ITERATIVE AGENT BASED ENTITY INTELLIGENCE RISK ANALYSIS

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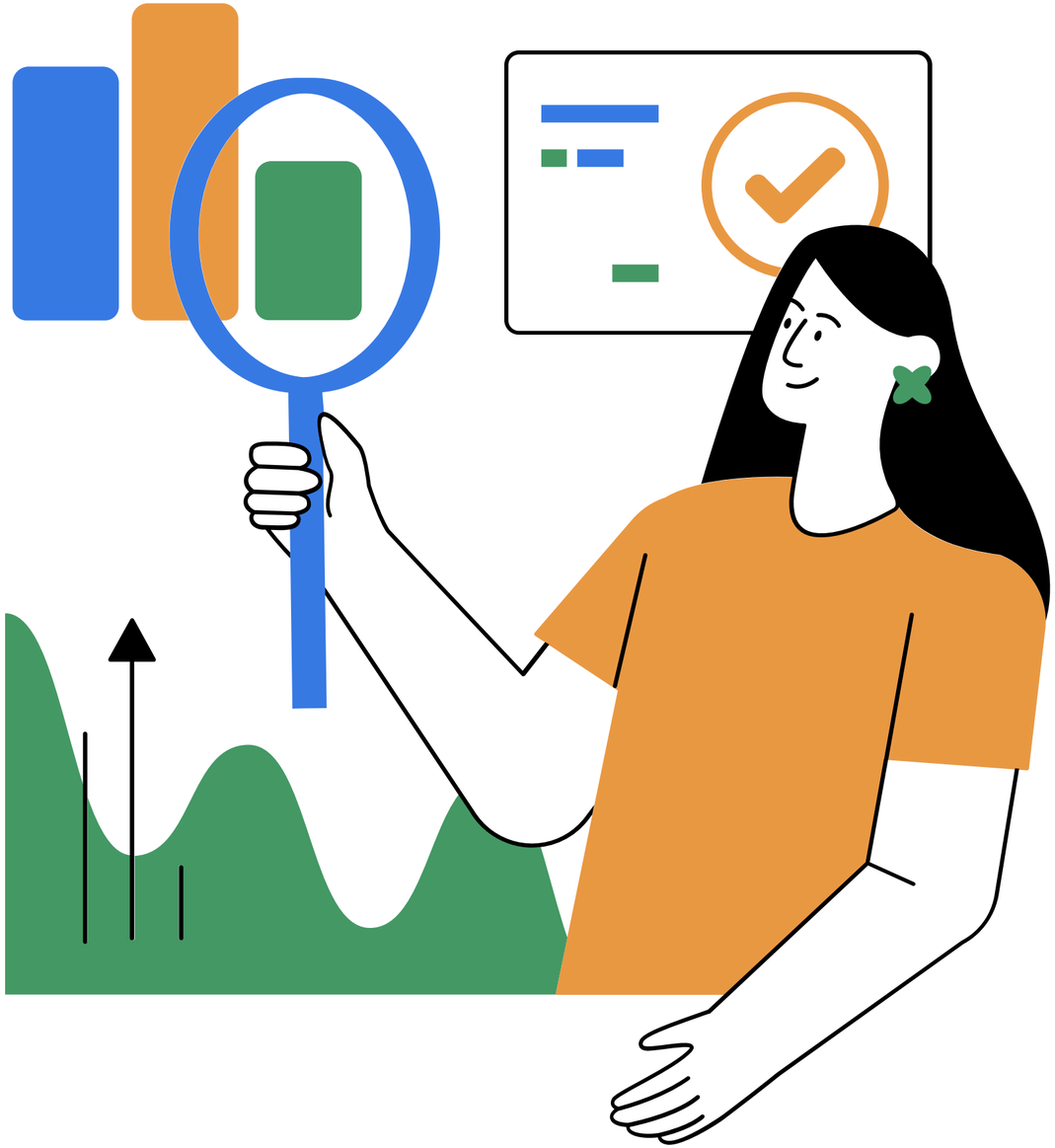

Borcelle

Problem Statement

Currently, data analysts spend significant manual effort analyzing party names from transaction details to determine the correct entities involved. This process becomes even more challenging when dealing with corporations, non-profits, and potential shell companies due to naming inconsistencies, abbreviations, fraudulent entities, and lack of structured information. The goal of this challenge is to build an AI-driven system that

- ·Extracts entity names from unstructured and structured transaction data.
- ·Enriches the extracted names with publicly available data (e.g., company registries, online sources, financial news, regulatory filings, and legal databases).
- ·Identifies potential fraudulent or high-risk entities through anomaly detection.
- ·Classifies entities into categories (corporation, non-profit, shell company,
- government agency, etc.).
- ·Assigns a risk score based on-entity attributes, and associated networks (business/sectors associated with the entities).
- ·Provides supporting evidence and confidence scores to assist analysts in decision-making
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2 ITERATIVE GEN-AI-AGENTS BASED MODEL

