

 DR. D. Y. PATIL INSTITUTE OF ENGINEERING, MANAGEMENT AND RESEARCH	Dr D Y Patil Pratishthan's Dr. D.Y. Patil Institute of Engineering, Management and Research, Akurdi, Pune	DI No.: ACAD/DI/72
Academic Year: 2025-26	Weekly Report Format for Internship	Revision : 00 Dated : 20/11/2019
Term - II	Department : Computer Engineering	Date of Preparation : 14/02/2026

Weekly Report Format for Internship

Roll No: 23101

Name of the Student: Ruhan Saad Dave

Name of the Company: CODTECH IT SOLUTIONS PVT.LTD

Domain of Internship: Artificial Intelligence

Name of the Internal Guide: Akanksha Kulkarni

Name of the External Guide: Neela Santhosh Kumar

Duration of Internship: 03 Jan 2026 to 14 Feb 2026

Week-III Dates: 17/01/2026 to 24/01/2026

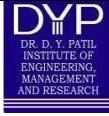
Description of Work Done Till Date (Week 3):

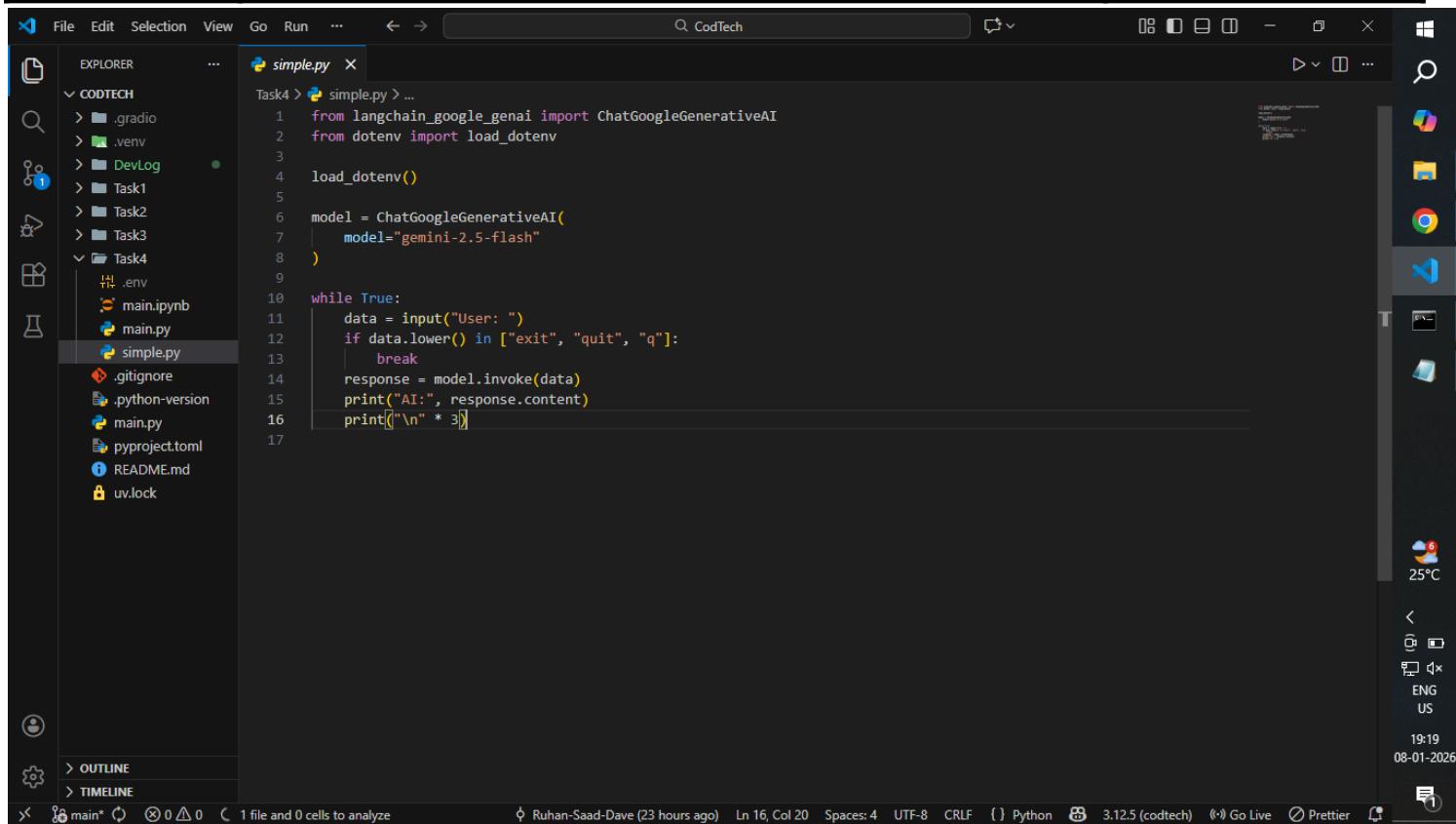
Task 2 & 4 - Speech Recognition and Text Generation (Initial Versions)

