List of Use Cases:

1. **Intelligent Quiz Generator:**

- **Description**: The bot generates customised quizzes based on the student's current syllabus, past performance, and areas needing improvement. It could adapt the difficulty of the questions in real-time to keep students engaged and learning efficiently.
- **Example**: A student requests a quiz on “Thermodynamics.” The bot pulls 10 questions from a database, starting with basic questions. As the student progresses, the bot notices they’re excelling in simpler questions and starts generating more complex, application-based ones. The bot tracks which types of questions the student struggles with and recommends additional reading material on those concepts

2. **AI-Powered Coding Companion**

- **Description**: This bot is designed to assist students in learning programming languages by offering constructive guidance rather than complete solutions. It detects errors in the student’s code, explains the root cause, and provides tailored hints to help them resolve the issues independently. By offering personalised feedback and suggesting further practice problems, the bot encourages active problem-solving and helps students deepen their understanding, ensuring they gain valuable coding skills instead of relying on the bot as an answer guide.
- **Example**: A student working on a Python project encounters a bug related to improper variable scoping. The bot provides a hint: "Check where the variable is defined and how it's being used across different functions." If the student asks for more help, the bot offers an explanation of scope in Python but encourages the student to apply the fix themselves. It then suggests a related exercise to reinforce the concept. As the student improves, the bot introduces more advanced topics to promote continued growth and learning.

3. **Language Learning Companion**

- **Description**: This bot helps students learn a new language by engaging them in conversations, correcting their grammar and vocabulary, and suggesting new words or phrases to improve fluency. It can provide explanations for idiomatic expressions and regional language differences.
- **Example**: A student is learning French and wants to practise conversing. The bot engages in a conversation, correcting any grammatical mistakes and offering explanations for tricky vocabulary. It notices the student is struggling with verb conjugations, so it recommends a few exercises to reinforce the concept.

4. **AI-Enhanced Career Guidance**

- **Description**: The bot analyses a student's academic performance, interests, and strengths to offer personalised career advice. It can suggest suitable career paths, internships, further study options, and even provide guidance on skill development based on industry trends.
- **Example**: A computer science student unsure about their career asks the bot for advice. The bot analyses their grades, projects, and interests (e.g., AI and machine learning) and suggests potential career paths such as data science or software development. It also recommends online courses and certification programs to build skills in those fields.

5. **Plagiarism Detection and Writing Assistant**

- **Description**: This bot helps students write better essays and reports by checking for plagiarism, offering suggestions for improving sentence structure and clarity, and giving feedback on the coherence and argumentation of their writing.
- **Example**: A student submits an essay on machine learning. The bot runs a plagiarism check, suggests ways to improve sentence

fluency, and offers a better thesis statement to strengthen the argument. It also flags paragraphs that are unclear and need revision.

6. **AI-Driven Project Advisor**

- **Description**: This bot assists students with project-based learning by helping them brainstorm ideas, find resources, manage timelines, and even troubleshoot technical issues. It could offer step-by-step guidance on how to approach the project from start to finish.
- **Example**: A student is building a machine learning model for image recognition. The bot provides resources on how to collect and preprocess data, suggests algorithms based on the project's complexity, and recommends tools and libraries for implementation.

7. **AI powered MS Application Assistant**

- **Description**: This bot assists students in finding the most suitable Master's programs (MS) based on their academic background, career aspirations, and personal preferences (e.g., location, tuition fees, program duration). It uses AI to analyse the student's interests, skills, and long-term goals, and recommends tailored MS courses from universities worldwide. The bot can also provide insights on admission requirements, scholarship opportunities, and potential career outcomes after completing the program.
- **Example**: A student with a Bachelor's degree in Computer Science is unsure whether to pursue an MS in Artificial Intelligence or Data Science. The bot asks about their career interests (e.g., research, industry jobs), preferred study locations, and financial situation. After gathering this information, the bot suggests top programs in AI from universities like Stanford, MIT, and ETH Zurich, highlighting each program's key strengths (e.g., research opportunities, faculty expertise, industry partnerships). It also provides information on required GRE scores, scholarships, and average salaries of graduates from each program.