention. Short messages.

Email for: Reports, weekly summaries, detailed analysis. Longer content that can be read later.

Dashboard for: Everything. Full data exploration, research, deep-dive. Always available.

8. Database Tables (Supabase)

The developer needs to create these tables:

Table	Key Fields	Purpose
users	id, name, email, role (rep/lead/manager/founder/admin), zoho_user_id	Login & access control
leads	id, zoho_lead_id, company, contact, phone, email, source, stage, deal_value, assigned_rep_id, created_at	Synced from Zoho
lead_scores	id, lead_id, score (hot/warm/cold), score_reason, priority_rank, scored_at	AI scoring output
lead_notes	id, lead_id, note_text, note_source (zoho/manual), created_at	All notes from Zoho
lead_activities	id, lead_id, activity_type (call/email/meeting/note), details, activity_date	Activity timeline
lead_research	id, lead_id, company_info, web_research, notes_summary, close_strategy, similar_deals, researched_at	AI research output
daily_briefs	id, rep_id, brief_content, priority_list (JSON), created_at	Morning briefs
weekly_reports	id, report_content, insights, metrics (JSON), week_start	Weekly AI reports
alerts	id, type, message, target_user_id, channel (whatsapp/email), sent_at, read	Alert log

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9. Cost Optimization Strategy

AI API calls are the main variable cost. Here's how to keep it low:

Strategy	How
Cache research	Once a lead is researched, cache the result. Re-research only if new notes/activity added.
Batch scoring	Score all leads in one AI call with structured output, not one API call per lead.
Use Haiku for simple tasks	Lead scoring and stale detection can use cheaper Claude Haiku. Save Sonnet for research and strategy.

Only score changed leads	If a lead had no new activity since last score, skip it. Only re-score leads with new data.
Limit web research	Web research only runs when rep clicks "Research". Not automatically for all leads.
Structured output	Use JSON mode for AI responses. Shorter, parseable, cheaper than long text responses.

Estimated AI cost for 20 reps, ~500 active leads: $30-80/month with these optimizations. Without optimization, it could be $200-300/month.

10. Build Plan (6 Weeks)

Week 1-2: Foundation

- Set up Supabase: create all database tables, configure auth and RLS policies
- Build Zoho CRM API integration: fetch leads, deals, notes, activities
- Set up FastAPI backend with authentication endpoints
- Build basic React app with login, routing, role-based views
- Deploy: Railway (backend) + Vercel (frontend)

Deliverable: Team can log in, see their raw lead data from Zoho on dashboard.

Week 3: AI Agent Layer

- Set up LangGraph with Claude API integration
- Build Daily Pipeline Agent: scoring, ranking, brief generation
- Build stale lead detection and anomaly detection nodes
- Schedule agent to run at 7:30 AM daily
- Connect LangSmith for tracing and debugging

Deliverable: AI scores all leads every morning. Priority call list appears on dashboard.

Week 4: Research Agent + Alerts

- Build Research Agent: CRM context + web search + notes analysis + close strategy
- Add "Research This Lead" button on dashboard
- Set up WhatsApp Business API (Gupshup) for morning briefs
- Set up Email alerts via Resend
- Build alert triggers for all scenarios (stale, hot, new lead, etc.)

Deliverable: Reps get morning WhatsApp brief. Can research any lead with one click.

Week 5: Manager Dashboard + Analytics

- Build manager/founder dashboard views
- Build analytics screens: funnels, trends, source analysis, leaderboard
- Build Weekly Report Agent
- Build Smart Assignment Agent for new leads
- Add real-time WebSocket updates on dashboard

Deliverable: Founder sees full pipeline. Weekly AI report delivered. New leads auto-assigned.

Week 6: Polish + Testing + Launch

- Mobile responsive optimization
- Load testing with full team (20 reps)
- Refine AI prompts based on real data quality
- Admin settings screen
- Training session with sales team

- Go live

Deliverable: Full system live. All 20 reps + managers + founder using it daily.

11. What Makes This the Best System

What Others Do	What We Are Building	Why It's Better
Dashboard shows data	Dashboard tells you what to do	AI thinks, rep acts
Rep decides who to call	AI decides, rep executes	No guesswork, no wasted calls
Notes sit unread in CRM	AI reads all notes, creates strategy	Every note becomes intelligence
Manager asks for updates	Dashboard shows everything real-time	No meetings needed for status
New leads sit in queue	AI assigns to best rep instantly	Faster response, higher conversion
Stale leads discovered too late	AI alerts after 7 days, escalates at 14	No lead falls through cracks
Weekly reports are manual	AI generates insights automatically	Data-driven decisions, zero effort
Generic CRM for any industry	Built for construction SaaS sales	Understands your business context

12. First Step

**Get Zoho CRM API credentials
and hand this document to the developer.**
Everything else is in here.