- Task 2 (Speech Recognition):
 - Implemented a basic Speech-to-Text system using the ‘SpeechRecognition’ library.
 - Created a simple script that successfully transcribes spoken words from an audio source.
- Task 4 (Generative Text Model):
 - Developed the initial version of the generative text model.
 - Integrated the LangChain framework with the Google Gemini API (gemini-2.5-flash).
 - Implemented a feature for continuous chat, allowing the model to remember conversation history
 - Used ‘python-dotenv’ to securely manage the API key.

 DYP DR. D. Y. PATIL INSTITUTE OF ENGINEERING, MANAGEMENT AND RESEARCH	<p>Dr D Y Patil Pratishthan's</p> <p>Dr. D.Y. Patil Institute of Engineering, Management and Research,</p> <p>Akurdi, Pune</p>	DI No.: ACAD/DI/72
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Supporting Documents:

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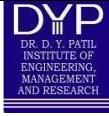
The screenshot shows the Visual Studio Code (VS Code) interface. The left sidebar displays the file structure of a project named 'CODTECH'. Inside 'Task4', there is a folder 'simple.py' containing a Python script. The script code is as follows:

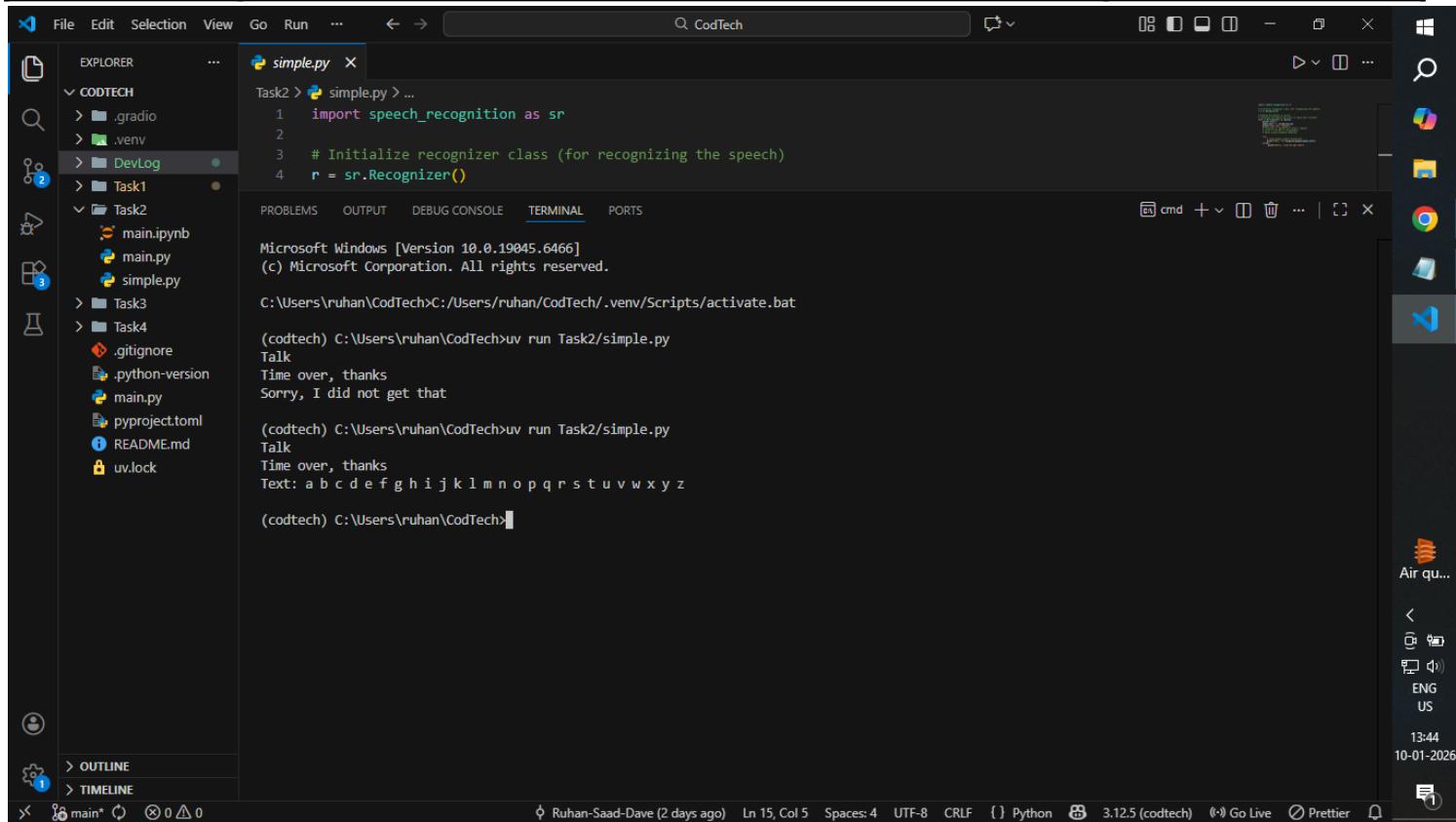
```

Task4 > simple.py > ...
1  from langchain_google_genai import ChatGoogleGenerativeAI
2  from dotenv import load_dotenv
3
4  load_dotenv()
5
6  model = ChatGoogleGenerativeAI(
7      model="gemini-2.5-flash"
8  )
9
10 while True:
11     data = input("User: ")
12     if data.lower() in ["exit", "quit", "q"]:
13         break
14     response = model.invoke(data)
15     print("AI:", response.content)
16     print("\n" * 3)
17

```

The status bar at the bottom shows the following information: 'main*' (file name), '0△0' (status), '1 file and 0 cells to analyze', 'Ruhan-Saad-Dave (23 hours ago)', 'Ln 16, Col 20', 'Spaces: 4', 'UTF-8', 'CRLF', 'Python', '3.12.5 (codtech)', 'Go Live', 'Prettier', and the date '08-01-2026'. On the right side of the screen, there is a system tray with icons for battery, signal, temperature (25°C), and other system status.

