Activity 1:

User Story 6: Prompt Engineering for Optimized Chatbot Responses

Feature Description:

Administrators need to define and manage prompt templates used by the chatbot to ensure responses are contextually accurate, consistent, and aligned with Student Affairs guidelines.

Application of the Strategy Pattern:

Strategy Interface: Define a unified interface declaring a method for generating responses.

Concrete Strategies:

Academic Strategy: Generates responses based on academic-related keyword matching.

Facility Strategy: Uses predefined templates for campus facility locations and operating hours.

Event Strategy: Dynamically generates recommendations based on an event database.

Context Class: The chatbot dynamically selects a strategy based on the user query's context.

Validation Points:

·Administrators can select different prompt templates (strategies) via configuration without modifying the chatbot's core code.

·Supports version control and sandbox testing for flexible strategy switching (e.g., rolling back to older templates).

·Response generation logic for each strategy is encapsulated independently, adhering to the **Open/Closed Principle** (open for extension, closed for modification).

Conclusion：

In user story 6, the strategy pattern is used to implement flexible configuration of chatbot answer generation, supporting dynamic switching of different prompt templates (strategies), thereby meeting the administrator's needs to optimize answer accuracy and consistency.

Activity 2:

Mock object is not suitable for our project, so we did not use it.