

@renvai

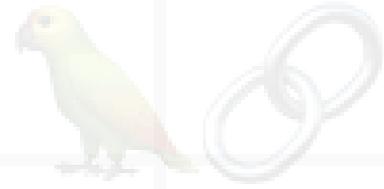
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# AI AGENT PROJECTS

Build these and get hired



LlamaIndex



LangChain



# 1

# Social Media Analysis

Branding

Difficulty: ★★★★☆

## Objective

Learners building personal brands often struggle to track audience perception. A Sentiment Analysis AI Agent can solve this by using HuggingFace models and LangChain to fetch mentions, analyze sentiment, and deliver real-time insights.

You can find the dataset from here: [Sentiment140 Dataset on Kaggle](#)



### Mention Tracker Agent

Scrapes posts using Twitter/Reddit APIs or Sns scrape

### Sentiment Analyzer Agent

Classifies tone using HuggingFace models

### Theme Tagger Agent

Detects context like praise or complaints

### Reputation Report Generator

Summarizes trends via dashboard or Notion

## Impact

**Instant Audience Insights:** Helps creators track and respond to real-time sentiment trends.

**Practical NLP Skills:** Teaches API use, LLMs, and transformer models for real-world tasks.

## Objective

Farmers and agriculture students often lack timely, data-driven guidance, leading to poor crop decisions. An AI Advisor Agent using LangChain or CrewAI can analyze weather, soil, and crop data to deliver personalized farming recommendations.

You can find the dataset from here:[Crop Recommendation Dataset – Kaggle](#) and can also refer google images to get crop related images



## Impact

**Accessible Smart Farming**: Uses AI to boost yields without costly tools or consultants.

**Interdisciplinary Learning**: Combines agriculture, APIs, and LLMs for sustainability-focused AI skills.

# One Memory for All Your Dev Agents

Developer Tools

Difficulty: ★★★★☆

## Objective

Developers face context loss when switching between AI tools like Claude Desktop or Cursor IDE. An MCP-enabled shared memory layer using Redis or LangChain memory can solve this by enabling agents to store and recall context seamlessly across sessions and platforms.

You can find the dataset from here: [LangChain Memory Examples & GitHub](#)



### Define Schema

Define the structure for shared context fields using JSON or SQLite.



### Enable Communication

Use LangChain or CrewAI with Redis for real-time context sharing.



### Integrate Tools

Create plugins or APIs for Claude Desktop, Cursor IDE, or VSCode.



### Persist State

Store session data in local files or cloud backends for continuity.

## Impact

**Boosted Developer Flow:** Agents assist with full context, reducing rework and friction.

**Smarter Tool Ecosystem :** Lays groundwork for interoperable, memory-aware dev environments.

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# Decentralized Supply Chain Orchestrator

Logistics

Difficulty: ★★★★☆

## Objective

Traditional supply chain simulators miss real-world complexity involving independent suppliers, warehouses, and transporters. This project builds a decentralized agent network where each agent negotiates, tracks, and updates in real time using coordination protocols, with optional blockchain-style logging for secure, transparent operations.

You can find the dataset from here available on [Kaggle](#) for mock and delivery records.

- 
- Define Agent Roles :** Use CrewAI to create Supplier, Warehouse & Transporter agents with unique goals
  - Enable Agent Negotiation :** Use LangChain MCP or CrewAI delegation for real-time contract decisions
  - Optimize Routes:** Transporter agent uses Dijkstra's algorithm or Maps API for smart routing
  - Ensure Trust –** Simulate blockchain (Ganache/hash logs) to record secure transactions

