



Tecnologias de Informação / Information Technology

Year 2026/2027

Introduction

IT x IS

IT vs IS

- IT is the technology.
- IS is the technology + people + processes + data used to achieve a purpose.
- IT is the infrastructure.
- IS is the system that uses that infrastructure to produce information and support organizational activities and decisions.

What technologies does Uber use?

- Smartphones
- GPS
- Internet
- Cloud computing
- Databases
- Algorithms
- Payment systems
- AI

Is Uber's technology alone the Information System?

Uber	IT or IS?
GPS	IT
Smartphone	IT
Cloud servers	IT
Database	IT
Driver	Part of IS
Passenger	Part of IS
Matching driver ↔ passenger	IS
Payment process	IS
Customer-rating process	IS
Entire Uber platform supporting the business	IS

The 'technology → information → decision' chain

DATA → INFORMATION → KNOWLEDGE → DECISION → ACTION

- A supermarket collects:
 - 1,250 transactions today.
 - That's **data**.
- The system identifies:
 - Sales of ice cream increased 35% on hot days.
 - That's **information**.
- The manager understands:
 - Temperature strongly influences ice-cream demand.
 - That's **knowledge**.
- The manager decides:
 - Increase inventory tomorrow.
- That's a **decision**.
 - The company changes its purchasing:
- Order more ice cream.
 - That's **action**.
- “Where is IT?”
 - IT enables the collection, storage, processing, and communication of data.
- “Where is IS?”
 - The entire organizational system connecting **technology, people, processes, information and decisions**.

IT or IS? Game

Classify each item in column 1 as IT, IS, or Both/depends.

Description	IT or IS?
1. SAP (Systems, Applications, and Products in Data Processing)	
2. Wi-Fi	
3. Amazon's recommendation system	
4. A database	
5. A company's payroll process	
6. A smartphone	
7. A CRM system	
8. A manager using sales data to decide inventory	
9. An ERP system	
10. Microsoft Excel	
11. Python	

Every IS uses IT, but IT alone is not necessarily an IS.

IT or IS? Game Answer

#	Example	Answer	Why?
1	SAP	Both / depends	SAP is software/IT, but an SAP implementation supports people, processes, data, and organizational decisions—making it part of an IS.
2	Wi-Fi	IT	Wi-Fi is network infrastructure/technology.
3	Amazon's recommendation system	IS	It integrates technology, data, algorithms, people, and business processes to support recommendations and sales.
4	A database	IT	A database is a technological resource for storing and managing data.
5	A company's payroll process	IS	It involves people, procedures, data, rules, and usually technology working together.
6	A smartphone	IT	A smartphone is a technological device.
7	A CRM system	IS	A CRM integrates technology, customer data, users, and business processes such as sales and customer service.
8	A manager using sales data to decide inventory	IS	It involves data, people, technology/processes, information, and decision-making.
9	An ERP system	Both / depends	ERP software is IT, but the ERP system in an organization encompasses processes, people, data, and technology.
10	Microsoft Excel	IT	Excel is software - a technological tool. However, when used within a broader organizational system, it can become part of an IS.
11	Python	IT	Python is a programming language, so it is a technological tool. By itself, it is IT. However, a Python-based application can become a component of an Information System when integrated with people, processes, data, and organizational objectives.

Closing Questions

1. Can an organization have IT without an effective Information System?
2. Can an Information System exist without modern IT?
3. Why is this distinction important for managers?

Final Remarks

- So, when you see a new technology
 - artificial intelligence, cloud computing, blockchain, big data, or whatever comes next
 - don't simply ask: **What does this technology do?**
- As a manager, ask:
 - **What problem can it solve?**
 - **How will people use it?**
 - **Which processes will change?**
 - **What data do we need?**
 - **How will this create value for the organization?**