Assessment Task – 3

Clone, Debug & Extend a CrewAI Stock Analysis Agent

Objective

Clone and run the CrewAI Stock Analysis example. Ensure the system executes successfully and demonstrate your understanding of CrewAI's agent-task-crew architecture by debugging and optionally extending the example.

Task Requirements

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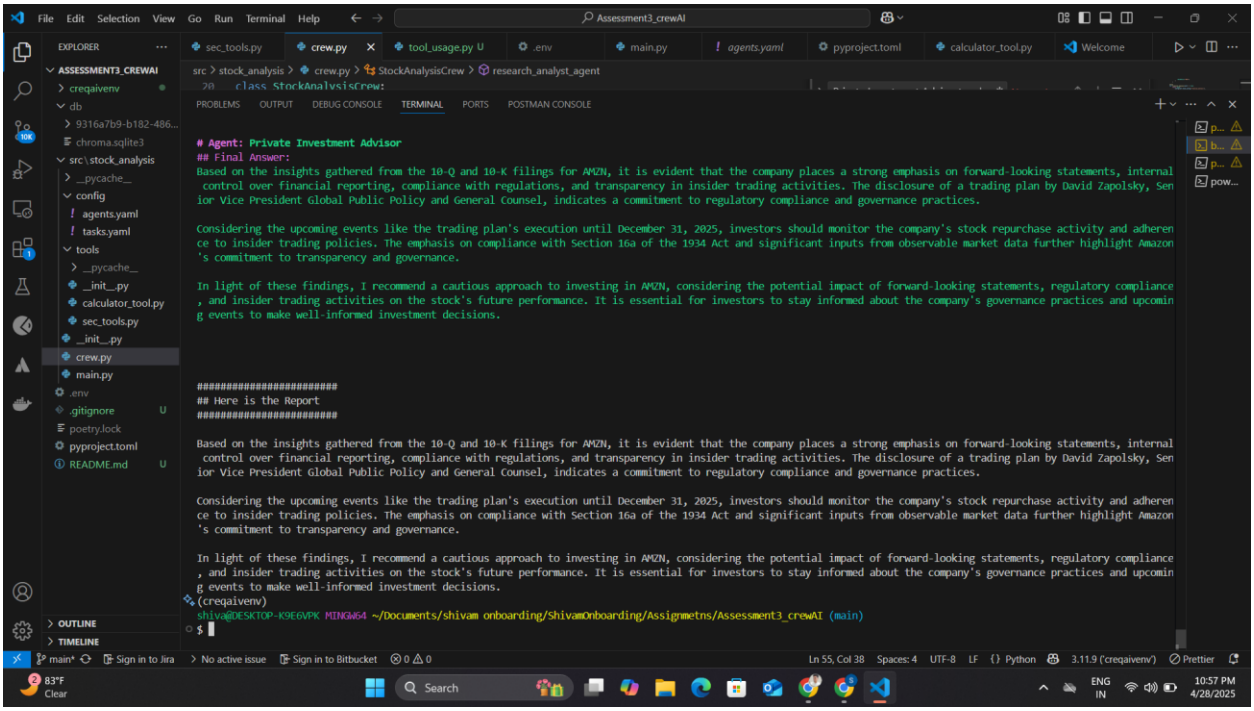
1. Setup & Execution (Basic)

- Clone the `crewAI-examples` GitHub repo and navigate to the `stock_analysis` folder.
- Install required dependencies and ensure environment variables (like `OPENAI_API_KEY`) are properly configured.
- Run the `main.py` script and ensure the Crew executes successfully.

Deliverables:

- Screenshot or console log showing successful execution



- `README.md` snippet or notes showing steps you followed to get it working

  https://github.com/shivamgiri007/ShivamOnboarding/blob/main/Assignmetns/Assessment3_crewAI/README.md

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2. Debugging (Core)

Fix any issues that arise during:

- Agent instantiation or task execution
- LLM or tool invocation
- Pydantic validation errors or version incompatibilities

  - Changed Depricated pydantic versions
  - Enabled WebsiteSearchTool() in research_analyst_agent in crew.py
  - created llm model for openai insted of huggingface llm model
  - .schema() depricated method changed to .model_json_schema()
  - changed wrong , incomplete imports

- changed with open(file_path) as f to with open(file_path, encoding="utf-8") as f: (Added encoding to read file in utils for UnicodeDecodeError)

✅**Deliverables**:

- List of bugs/errors encountered and how you resolved them (max 300 words)
- Updated and working version of the project (`main.py`, `agents.py`, etc.)

  https://github.com/shivamgiri007/ShivamOnboarding/blob/main/Assignmetns/Assessment2/main.py

  https://github.com/shivamgiri007/ShivamOnboarding/blob/main/Assignmetns/Assessment2/agent.py

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3. Understanding Agent Structure (Analysis)

Answer the following:

- **What roles do the agents in this example play?**

  Ans : Financial Analyst , Research Analyst , Private Investment Advisor

- **What is each task meant to accomplish?**
  Ans : financial_analysis: Analyze the financial health and market performance of company_stock using key metrics and industry comparisons.

  research: Summarize recent news, market sentiment, and upcoming events related to company_stock and its industry.

  filings_analysis: Extract critical insights from the latest 10-Q and 10-K filings of company_stock focusing on risks, performance, and insider activity.

  recommend: Deliver a comprehensive investment recommendation for company_stock by synthesizing financial, news, and regulatory insights.

- **What tools are invoked (e.g., `yfinance`, LLM calls)?**
  Ans : ScrapeWebsiteTool()
  WebsiteSearchTool()
  Inheriting RagTool and overriding custom functionality
  Custom Tool : CalculatorTool

- **How are outputs from agents passed across tasks?**

Ans : - Outputs passing defination is declared in agents and tasks yaml file.

- No context Parameter used externally how output is parsed to next agent.

✅ **Deliverables**:

- A markdown file (`architecture.md`) explaining how the crew, agents, and tasks interact.

  https://github.com/shivamgiri007/ShivamOnboarding/blob/main/Assignmetns/Assessment3_crewAI/architecture.md

- A basic flowchart showing agent-task-tool relationships

  Task (Financial Anakysis) ----------→ Agent (Financial Agent)

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  Task (research) ----------→ Agent (research_analyst_agent)

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  Task (financial_analysis) ----------→ Agent (financial_analysis_agent)

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  Task (filings_analysis) ----------→ Agent (financial_analysis_agent)

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  Task (Recommend) ----------→ Agent (investment_advisor_agent)

Short Reflection (200–300 words)

Write a brief reflection covering:

- How did you approach the debugging process?

  - readme.md file contains Flow of execution how to execute.

  - installed crewai in venv and other dependancies

  -Created free tier API_KEY endpoint for browserless.

  -Created SEC_API_KEY for online datasets.

  -Created SERPER_API_KEY

  - After fullfilling all requirements , changed Depricated methods to latest methods

  - (pydanic v2 to pydantic , schema to model_json_schema)

  - enabled commented tool WebsiteSearchTool for rag retrival.

- What did you learn about CrewAI's agent/task model?
  - Crew ai is similar to langgraph , only difference is more automated than langgraph , decesions are solely depend upon llm , need to be accurate description prompts for perfect execution of tasks.
  - unlike langgraph we can bind multiple crews with similar functionality for more complex tasks than langgraph.