## Impact

**Logistics Skill Builder** – Simulates decentralized decision-making like Amazon or Maersk.

**Multi-Agent Foundations** – Teaches agent communication, distributed AI, and basic blockchain.

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# Expense Tracking Agent

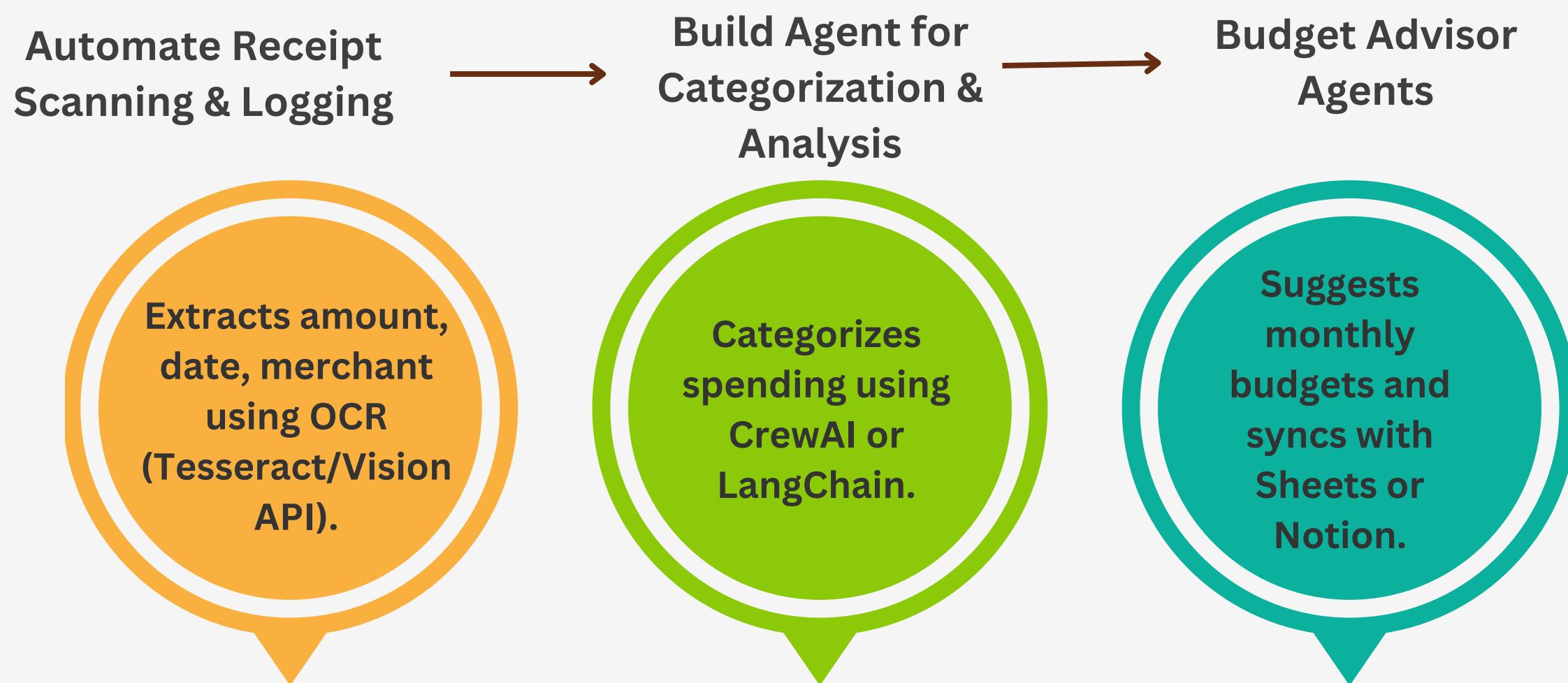
Fintech

Difficulty: ★★★★☆

## Objective

Students often struggle with manual expense tracking and lack financial awareness. This project builds an AI agent that scans receipts, categorizes spending, and offers budgeting tips, using OCR, LangChain, and Crew

