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Microsoft

AI-500

Designing and Implementing
Multi-Agent AI Solutions

Exam Topic: Architect multi-agent solutions (Testlet 1)

This is a case study.

Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam.

You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All**

Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs.

When you are ready to answer a question, click the **Question** button to return to the question.

Overview

Contoso, Ltd. is a health provider. The company is building an Azure-based multi-agent solution to streamline patient triage, access historical medical records, and schedule specialist appointments.

Existing Environment**Microsoft Foundry**

Contoso has a Microsoft Foundry project named HealthAssist that contains the following agents:

- Patient Intake: A public-facing chat interface where patients describe their symptoms
- Record Retrieval: An internal system that retrieves a patient's past medical history from a secure database
- Scheduling: Integrates with an external third-party booking system by using a Model Context Protocol (MCP) server
- Lead Orchestrator: A workflow agent that makes decisions based on the output of the other agents

Knowledge Base

Contoso uses a Retrieval-Augmented Generation (RAG) system that contains clinical documents. Only the Patient Intake agent can access the RAG system.

Problem Statements

Contoso identifies the following issues:

- The MCP server used by the Scheduling agent frequently times out during peak load.
- Patients report that during the intake process, the session frequently times out silently without indicating why.

The issue occurs during workflow execution.

- Occasionally, the Patient Intake agent cannot extract relevant symptoms when patients provide verbose personal stories that are irrelevant to the medical issue.
- When the Patient Intake agent engages in long, multi-turn conversations with patients, the accumulating conversation history causes high latency due to massive prompt sizes and risks that exceed the model's context window.

Requirements

Business Requirements

Contoso identifies the following business requirements:

- A physician must approve any triage assessments that recommend an emergency room visit.
- HealthAssist must be able to handle large spikes in concurrent patient intake requests during flu season.
- Before releasing updates to HealthAssist, the clinical team must review the accuracy of the Lead

Orchestrator agent triage routing decisions against a set of historical test cases.

Safety Requirement

Contoso identifies the following safety requirements:

- Implement a robust guardrail strategy to prevent HealthAssist from providing inappropriate medical diagnoses.
- Ensure that all public-facing agents block violence and hate speech.
- Prevent hardcoding new logic into the agents' core prompt.

Consultant Proposal

A consulting firm proposes the following solution to address various requirements and issues:

- Add a guardrail that has the highest sensitivity for all controls.
- Add a system prompt message to direct the agent to ignore hate speech.
- Implement a short-term memory context window that prompts patients multiple times to verify their symptoms.
- Add a system prompt message to direct the agent to recommend an emergency room visit if the patient is having heart palpitations.

Security Requirements