# AI Crypto Trading Agent Plan

## Overview

This project aims to build an AI-powered trading agent that trades BTC and ETH based on market conditions. The system will consist of multiple sub-agents that gather different types of market information, with the main AI trading agent making final trade decisions. The platform will leverage n8n for automation and Telegram as a control interface.

## System Architecture

Core components include:

✅ Data Aggregation Agent – Collects real-time BTC & ETH market data.

✅ Technical Analysis Agent – Computes indicators like RSI, MACD, and Bollinger Bands.

✅ Market Sentiment Agent – Analyzes Twitter, Reddit, news, and funding rates.

✅ Whale Activity Agent – Tracks large BTC & ETH transactions on-chain.

✅ AI Trading Decision Agent – Listens to all sub-agents and executes trades.

✅ Execution Engine – Places orders based on trading decisions.

✅ Telegram Control Bot – Allows manual control, alerts, and trading updates.

## Role of n8n

n8n will be used for automating various sub-agents and integrating with external APIs for:

✅ Data Aggregation – Fetching real-time market data, funding rates, and whale alerts.

✅ Sentiment Analysis – Monitoring news, Twitter, and funding rate sentiment.

✅ Risk Management & Alerts – Notifying before executing high-risk trades.

✅ Automated Execution – Placing orders via Binance API.

## Role of Telegram

Telegram will be the control interface, allowing the user to:

✅ Start/Stop Trading – Toggle the bot on/off remotely.

✅ Get Market Updates – Request BTC/ETH analysis via chat.

✅ Execute Manual Trades – Send commands like /long, /short, /close.

✅ Receive Alerts – Get notifications on major market movements.

## Detailed Breakdown of Each Agent

### Data Aggregation Agent

✅ Pulls real-time BTC & ETH market data from APIs.

✅ Collects order book depth, volume, open interest, and volatility metrics.

✅ Stores data in a fast, low-latency cache (Redis or TimescaleDB).

### Technical Analysis Agent

✅ Computes trend indicators (Moving Averages, RSI, MACD).

✅ Identifies breakout patterns & mean reversion signals.

✅ Checks if BTC & ETH are overbought/oversold.

### Market Sentiment Agent

✅ Analyzes Twitter sentiment on BTC/ETH.

✅ Reads crypto news headlines for market-moving events.

✅ Monitors fear & greed index, funding rates, social media trends.

### Whale Activity Agent

✅ Monitors large BTC/ETH transactions on-chain.

✅ Detects whale accumulation vs. distribution.

✅ Alerts if big wallets move funds to exchanges (sell signal).

### AI Trading Decision Agent

✅ Listens to all sub-agents and determines market conditions.

✅ Decides whether to long, short, or stay neutral.

✅ Executes orders via exchange APIs.

### Execution Engine

✅ Places orders based on AI decisions.

✅ Ensures risk management (stop-loss, take-profit levels).

✅ Logs trade executions for backtesting.

### Telegram Control Bot

✅ Sends market updates and trade alerts.

✅ Allows user to start/stop trading manually.

✅ Provides real-time risk management notifications.

## Execution Flow

1️⃣ Data Collection: Aggregation agent pulls BTC/ETH data.

1️⃣ Market Analysis: Technical + Sentiment + Whale agents process info.

1️⃣ Trading Decision: AI agent evaluates market condition & risk.

1️⃣ Execution: If conditions match the strategy, place trade.

1️⃣ Monitoring: Stop-loss, take-profit, and risk management checks.

## Next Steps

✅ Set up n8n workflows for data aggregation (price, volume, funding rates).

✅ Build a Telegram bot to send/receive trading commands.

✅ Create a simple trading logic (rule-based before AI).

✅ Expand AI model & risk management for decision-making.