Use RVL-CDIP for OCR on scanned documents and CORD(github) for receipt entity



## Impact

**Smarter Spending:** Boosts financial awareness through AI-driven insights.

**All-in-One Learning:** Teaches OCR, data flows, and agent-based logic with LLMs.

# Lead Generation Agent

Marketing

Difficulty: ★★★☆☆

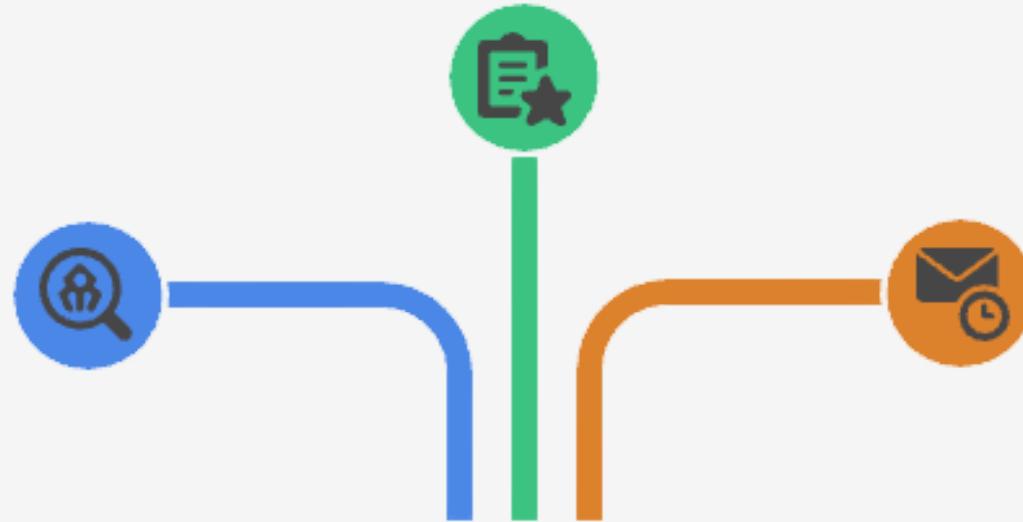
## Objective

Students and early-stage startups struggle with slow, manual lead generation. This project builds an AI agent that scrapes leads, analyzes intent, and automates personalized outreach using LLMs, powered by LangChain or CrewAI.

Use PhantomBuster or simulate LinkedIn data; enrich with Clearbit API or Hunter.io for lead and email details.

### Relevance Scorer Agent

Ranks leads based on role, company size, and keywords using LangChain.



### Lead Scraper Agent

Extracts lead data from LinkedIn or websites and stores it in CSV or SQLite.

### Outreach Automation Agents

Drafts and sends follow-ups via Gmail API or Zapier.

