<p align="center">**AI and Machine Learning Applications**</p>

<p align="center">**Class 6-8**</p>

<p align="center">**Understanding Artificial Intelligence: Basics and Everyday Uses**</p>

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In a remote village of Uttarakhand, the students of Government School eagerly awaited a special guest lecture from a renowned scientist visiting from the United States of America. It was a rare opportunity, but there was a challenge — the scientist spoke only English, and many villagers, including students and their teachers, were more comfortable with Hindi.

Seeing the hesitation, Prasad, the Science teacher, decided to use **Bashini**, a revolutionary AI language translation platform introduced by the Government of India. With Bashini, Prasad projected the scientist's words on the screen, where they were translated in real-time from English to Hindi. As the scientist spoke passionately about the importance of clean energy, the students followed along effortlessly, understanding every word. They asked questions in Telugu, and **Bashini** translated their words back into English, allowing for a lively and interactive session.

The lecture concluded with smiles and applause. For the first time, the language barrier that had divided the villagers from global knowledge was broken down. Thanks to **Bashini**, the students felt connected to a world beyond their village, confident that their voices could be heard, no matter the language.
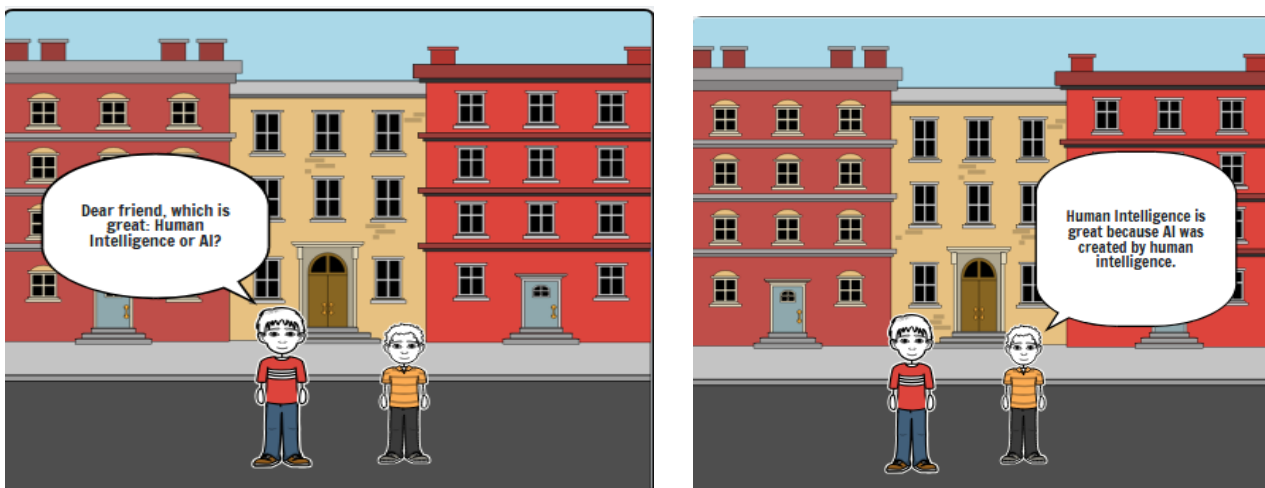

<p align="center">Credit: https://bhashini.gov.in/</p>

Human being is the most intelligent animal on this earth. Now let us try to understand what is intelligence? Intelligence is the ability to learn, understand, and apply knowledge effectively.

Then let's try to understand what is human intelligence? Human intelligence is the ability of people to think, learn, and solve problems. Human beings possess cognitive capabilities that are unique such as: Thinking, Learning and Problem-solving. These unique capabilities of the human mind made man to discover the fire, wheel, paper and pen. Later many inventions and discoveries happened and now we are enjoying many comforts because of the cognitive abilities of the man.

Imagine that if these cognitive abilities are done by machines instead of human beings, then it is termed as artificial intelligence.

Artificial intelligence refers to the ability of machines, like computers and robots, to perform tasks that normally require human intelligence and cognitive abilities.

Conversation between two students about AI

Artificial Intelligence (AI) traces its roots back to the 1950s when computer scientists like Alan Turing began exploring the idea of creating machines that could mimic human intelligence. Turing's "Turing Test" in 1950 was an early attempt to define a machine's ability to exhibit intelligent behaviour. The term "Artificial Intelligence" was first coined by John McCarthy in 1956 during the Dartmouth Conference, which is considered the birthplace of AI as a field of study. Early developments focused on symbolic reasoning and problem-solving, laying the groundwork for AI's rapid evolution into areas like machine learning and neural networks.

How Human Intelligence Differs from Artificial Intelligence (AI):

Human Intelligence	Artificial Intelligence
It is based on the brain's biological processes, which are flexible, adaptive, and influenced by emotions and consciousness.	It involves machines designed to mimic human cognitive functions but lacks emotions, consciousness, and true creativity.

Artificial Intelligence (AI) refers to the field of computer science dedicated to creating systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and language understanding. AI operates through algorithms and data, enabling machines to mimic cognitive functions and make decisions based on input. Artificial Intelligence (AI) encompasses various subfields, such as machine learning, where systems improve their performance over time through experience, and natural language processing, which allows machines to understand and generate human language. Another critical area is robotics, which involves designing machines capable of performing physical tasks autonomously.

Let us understand how AI is being used in our real-life situations:

1. Voice Assistants

Example: *Google Assistant* or *Siri*

AI helps voice assistants like Google Assistant or Siri understand and respond to our voice commands. For example, if you ask, "What's the weather today?", these voice assistants

use AI to listen, understand the question, and give you the answer in seconds. It's like having a smart helper who can talk and answer your questions.

2. Online Shopping

Example: *Amazon or Flipkart Recommendations*

When you shop online, websites like Amazon or Flipkart recommend products based on your past searches. AI looks at what you have clicked on or purchased before and suggests other things you might like. For example, if you bought a football, the website might suggest shoes or jerseys, helping you find things that match your interests.

3. Face Recognition

Example: *Unlocking your phone*

Many smartphones use AI to unlock the phone by recognizing your face. It's like having a secret password, but instead of typing, the phone just looks at your face and opens up! This is an example of how AI helps in security and making things easier for us.

4. Railway Tickets Booking

Example: *IRCTC Food Ordering* (Indian Railway Catering and Tourism Corporation)

If you book a train ticket through IRCTC, the website may show food options like 'E-catering services, which allow you to choose meals from restaurants near your station. These services are powered by AI to predict the best choices for you based on your preferences or past behaviour.

AI can assist the teachers by…
1) AI-Powered Lesson Planning
2) Enhanced Assessment Tools
3) Language Learning and Translation Assistance
4) AI-Driven Student Analytics
5) Personalized Learning Pathways
6) Classroom Management with AI Tools

Understanding the basics of Artificial Intelligence (AI) is crucial in today's rapidly evolving world. AI is not only transforming every sector and also becoming an integral part of our daily lives, from personal assistants like Google Assistant to more advanced applications such as healthcare diagnostics and autonomous vehicles. As we continue to integrate AI into various sectors, it is important for us to be equipped with the knowledge to navigate and harness its potential responsibly. The future of AI holds immense possibilities, and understanding its fundamentals will empower the next generation to shape a smarter, more efficient world.