TEAM-CODE WARRIORS

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MEMBERS

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✅ Project Structure (Basic Version)

CampusChatBotProject/
│
├── 📄 CampusChatBot.java ← Your chatbot code goes here
├── 📄 README.md ← (Optional) Description, instructions, features
└── 📁 out/ ← (Auto-created) Compiled class files

```
import java.util.*;

public class CampusChatBot {
    private static final Map<String, String> knowledgeBase = new HashMap<>();

    public static void main(String[] args) {
        initializeKnowledgeBase();
        Scanner scanner = new Scanner(System.in);

        System.out.println("CampusBot: Hi! Ask me anything about our campus (type 'exit' to quit).");

        while (true) {
            System.out.print("You: ");
            String userInput = scanner.nextLine().toLowerCase();

            if (userInput.contains("exit") || userInput.contains("bye")) {
                System.out.println("CampusBot: Goodbye! Have a great day.");
                break;
            }

            boolean found = false;
            for (String keyword : knowledgeBase.keySet()) {
                if (userInput.contains(keyword)) {
                    System.out.println("CampusBot: " + knowledgeBase.get(keyword));
                    found = true;
                    break;
                }
            }

            if (!found) {
                System.out.println("CampusBot: Sorry, I don't have an answer for that. Try rephrasing.");
            }
        }

        scanner.close();
    }
```

```
.
   private static void initializeKnowledgeBase() {
        knowledgeBase.put("admission", "Admissions are open
from June to August. Visit the admissions office or our
website.");
        knowledgeBase.put("library", "The library is open from 8
AM to 10 PM on weekdays.");
        knowledgeBase.put("hostel", "Hostels are available for
both boys and girls. Contact the hostel office for more
info.");
        knowledgeBase.put("placement", "Our placement cell
is active year-round. Companies visit mainly from October
to March.");
        knowledgeBase.put("canteen", "The canteen serves
food from 9 AM to 7 PM daily.");
        knowledgeBase.put("fees", "Fee details are available
on the official website or the accounts department.");
        knowledgeBase.put("courses", "We offer courses in
engineering, management, arts, and science.");
        knowledgeBase.put("transport", "Bus services are
available from 6 AM to 7 PM covering major city routes.");
        knowledgeBase.put("sports", "The campus has facilities
for cricket, football, basketball, and a gym.");
    }
}
```

Let's go through your **CampusChatBot** code line by line and explain everything in **simple terms**, so you understand **what each part does**:

import java.util.*;

This line imports **all utility classes** from the java.util package, like Scanner, Map, HashMap, etc., which you'll use later in the program.

public class CampusChatBot {

This starts the **definition of your main class** named CampusChatBot. Everything in your program is written inside this class.

private static final Map<String, String> knowledgeBase = new HashMap<>();

- private: This means only this class can access the variable.
- static: It belongs to the class itself, not objects.
- final: You cannot reassign **knowledgeBase** to another map later.
- Map<String, String>: A key-value pair data structure.
- new HashMap<>(): You are creating a new empty HashMap where:
    - the **key** is a String (like "library", "fees")
    - the **value** is also a String (the answer)

So this is your **knowledge base** – where you store question keywords and their answers.

public static void main(String[] args) {

This is the **main method** – the entry point of your Java program. When you run your code, this is the method that starts executing first.

initializeKnowledgeBase();
You're calling a method that fills the knowledgeBase with pre-defined question-answer pairs.

Scanner scanner = new Scanner(System.in);
This creates a Scanner object named scanner to **take user input from the keyboard** (standard input).

System.out.println("CampusBot: Hi! Ask me anything about our campus (type 'exit' to quit).");
This prints a welcome message on the screen to let the user know they can start chatting.

while (true) {
Starts an **infinite loop** — it keeps running until you manually break out (which you do when the user types "exit" or "bye").

System.out.print("You: ");
This displays a prompt to make it look like a chat.

