Agent-Based Automation Workflow (ReAct Framework)

Task: Investigate API performance degradation

GPT-4 Agent Core

Reasoning Phase

1. Analyze current state
2. Decompose into subtasks
3. Select appropriate tool

- Check metrics first
- Then examine logs
- Query DB if needed

Acting Phase - Tool Library

Query Metrics API	**Read Logs** File System
Database Query	**Cloud API** AWS/GCP/Azure
Run Diagnostic	**Modify Config**

Execute
Results

Few-Shot Examples

Example 1: Latency issue
→ Query metrics
→ Check DB queries

Example 2: Error spike
→ Read logs
→ Identify pattern

Example 3: Resource issue
→ Cloud API check
95% tool selection accuracy

Error Handling & Reliability

Retry Logic: Exponential backoff (1s → 2s → 4s)
Fallback Strategies: If metrics timeout → read logs instead

Approval Gate System

Read-Only → Auto Execute

- Query metrics
- Read logs
- Run diagnostics

Modify → Approval Required

- Restart service
- Change config
→ On-Call Engineer

Destructive → Blocked

- Delete data
- Terminate instances
✗ Never automated

Performance Metrics

30% task automation • 85% success rate
95% tool selection accuracy with few-shot examples

Economic Impact

$100K/year infrastructure cost
vs $500K labor savings (125:1 ROI)