## Impact

**AI-Powered Outreach Skills:** Combines scraping, scoring, and follow-ups for smarter sales.

**Startup-Ready Toolkit:** Ideal for launching products or freelance services with automated lead gen.

# AI Game Strategy Agent

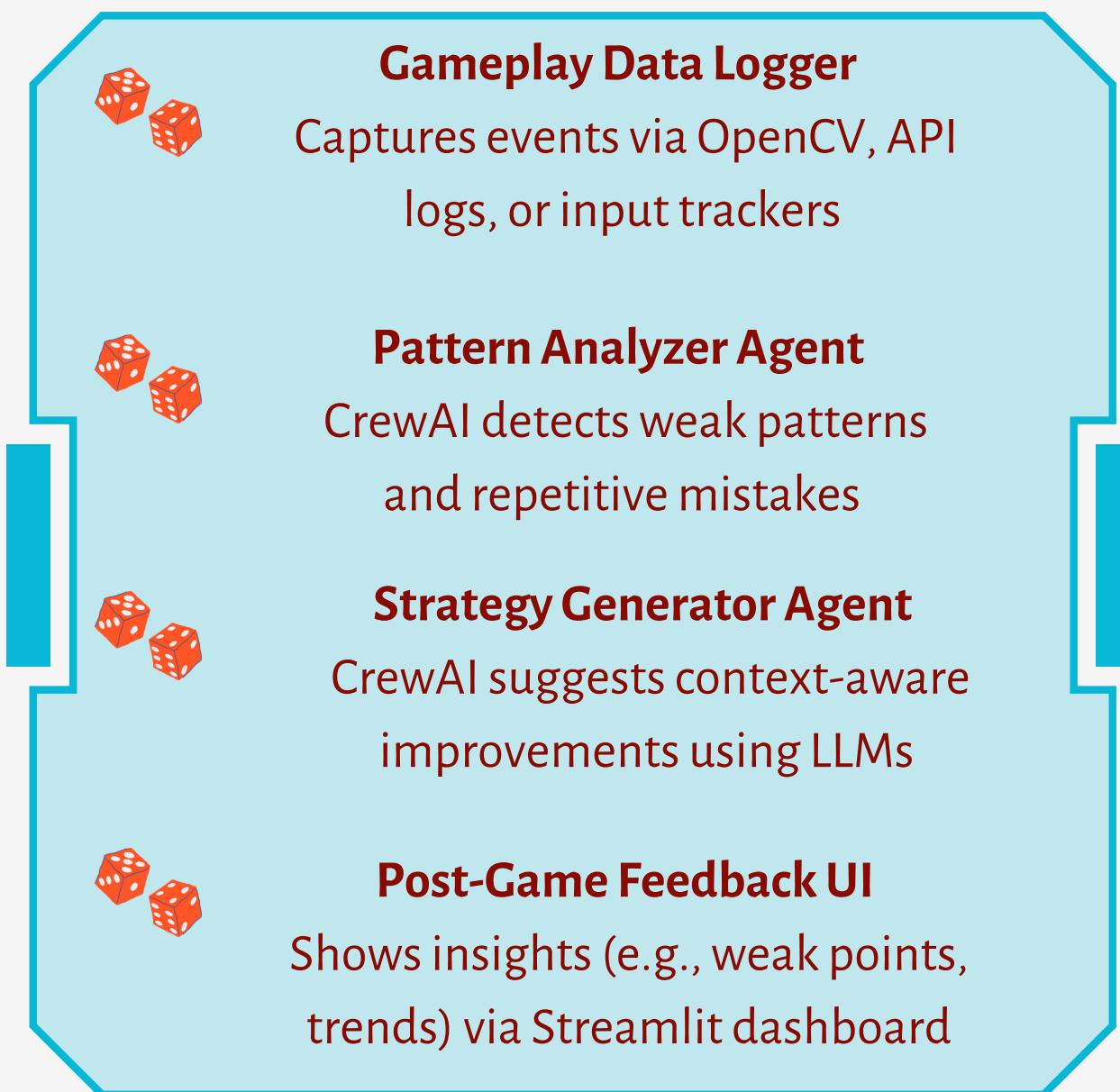
Gaming

Difficulty: ★★★☆☆

## Objective

Gamers struggle to improve due to lack of real-time performance analysis. This project builds an AI Game Strategy Agent using LangChain or CrewAI to observe gameplay, detect patterns, and offer personalized strategy tips across game types like FPS or RPG.

Use gameplays from youtube or simulate gameplay with OpenAI Gym and PyAutoGUI.



## Impact

**Skill Boost for Gamers:** Acts as a personal AI coach to improve gameplay efficiently.

**AI for Game Projects :** Ideal for building portfolio-ready tools in gaming and player modeling.

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# Hospital Multi-Agent Coordination Platform

