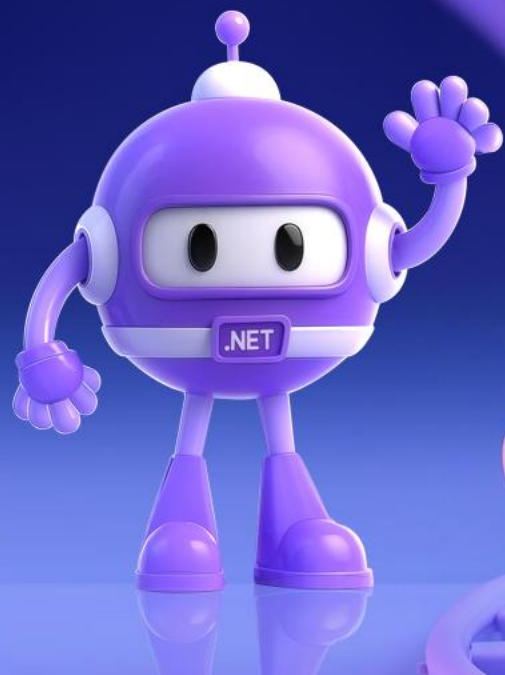


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2025 年 11 月 30 日 | 中国 上海



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用 .NET 基于 Microsoft Agent Framework 的多智能体创建技巧



Kinfey Lo
Microsoft Senior Cloud Advocate



Public Preview

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Microsoft Agent Framework

用于构建和编排智能 AI 代理的开源引擎

Dev UIContent Review Workf...

Content Review Workflow ⓘ ↺Run Again ⚙ Inputs

Multi-agent content creation workflow with quality-based routing (Writer → Reviewer → Editor/Publisher)

+

-

↻

WriterAgentExecutor

ReviewerAgentExecutor

PublisherAgentExecutor

EditorAgentExecutor

SummarizerAgentExecutor

Last Executor

● Summarizer 4:31:16 PM

Executor started

✔ Workflow Complete

discusses core principles such as superposition and entanglement, recent theoretical advancements in quantum field theory and quantum information science, as well as the ongoing debate around the interpretation of quantum mechanics. The report highlights cutting-edge technological applications including quantum computing, quantum cryptography, and quantum sensing. Ex... View Full progress is reviewed, noting advances in emerging

Events 77 (1784 raw)

4:31:16 PM completed

> Response complete (5235 tokens)

4:31:16 PM output_item.done

response.output_item.done

4:31:16 PM output_text.delta

> - The interplay between theory and experiment continues to d...

4:31:16 PM output_text.delta

> - Significant theoretical challenges persist, particularly i...

4:31:16 PM output_text.delta

> - Experimental physics is pushing quantum effects toward mac...

4:31:16 PM output_text.delta

> - Quantum technologies are rapidly advancing, notably in com...

4:31:16 PM output_text.delta

> 3. Key Highlights and Takeaways: - Quantum mechanics conti...