String userInput = scanner.nextLine().toLowerCase();
- scanner.nextLine() takes a full line of text input from the user.
- .toLowerCase() converts it to lowercase so your bot can match keywords **case-insensitively**.

if (userInput.contains("exit") || userInput.contains("bye")) {
Checks if the user typed "exit" or "bye" anywhere in the input.

System.out.println("CampusBot: Goodbye! Have a great day.");
Prints a farewell message if the user wants to leave.

break;
Breaks out of the while (true) loop, stopping the chatbot.

boolean found = false;
This variable tracks whether the bot found a matching keyword in the user's message.

for (String keyword : knowledgeBase.keySet()) {
This loop goes through **each keyword** in the knowledge base (like "library", "hostel", etc.).

if (userInput.contains(keyword)) {
Checks if the user's message contains any of the known keywords.

System.out.println("CampusBot: " + knowledgeBase.get(keyword));
Prints the **answer** (value) from the knowledgeBase that matches the keyword.

found = true;
Sets found to true so we know a match was found.

break;
Exits the for loop after finding the **first matching keyword**.

if (!found) {
Checks if no keyword matched the user's input.

System.out.println("CampusBot: Sorry, I don't have an answer for that. Try rephrasing.");
If no keyword matched, this message is printed to suggest the user try again.

scanner.close();
Closes the Scanner object to release system resources. (Good practice)

private static void initializeKnowledgeBase() {
This method fills the knowledge base with fixed question-answer pairs (like "library" → "Library is open from...").

knowledgeBase.put("admission", "...");
Each of these lines adds a new **keyword-answer** pair into the knowledgeBase map.

✅ Summary:

This code is a **simple keyword-based chatbot** that:

- Takes user input,
- Looks for known words like "library", "fees", "hostel", etc.
- Replies with the answer if the keyword is found
- Says goodbye when the user types "exit" or "bye"

📚 Example Questions

- "Tell me about hostel"
- "What are the canteen timings?"
- "exit"

CampusBot: Hi! Ask me anything about our campus (type 'exit' to quit).
You: What are the library timings?
CampusBot: The library is open from 8 AM to 10 PM on weekdays.

You: Do we have hostel facility?
CampusBot: Hostels are available for both boys and girls. Contact the hostel office for more info.

You: What about placements?
CampusBot: Our placement cell is active year-round. Companies visit mainly from October to March.

