Name: Prachi Shedge  
Roll No.: 381050  
PRN: 22311647

**Assignment 9: Implement a College Chatbot using Java**

**Problem Statement:**  
Design and implement a simple rule-based chatbot in Java that can answer frequently asked questions related to a college, such as admission, courses, fees, hostel, placements, and library details.

**Objectives:**

* To understand the working of a simple rule-based chatbot.
* To implement keyword-based matching for generating responses.
* To apply basic string manipulation and conditional logic in Java.

**Theory:**  
A chatbot is an artificial intelligence program that simulates human conversation. Rule-based chatbots work on predefined patterns or keywords to respond appropriately. In this assignment, the chatbot uses a knowledge base containing common queries and their respective responses. When a user inputs a question, the chatbot searches for matching keywords and displays the corresponding answer.

**Working Principle / Algorithm:**

1. Create a knowledge base with pairs of keywords and responses.
2. Accept user input and convert it to lowercase for comparison.
3. Match the input against each keyword in the knowledge base.
4. If a keyword is found, return the corresponding response.
5. If no keyword matches, return a default message.
6. Continue the conversation until the user types “exit”.

**Advantages:**

* Simple and easy to implement.
* Provides quick responses for predefined queries.
* Useful for automating basic college-related inquiries.

**Disadvantages / Limitations:**

* Cannot handle complex or unknown queries.
* Works only with predefined keywords.
* Lacks natural language understanding.

**Conclusion:**  
The rule-based college chatbot successfully answers basic college-related questions using keyword matching. Although limited in flexibility, it demonstrates the basic principles of chatbot development and human-computer interaction.