Deployment Guide for Content Review Workflow

ft confidential

3

融合两种框架

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Microsoft Agent Framework



Semantic Kernel

完整的 SDK 旨在轻松建立 AI 智能体，非常适合单智能体，并且可以透过与 AutoGen 整合扩展到多智能体



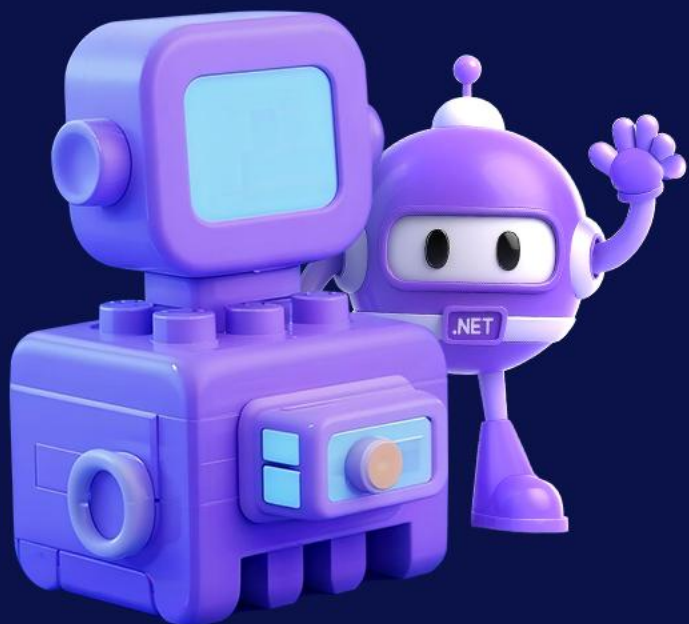
AutoGen

强大的多智能体研究框架，具有预先建立的对话编排模式，用于处理复杂的智能体系统

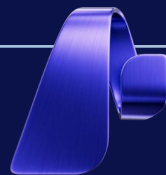


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Microsoft Foundry



Microsoft Foundry

AI Agent Ecosystem

Authoring Tools

Visual Studio

GitHub

Knowledge



Microsoft Fabric



Azure Cosmos DB



SharePoint



Microsoft Graph



Azure AI Search



Microsoft Bing

Enterprise Trust

VNet deployments

OBO Auth

BYO-resources

Managed Identities

Agent catalog

Ready-made agents to kickstart your agent workforce

Microsoft Agent Framework

Client SDKs for enterprise and production agentic systems

Agent tools

Orchestration

Channels

Foundry Agent Service

Deploy and manage agents with fully-managed runtime

Multi-agent workflows

Built-in threads

Long-term memory

Evaluation

Tracing & Monitoring

Governance + Safety

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Foundry Models
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OpenAI



Llama



Grok



Flux



Mistral



Phi



Cohere



Paige



Stability



Hugging Face

Industry Models



Foundry Labs

Muse

Magentic-One

Aurora

OmniParser

Open Ecosystem



A2A

Protocols



MCP



OpenAPI

Connectors



Google Vertex AI



Amazon Bedrock



CrewAI



LangChain



ElasticSearch



Pinecone



Logic Apps



Azure Functions

关于AI Agent 的几个要点

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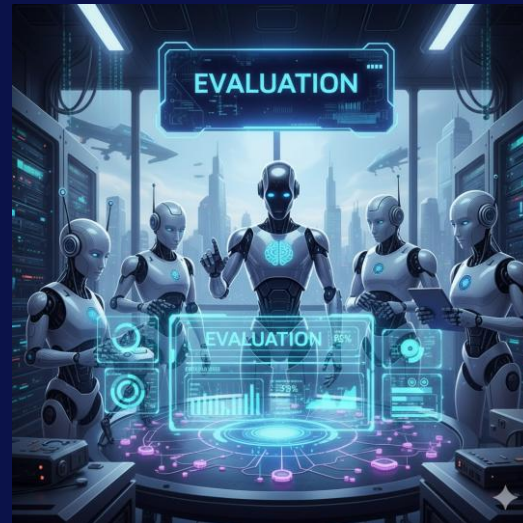
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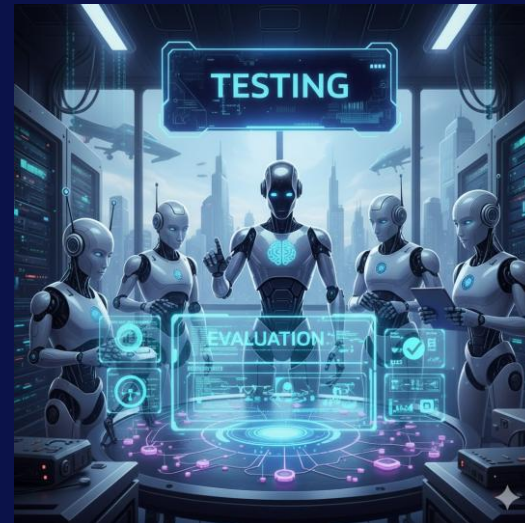
创建