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The screenshot shows a code editor interface with a terminal window. The terminal window displays the following text:

```

Microsoft Windows [Version 10.0.19045.6466]
(c) Microsoft Corporation. All rights reserved.

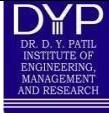
C:\Users\ruhan\CodTech>C:/Users/ruhan/CodTech/.venv/Scripts/activate.bat

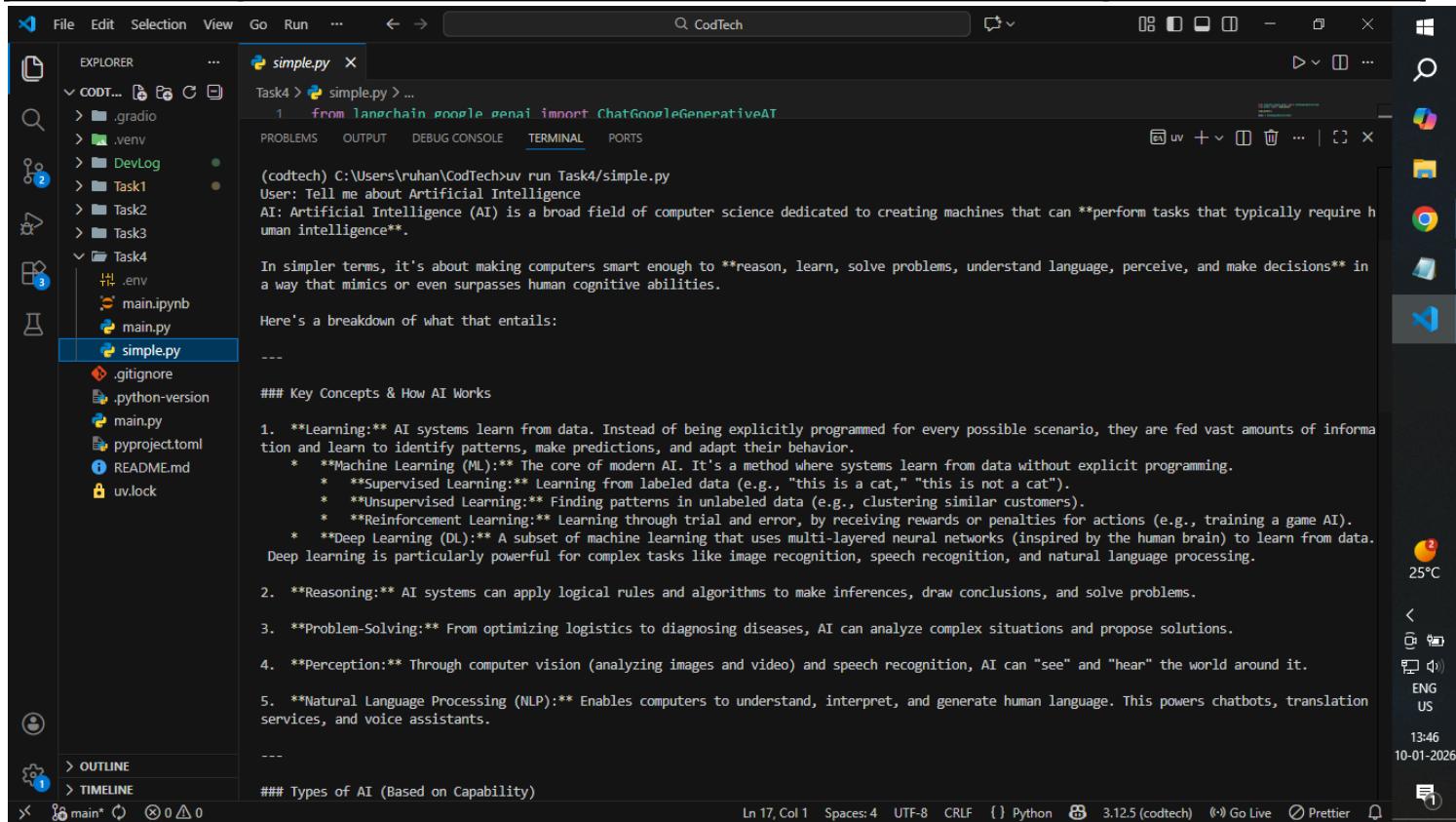
(codtech) C:\Users\ruhan\CodTech>uv run Task2/simple.py
Talk
Time over, thanks
Sorry, I did not get that

(codtech) C:\Users\ruhan\CodTech>uv run Task2/simple.py
Talk
Time over, thanks
Text: a b c d e f g h i j k l m n o p q r s t u v w x y z

(codtech) C:\Users\ruhan\CodTech>