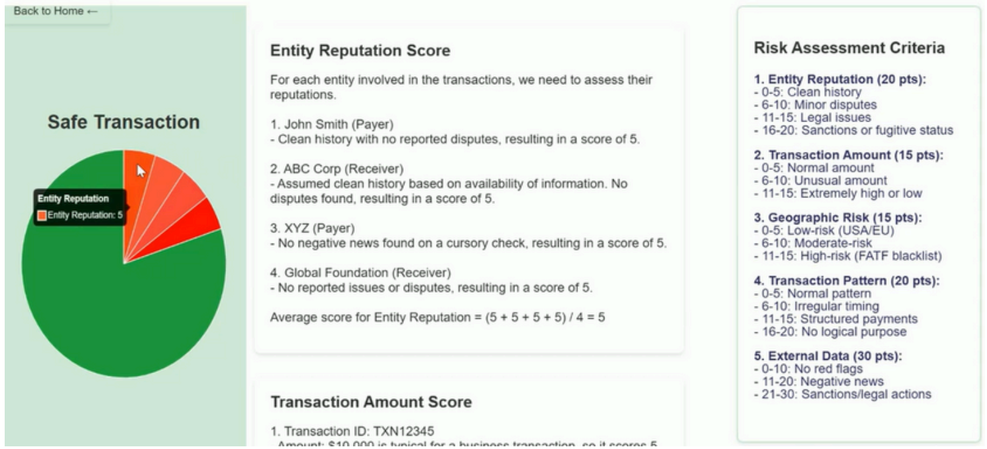
(.csv, .txt, prompt)

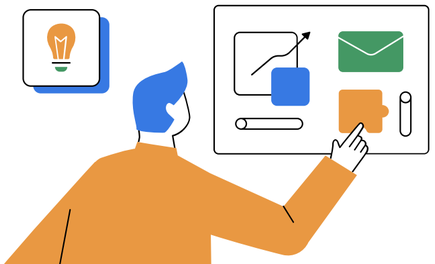
Data Analysing agent

response

response

Data organizer and visualizer agent





DATA ANALYSING AGENT

```
system_message=[{"role":"system",
                 "content": """Act as a financial data analyst and assess transactions for potential fraud risks using the following framework. Ensure you analyze every aspect thoroughly, even seemingly minc

### Scoring System (Total Risk Score: 0-100):

1. Entity Reputation (20 pts):
   - 0-5: Clean history
   - 6-10: Minor disputes
   - 11-15: Legal issues
   - 16-20: Sanctions or fugitive status

2. Transaction Amount (15 pts):
   - 0-5: Normal amount
   - 6-10: Unusual amount
   - 11-15: Extremely high or low

3. Geographic Risk (15 pts):
   - 0-5: Low-risk (USA/EU)
   - 6-10: Moderate-risk
   - 11-15: High-risk (FATF blacklist)

4. Transaction Pattern (20 pts):
   - 0-5: Normal pattern
   - 6-10: Irregular timing
   - 11-15: Structured payments
   - 16-20: No logical purpose

5. External Data (30 pts):
   - 0-10: No red flags
   - 11-20: Negative news
   - 21-30: Sanctions/legal actions

### Approach:
- Perform detailed sub-scoring for each category, ensuring you evaluate each aspect fully.If it involves multiple reason, assign score to every reason within that category and then take an average of all re
- Extract relevant entities efficiently and make note of any indicators that might suggest risks, even those that initially seem trivial.
- give proper reasoning
-for proper separating of data give heading as category score
-the above mentioned 5 catogories shall be seperated by ###
-if there is any other important data that does not lie in the above category then show that other data by creating category yourself.
-if ip address is present in the data then using this link https://tools.keycdn.com/geo?host=2001%3A4860%3A7%3A405%3A%3A69 or any other link find the geo location and related detail
-always give total risk score as a seperate heading (seperated by ###) and in this format ..sample->Total Risk Score Calculation
Now let's sum up these category scores to reach a total risk score:
- Entity Reputation: 8
- Transaction Amount: 10
```

DATA ORGANIZER & VISUALIZING AGENT

```
completion = client.chat.completions.create(
model="gpt-4o-mini",
store=True,
messages=[
    {
        "role": "system",
        "content": """The user will give a dictionary. Extract the value for the key-(total risk score calculation only). convert those sub score values and total v
ntity Reputation": 5,
ransaction Amount": 5,
eographic Risk": 10,
ransaction Pattern": 10,
xternal Data": 10,
otal Risk Score":40}"""
    },

    {
        "role": "user",
        "content": f"Dictionary=>'{str(heading_dict)}'"
    },

]
)

output_message = completion.choices[0].message.content
```

THANK YOU!