编排



评估



测试

Framework

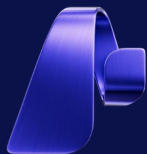


Microsoft Agent Framework

关键点



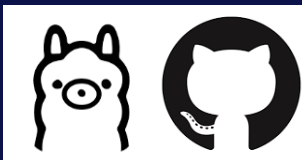
Agents



Microsoft Foundry



OpenAI



Foundry Local

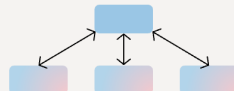
3rd party local tools

Workflow

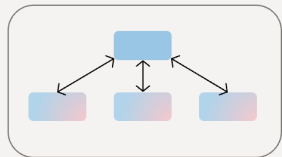
Sequential



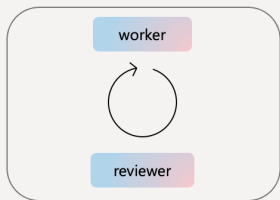
Concurrent



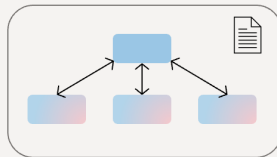
Handoff



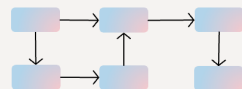
Group Chat



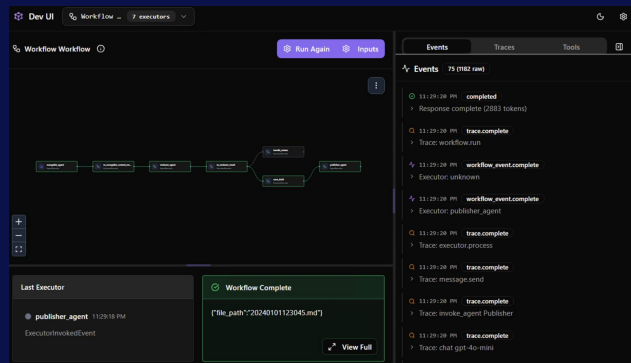
Magentic



Workflow Process

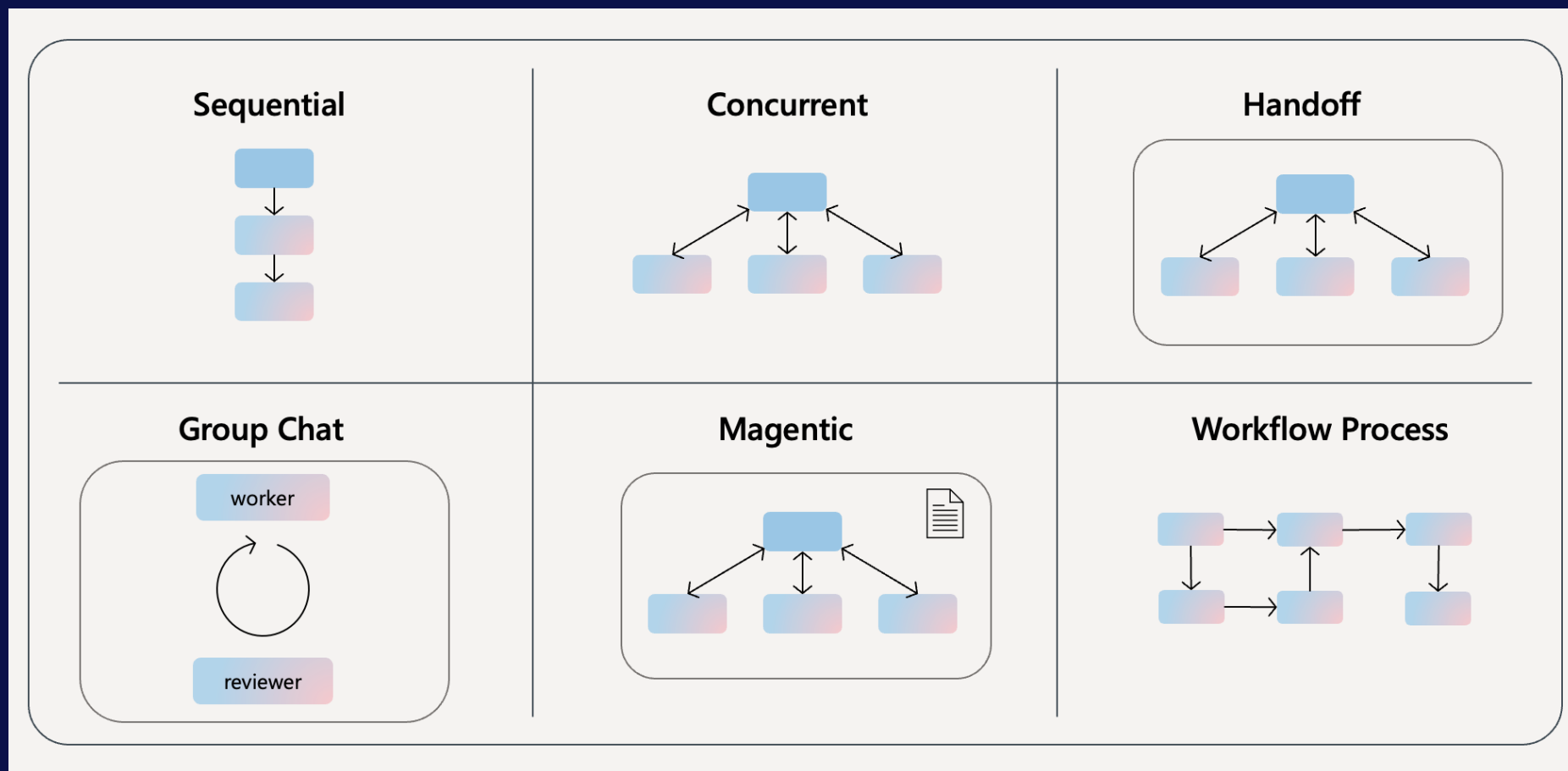


DevUI



Agent Framework 的几个要素

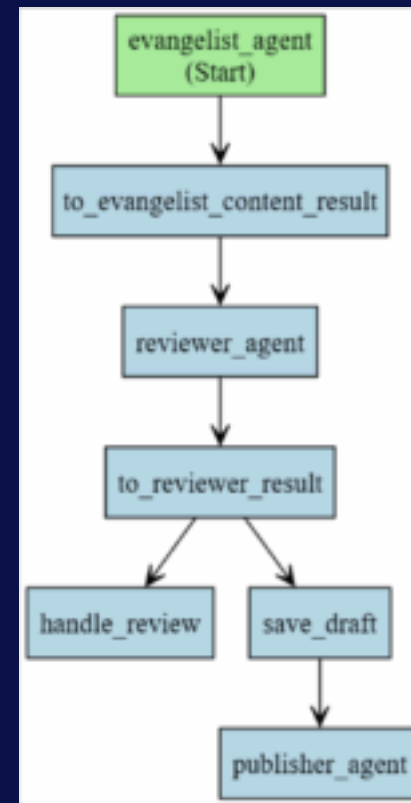
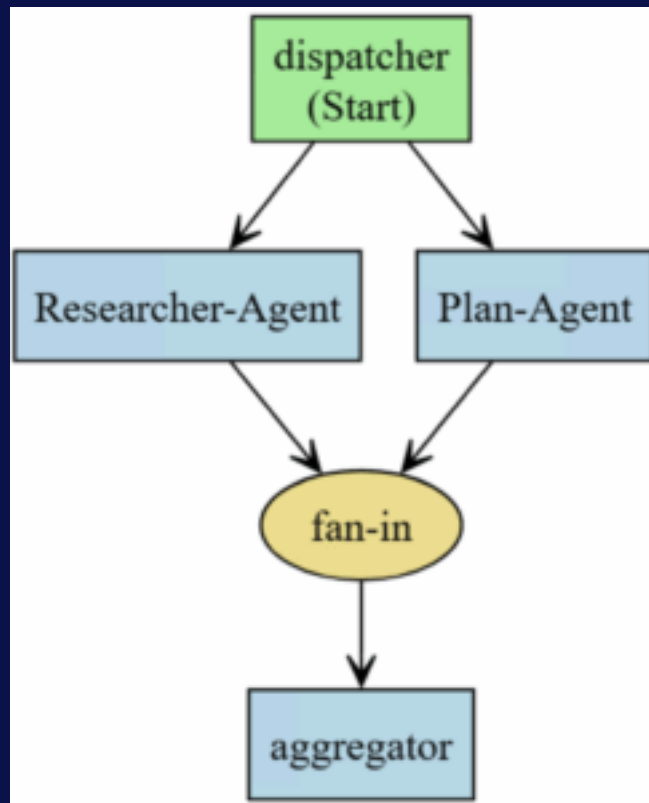
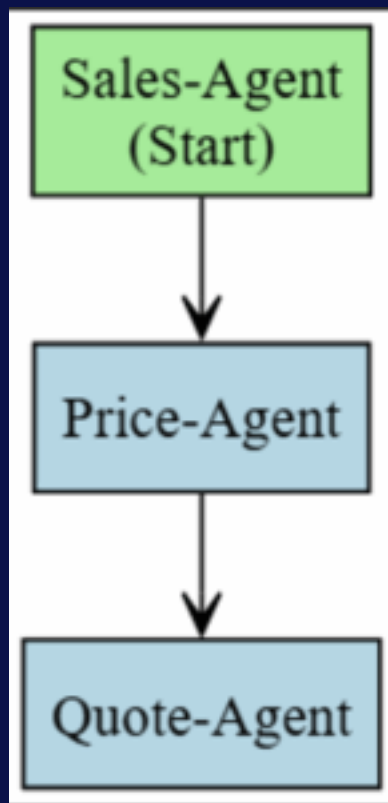
如何有效编排多智能体