```

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The screenshot shows a terminal window with the following content:

```

simple.py
Task4 > simple.py > ...
1   from langchain.google import ChatGoogleGenerativeAI
(codetech) C:\Users\ruhan\codetech>uv run Task4/simple.py
User: Tell me about Artificial Intelligence
AI: Artificial Intelligence (AI) is a broad field of computer science dedicated to creating machines that can **perform tasks that typically require human intelligence**.

In simpler terms, it's about making computers smart enough to **reason, learn, solve problems, understand language, perceive, and make decisions** in a way that mimics or even surpasses human cognitive abilities.

Here's a breakdown of what that entails:
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### Key Concepts & How AI Works

1. **Learning:** AI systems learn from data. Instead of being explicitly programmed for every possible scenario, they are fed vast amounts of information and learn to identify patterns, make predictions, and adapt their behavior.
    * **Machine Learning (ML):** The core of modern AI. It's a method where systems learn from data without explicit programming.
    * **Supervised Learning:** Learning from labeled data (e.g., "this is a cat," "this is not a cat").
    * **Unsupervised Learning:** Finding patterns in unlabeled data (e.g., clustering similar customers).
    * **Reinforcement Learning:** Learning through trial and error, by receiving rewards or penalties for actions (e.g., training a game AI).
    * **Deep Learning (DL):** A subset of machine learning that uses multi-layered neural networks (inspired by the human brain) to learn from data. Deep learning is particularly powerful for complex tasks like image recognition, speech recognition, and natural language processing.

2. **Reasoning:** AI systems can apply logical rules and algorithms to make inferences, draw conclusions, and solve problems.

3. **Problem-Solving:** From optimizing logistics to diagnosing diseases, AI can analyze complex situations and propose solutions.

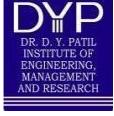
4. **Perception:** Through computer vision (analyzing images and video) and speech recognition, AI can "see" and "hear" the world around it.

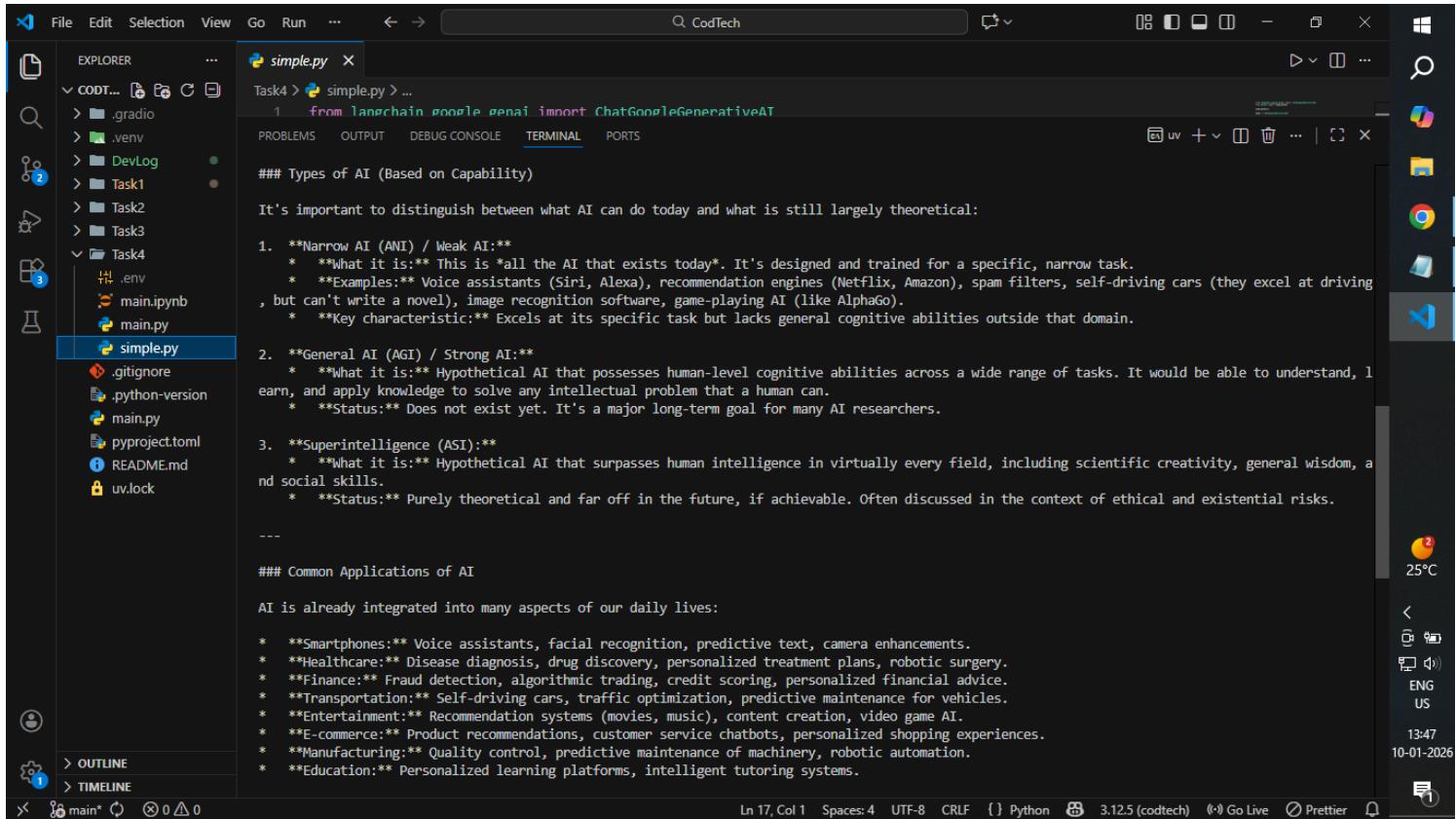
5. **Natural Language Processing (NLP):** Enables computers to understand, interpret, and generate human language. This powers chatbots, translation services, and voice assistants.

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### Types of AI (Based on Capability)