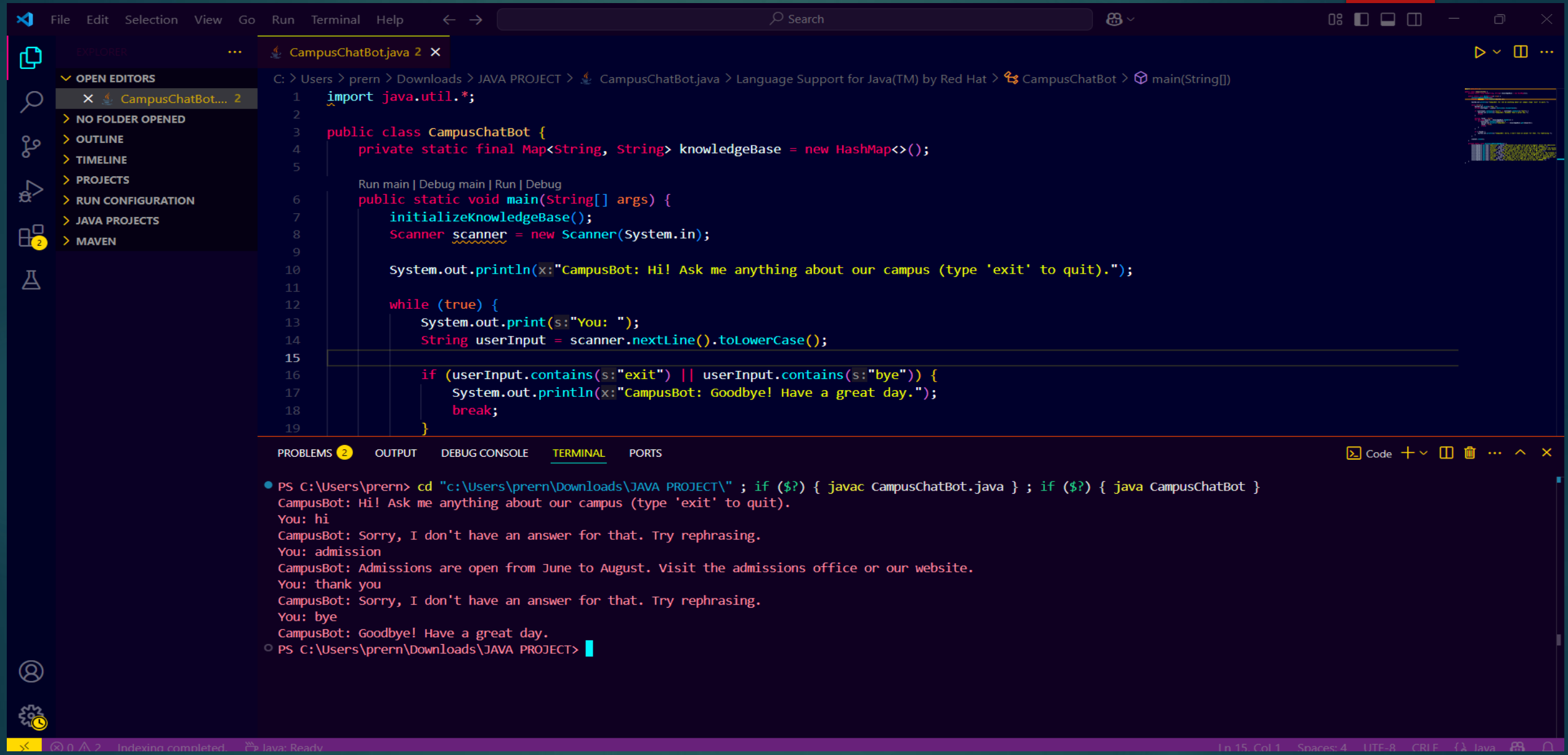
You: Can you tell me the fees?
CampusBot: Fee details are available on the official website or the accounts department.

You: Tell me about the food
CampusBot: Sorry, I don't have an answer for that. Try rephrasing.

You: canteen?
CampusBot: The canteen serves food from 9 AM to 7 PM daily.

You: bye
CampusBot: Goodbye! Have a great day.

SCREENSHOT


File Edit Selection View Go Run Terminal Help
Search
CampusChatBot.java 2
C: > Users > prern > Downloads > JAVA PROJECT > CampusChatBot.java > Language Support for Java(TM) by Red Hat > CampusChatBot > main(String[])
OPEN EDITORS
CampusChatBot.... 2
NO FOLDER OPENED
OUTLINE
TIMELINE
PROJECTS
RUN CONFIGURATION
JAVA PROJECTS
MAVEN
import java.util.*;
public class CampusChatBot {
private static final Map<String, String> knowledgeBase = new HashMap<>();
Run main | Debug main | Run | Debug
public static void main(String[] args) {
initializeKnowledgeBase();
Scanner scanner = new Scanner(System.in);
System.out.println(x:"CampusBot: Hi! Ask me anything about our campus (type 'exit' to quit).");
while (true) {
System.out.print(s:"You: ");
String userInput = scanner.nextLine().toLowerCase();
if (userInput.contains(s:"exit") || userInput.contains(s:"bye")) {
System.out.println(x:"CampusBot: Goodbye! Have a great day.");
break;
}
PROBLEMS 2
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
PS C:\Users\prern> cd "c:\Users\prern\Downloads\JAVA PROJECT\" ; if ($?) { javac CampusChatBot.java } ; if ($?) { java CampusChatBot }
CampusBot: Hi! Ask me anything about our campus (type 'exit' to quit).
You: hi
CampusBot: Sorry, I don't have an answer for that. Try rephrasing.
You: admission
CampusBot: Admissions are open from June to August. Visit the admissions office or our website.
You: thank you
CampusBot: Sorry, I don't have an answer for that. Try rephrasing.
You: bye
CampusBot: Goodbye! Have a great day.
PS C:\Users\prern\Downloads\JAVA PROJECT>