透过 Agent Framework Workflow 来组织我们的业务



Workflow



如何评估智能体

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- 效能
- 结果
- 情境
- 判断

MULTI-AGENT EVALUATION ELEMENTS

1. PERFORMANCE

- Task Completion: % success, time, quantity
- Efficiency: Resource use, time, energy, communication
- Robustness: Error tolerance, reliability
- Scalability: Agents, tasks, data

2. OUTCOMES

- Collective Utility: System goal achievement
- Individual Rewards: Agent-specific Agent-specific objectives
- Fairness: Equitable resource distribution
- Social Welfare: Global benefit

3. CONTEXT

- Environment Type:
- Static/Dynamic, Known/Unknown
- Interaction: Cooperative/Communication
- Constraints: Time, Budget, Ethics
- User Feedback: Preferences, Satisfaction

4. JUDGMENT

- Metrics: Quantitative, Qualitative
- Benchmarks: Baselines, SOTA Comparison
- Basman Svalugs
- Human Evaluation: Expert Opinion, Crowd-sourcing
- Automated Simulators, Rule-based Systems

开发环境 -

透过 Agent Framework Workflow 来评估智能体

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Dev UI

Workflow ... 7 executors

Workflow Workflow

Run Again Inputs

```
graph LR; A[message_agent] --> B[message_agent]; B --> C[message_agent]; C --> D[message_agent]; D --> E[health_checker]; D --> F[user_data]; E --> G[publisher_agent]; F --> G;
```

Last Executor

● publisher_agent 11:29:18 PM

ExecutorInvokedEvent

Workflow Complete

`{"file_path": "20240101123045.md"}`

View Full

Events 75 (1182 raw)

Traces Tools

11:29:20 PM completed

Response complete (2883 tokens)

11:29:20 PM trace.complete

Trace: workflow.run

11:29:20 PM workflow_event.complete

Executor: unknown

11:29:20 PM workflow_event.complete

Executor: publisher_agent

11:29:20 PM trace.complete

Trace: executor.process

11:29:20 PM trace.complete

Trace: message.send

11:29:20 PM trace.complete

Trace: invoke_agent Publisher

11:29:20 PM trace.complete

Trace: chat gpt-4o-mini

开发环境 - 透过 Red Team 来评估智能体



GitHubShopAgent-Redteam-Scan

Report Data Logs

Refresh

Export result

AI red teaming scan details

Status

✔ Completed

Create time

Oct 24, 2025 1:40 PM

Created by

kinfeylo (BAMI)

