

# Pattern Chatbot Functionality

## Description

### Overview

The **Pattern Chatbot** is an interactive chatbot designed to help users discover, explore, and manage design patterns based on their requirements. The chatbot provides a user-friendly experience, allowing users to easily navigate through a set of design patterns, find the nearest pattern to one they've already identified, or print all available patterns. Users interact with the chatbot by selecting options through simple numeric input.

## Features and Functionalities

### 1. Guided Pattern Search

- **Purpose:** The chatbot guides users through a series of questions to help them identify the most suitable design pattern for their needs.
- **How it works:**
  - Users answer questions by selecting one of the given options, which help filter and refine the possible design patterns.
  - The chatbot suggests relevant patterns based on the user's responses.

#### *Example Interaction:*

- Chatbot: "What kind of integration are you looking for?"  
"Internal services", "External clients", "External systems (generic)"
- The user selects the option by entering the option, and the chatbot provides a list of patterns that best fit the user's choice. For example, enter External systems as response.

### 2. Find Nearest Pattern

- **Purpose:** Users can find the closest design pattern to one they already know, which can be helpful when users are unsure about the exact name of the pattern they need.

- **How it works:**
  - Users input a pattern they are familiar with.
  - The chatbot compares the provided pattern with others in its database, using a similarity algorithm (e.g., based on pattern characteristics) to suggest the nearest match.

***Example Interaction:***

- Chatbot: "Please enter the name of the pattern you are looking for."
- User: "Microservices"
- Chatbot: "The nearest pattern to 'Microservices' is 'Service-Oriented Architecture' (SOA)."

### **3. List All Available Patterns**

- **Purpose:** The chatbot can list all the available patterns in the system for the user to explore.
- **How it works:**
  - Users can request the full list of available design patterns, which the chatbot will print out.
  - This is especially useful when users are exploring patterns and unsure which one they need.

***Example Interaction:***

- Chatbot: "Here are all available design patterns:"  
 “Microservices”, “ Service-Oriented Architecture (SOA)”, “Command Pattern”,  
 “Singleton”, ...
  - ...