✅ Conclusion of CampusChatBot Project

The **CampusChatBot** project is a simple, beginner-friendly Java application that demonstrates how to:

- 🧠 Create a **keyword-based chatbot** using HashMap for storing campus-related FAQs.
- ⌨️ Use Scanner to take real-time user input.
- 🔁 Implement control flow using loops (while) and conditionals (if-else).
- 📚 Organize a basic Java project with clean structure and logical flow.

✅ Outcomes of the CampusChatBot Project

By completing the **CampusChatBot** project, here are the key **learning outcomes** and **skills developed**:

📘 Technical Outcomes:

1.Understanding of Java Basics

- Class & object structure
- main() method
- Access modifiers (public, private, static, final)

Working with Collections
•Learned how to use HashMap to store and retrieve keyword-answer pairs.

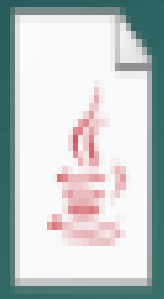
User Input Handling
•Took dynamic user input using Scanner.

Control Structures
•Applied if, else, and while loop to manage chatbot flow.

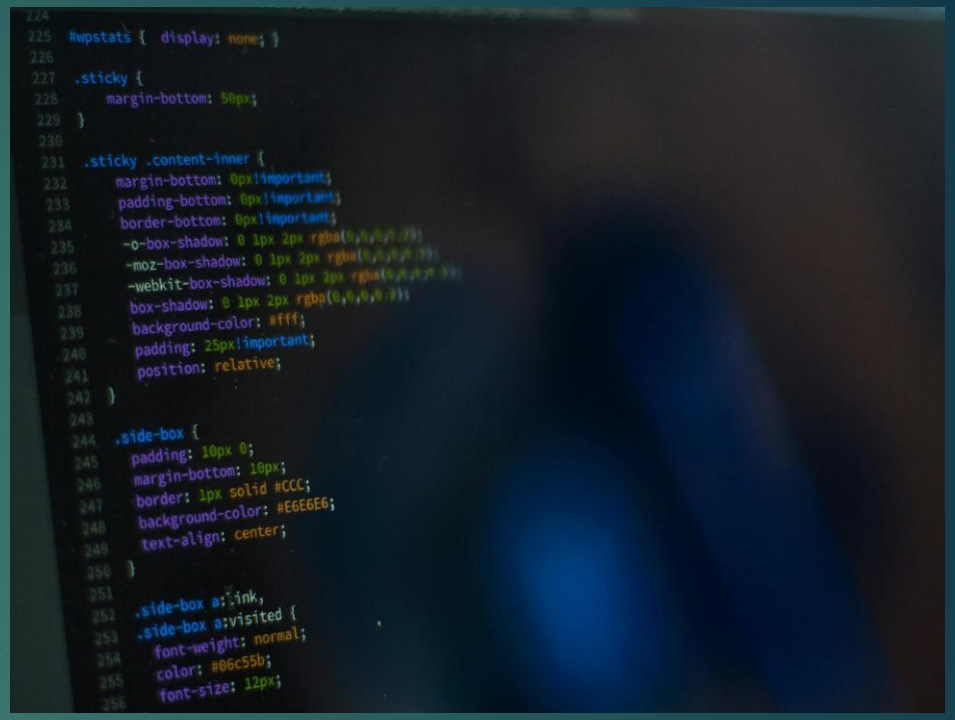
String Processing & Matching
•Used .toLowerCase() and .contains() to compare input with keywords case-insensitively.

🚀 Soft Outcomes:

- Improved **confidence in Java programming**
- Practiced **debugging and testing**
- Learned to **structure small-scale projects**
- Gained experience in writing **real-world use-case programs**



CampusChatBot.java



THANK YOU.....