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# Programming language!

A **programming language** is a formal language used to give instructions to a computer. It allows humans (programmers) to write code that a computer can understand and execute to perform tasks like calculations, data processing, controlling devices, creating software, and more.

## Types of language:

C

Java

JavaScript

C++

HTML/CSS

SQL

Python

## Syntax of the popular languages

C:

#include<stdio.h>

int main() {

printf("Hello World");

return 0;

}

Java:

public class Main {

public static void main(String[] args) {

System.out.println("Hello World");

}

}

Python:

print("Hello World")

JavaScript:

console.log("Hello World");

SQL:

SELECT name FROM students;

C++:

#include<iostream>

using namespace std;

int main() {

cout << "Hello World";

return 0;

}

# AI/ML

## WHAT IS AI?

**Artificial Intelligence** is a field of computer science that focuses on creating machines and software that can **think, learn, and make decisions like humans**.

## WHAT IS ML?

**Machine Learning** is a **subfield of AI**. It allows computers to **learn from data** and **improve automatically** without being explicitly programmed.

EXAMPLE OF AI IN DAILY LIFE:

* ChatGPT
* Alexa , Google Assistant , Siri
* YouTube ,Netflix
* Google Map
* Facelock in phone

EXAMPLE OF ML IN LIFE:

* Email spam detection
* Product recommendations in AMAZON
* Predicting weather
* Stock market forecasting

## Key Differences:

* AI is the broader concept, while ML is a specific technique within AI.
* AI aims to create intelligent systems that can perform a wide range of tasks, while ML focuses on enabling systems to learn from data for specific tasks.
* ML relies on data analysis and pattern recognition to improve performance, while AI can involve other approaches like expert systems or rule-based programming.

## How are AI and ML connected?

While AI and ML are not quite the same thing, they are closely connected. The simplest way to understand how AI and ML relate to each other is:

* AI is **the broader concept** of enabling a machine or system to sense, reason, act, or adapt like a human
* ML is **an application of AI** that allows machines to extract knowledge from data and learn from it autonomously

One helpful way to remember the difference between machine learning and artificial intelligence is to imagine them as umbrella categories. Artificial intelligence is the overarching term that covers a wide variety of specific approaches and algorithms. Machine learning sits under that umbrella, but so do other major subfields, such as deep learning, robotics, expert systems, and [natural language processing](https://cloud.google.com/learn/what-is-natural-language-processing)

# IT recession

An **IT recession** refers to a period of economic slowdown or decline in the **Information Technology industry**. This can impact jobs, company profits, investments, and innovation in tech-related sectors like software, hardware, services, and startups.

## Key Characteristics:

* **Widespread Decline:**

Recessions impact various sectors of the economy, not just one or two.

* **Prolonged Period:**

A recession is not a short-term blip but a sustained period of economic downturn.

* **Negative GDP Growth:**

A common indicator is two consecutive quarters of negative Gross Domestic Product (GDP) growth, which measures the total value of goods and services produced.

* **Rising Unemployment:**

As businesses slow down, they tend to lay off workers, leading to increased unemployment rates.

* **Decreased Spending and Investment:**

Consumers and businesses tend to cut back on spending and investment during a recession, further exacerbating the decline

## Impacts of Recessions:

* **Job Losses:**

Increased unemployment is a major consequence of recessions, leading to financial hardship for many individuals and families.

* **Reduced Income:**

With job losses and business closures, overall household income tends to decrease during a recession.

* **Lower Investment:**

Businesses may postpone or cancel investment projects, impacting long-term economic growth.

* **Stock Market Declines:**

Recessions often lead to a decline in stock market values, impacting investors and retirement savings.

* **Increased Borrowing Costs:**

During a recession, interest rates may rise, making it more expensive for individuals and businesses to borrow money.