```

Terminal status: Ln 17, Col 1 Spaces: 4 UTF-8 CRLF {} Python 3.12.5 (codetech) ⌂ Go Live ⌂ Prettier ⌂

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The screenshot shows a code editor interface with a Python file named `simple.py` open. The code discusses the types of AI (Narrow AI, General AI, Superintelligence) and common applications of AI (Smartphones, Healthcare, Finance, Transportation, Entertainment, E-commerce, Manufacturing, Education). The code uses triple quotes to define terms like "What it is", "Examples", and "Status". The code editor includes a sidebar with project files like `.gitignore`, `.python-version`, `main.py`, `pyproject.toml`, `README.md`, and `uv.lock`.

```

from langchain.google.pagen import ChatGoogleGenerativeAI

### Types of AI (Based on Capability)

It's important to distinguish between what AI can do today and what is still largely theoretical:

1. **Narrow AI (ANI) / Weak AI:**  

   * **What it is:** This is *all the AI that exists today*. It's designed and trained for a specific, narrow task.  

   * **Examples:** Voice assistants (Siri, Alexa), recommendation engines (Netflix, Amazon), spam filters, self-driving cars (they excel at driving, but can't write a novel), image recognition software, game-playing AI (Like AlphaGo).  

   * **Key characteristic:** Excels at its specific task but lacks general cognitive abilities outside that domain.

2. **General AI (AGI) / Strong AI:**  

   * **What it is:** Hypothetical AI that possesses human-level cognitive abilities across a wide range of tasks. It would be able to understand, learn, and apply knowledge to solve any intellectual problem that a human can.  

   * **Status:** Does not exist yet. It's a major long-term goal for many AI researchers.

3. **Superintelligence (ASI):**  

   * **What it is:** Hypothetical AI that surpasses human intelligence in virtually every field, including scientific creativity, general wisdom, and social skills.  

   * **Status:** Purely theoretical and far off in the future, if achievable. Often discussed in the context of ethical and existential risks.

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### Common Applications of AI

AI is already integrated into many aspects of our daily lives:  

* **Smartphones:** Voice assistants, facial recognition, predictive text, camera enhancements.  

* **Healthcare:** Disease diagnosis, drug discovery, personalized treatment plans, robotic surgery.  

* **Finance:** Fraud detection, algorithmic trading, credit scoring, personalized financial advice.  

* **Transportation:** Self-driving cars, traffic optimization, predictive maintenance for vehicles.  

* **Entertainment:** Recommendation systems (movies, music), content creation, video game AI.  

* **E-commerce:** Product recommendations, customer service chatbots, personalized shopping experiences.  

* **Manufacturing:** Quality control, predictive maintenance of machinery, robotic automation.  

* **Education:** Personalized learning platforms, intelligent tutoring systems.

```

Student Sign

Internal Guide Sign