Tags

ⓘ No tags

See all properties

Raw JSON

Description

Metric dashboard

Attack risk category Attack complexity

Run

GitHubShopAgent-Redteam-Scan

Create and Manage (Low-Code)



Microsoft Foundry



Hiring Manager



GPT-4.1-mini

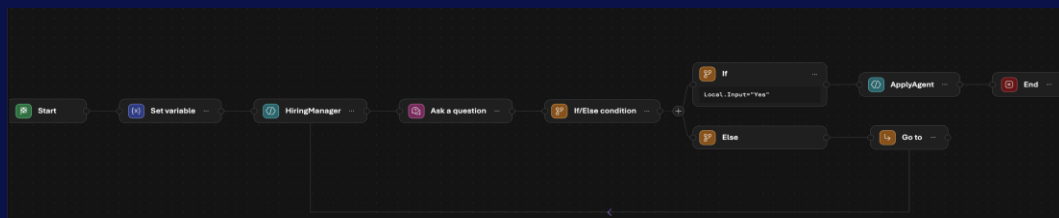


Apply Manager



Claude-Sonnet-4-5

Microsoft Foundry Workflow



Microsoft Agent Framework

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```
// Copyright (c) Microsoft. All rights reserved.
using Azure.Identity;
using Microsoft.Agents.AI.Workflows;
using Microsoft.Agents.AI.Workflows.Declarative;
using Microsoft.Extensions.AI;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.Logging;
using Microsoft.Extensions.Logging.Abstractions;

internal sealed class WorkflowFactory(string workflowFile, Uri foundryEndpoint)
{
    public List<IWorkflow> Functions { get; init; } = [];

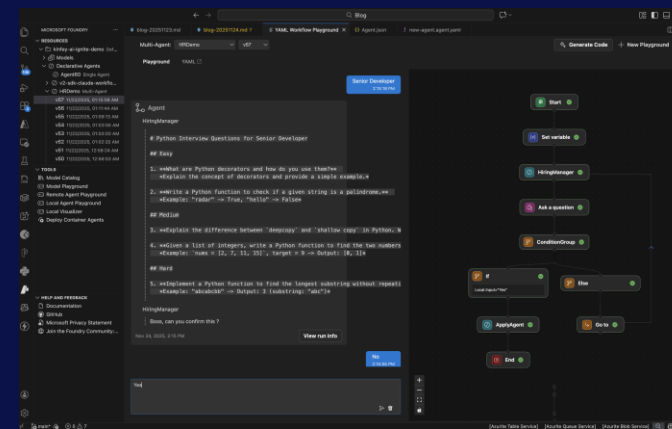
    public IConfiguration Configuration { get; init; }

    // Assign to continue an existing conversation
    public string ConversationId { get; init; }

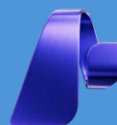
    // Assign to enable logging
    public ILoggerFactory LoggerFactory { get; init; } = NullLoggerFactory.Instance;

    // Summary
    // Create the workflow from the declarative YAML. Includes definition of the
    // workflow and the associated workflow agent provider.
    public Workflow CreateWorkflow()
    {
        // Create the agent provider that will service agent requests within the workflow.
        // Note: This is a declarative workflow agent provider. See Azure.AI.OpenAI for more details.
        // Functions included here will be auto-executed by the framework.
        return new Workflow(
            Functions,
            new DeclarativeWorkflowAgentProvider(this, foundryEndpoint));
    }
}
```

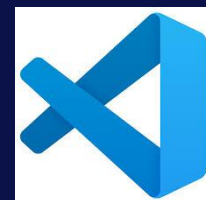
Development (Code)



Microsoft Foundry VSCode Extension



Workflow (YAML)



更多资源

Microsoft Agent Framework

<https://github.com/microsoft/agent-framework>

Microsoft Agent Framework Samples

<https://github.com/microsoft/agent-framework-samples>

企业级的多智能体解决方案

<https://github.com/microsoft/aitour26-BRK445-building-enterprise-ready-ai-agents-with-azure-ai-foundry>

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THANK YOU