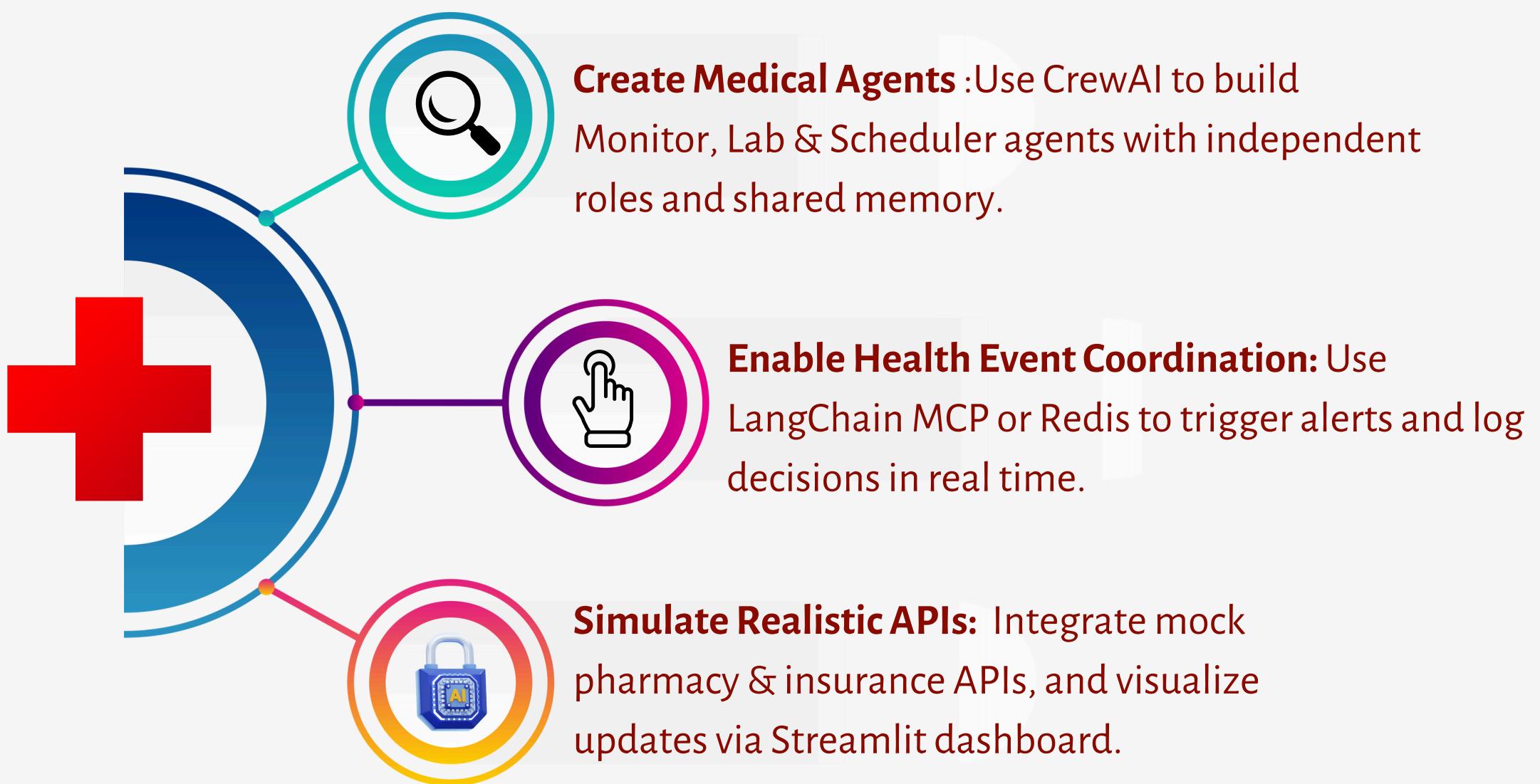
Healthcare

Difficulty: ★★★★☆

## Objective

Healthcare tech projects often fail to simulate real-time, autonomous patient care. This project builds a Smart Hospital Agent System using LangChain or CrewAI, where agents coordinate vitals, lab results, and scheduling mimicking real hospital workflows with optional pharmacy and insurance integration.

Use [MIMIC-III](#) or simulate vitals using public health data from [data.gov.in](#).



## Impact

**AI in Healthcare:** Covers real-time care coordination and system integration.

**Agent-Based MedTech :** Develops skills in modeling agents and managing live health data.

# Autonomous Fleet Agent System

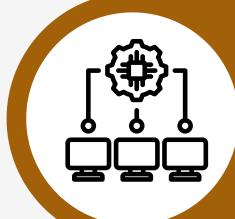
Mobility

Difficulty: ★★★★★

## Objective

Learners lack access to realistic fleet simulations, as most use single-agent models. This project builds a Multi-Agent Vehicle Fleet System using LangChain or CrewAI, where agents share real-time data for traffic, routing, and vehicle health to simulate smart, optimized logistics.

Use [HERE Maps API](#) for live traffic data, or [OpenStreetMap](#) with tools to scrape and simulate traffic routes



CREATE ROUTE, TRAFFIC & HEALTH AGENTS USING CREWAI



USE REDIS OR LANGCHAIN FOR AGENT COORDINATION VIA MCP



TRIGGER REROUTES & MAINTENANCE BASED ON REAL-TIME DATA



VISUALIZE FLEET UPDATES WITH STREAMLIT OR PLOTLY DASHBOARD

## Impact

**Fleet Optimization Skills:** Learn how AI improves routes, speed, and real-time decisions.

**Mobility & Robotics:** Gain hands-on experience in logistics and agent coordination systems.

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# Multi-Agent Event Planning Platform

EventTech

Difficulty: ★★★☆☆

## Objective

Planning college events often leads to chaos due to manual coordination. This project builds a Multi-Agent Event Planner using LangChain or CrewAI, where agents like venue, attendee, and logistics managers coordinate in real time for smooth, automated execution.

you can use Annotated email threads for event extraction or create mock event schedules



Create Venue, Attendee & Logistics agents using CrewAI



Use Redis or LangChain to sync tasks via MCP



Trigger agent actions on venue confirmation or RSVP updates



Display real-time progress via Streamlit or Notion dashboard

## Impact

**Smart Event Execution:** Uses AI to handle planning, updates, and coordination smoothly.

**Operational AI Skills:** Builds expertise in task delegation, real-time alerts, and team workflows.

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