

# Main fields of computing

Computing is an umbrella term whose main fields are computer science, ICT, IT, and digital literacy.

Sometimes these terms can overlap or may be used in the wrong way.

## ■ Computer science

The term **computer science**, or **CS**, was used for the first time in 1961 by the mathematician George Forsythe. However, the most complete definition was provided by the Linux Information Project (LINFO) in 2004. It is the study of the storage, transformation, and transfer of information. It includes both the theoretical study of algorithms (design, efficiency and application) and the practical aspects of **implementing** them for computer hardware and software. In short, computer science studies how computers work and how to write algorithms, solve problems and create computer programs.

## ■ Information and communications technology

**Information and communications technology**, or **ICT**, refers to the evolving digital technology and the aspects of **gathering**, storing, **retrieving**, processing, analysing and transmitting information and data at the right speed and with accuracy and security. So, it deals with data representation and management by computers. The acronym has been used worldwide since 1997, although in 2014, in the UK, it was replaced by the word **computing**.



## ■ Information technology


**Information technology**, or **IT**, is sometimes used as a synonym of ICT, but while ICT refers to digital communication (e.g. the Internet, Wi-Fi, smartphones and communication systems), IT deals with the development of hardware and software.

## ■ Digital literacy



**Digital literacy** refers to multiple literacy competences and skills recognised as fundamental for lifelong learning. In other words, being digitally literate means being good **netizens**, i.e. responsible citizens of the cyber world. For this reason, new graduate programmes have been designed in order to develop new competences to be able to access, analyse, create, reflect and act using digital tools, texts and technology.

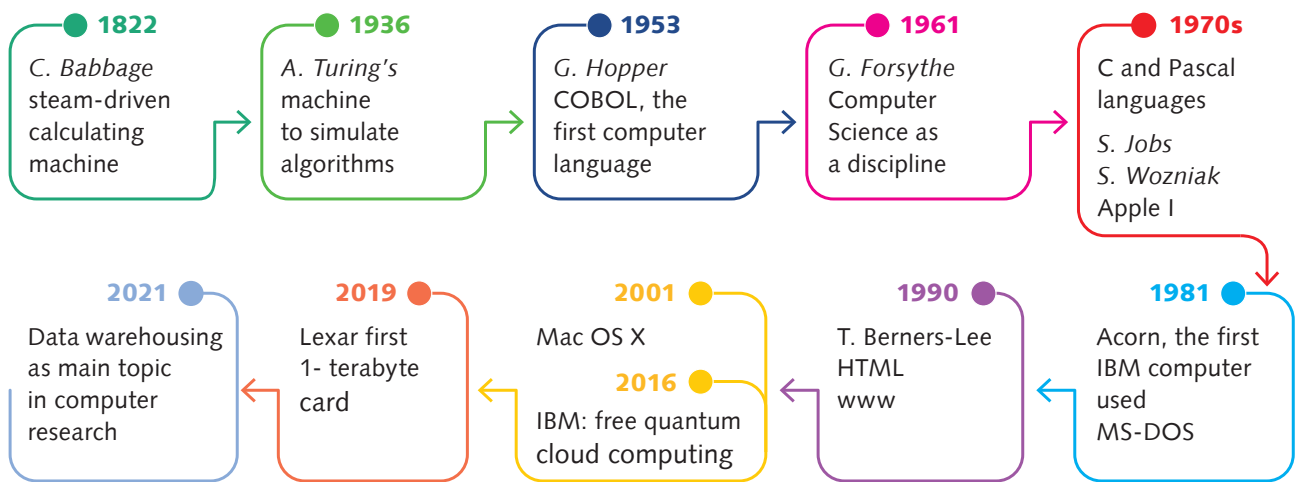
So, digital literacy refers to the way in which people understand digital information and interact with it safely and appropriately.

**to gather:** *raccogliere*  
**to implement:** *applicare, eseguire*  
**literacy:** *alfabetismo*  
**netizen:** *cittadino della rete*  
**to retrieve:** *recuperare*

**1**  Decide if these statements describe CS, ICT, or digital literacy (DL). Note that in some cases two answers are possible.

	CS	ICT	DL		CS	ICT	DL
1. Implementing algorithms for computer hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Implementing algorithms for computer software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Designing an algorithm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Gathering data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Reflecting on the use of digital tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Dealing with the development of hardware systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Storing data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Transmitting data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Being a good netizen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Managing data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2**   Look at this brief timeline of computer science and decide if the statements are true or false. Correct the false ones.



	T	F		T	F
1. Tim Berners Lee launched Apple I.	<input type="checkbox"/>	<input type="checkbox"/>	5. In 2001 computer science was recognised as a scientific discipline.	<input type="checkbox"/>	<input type="checkbox"/>
2. Turing's machine simulated computer algorithms.	<input type="checkbox"/>	<input type="checkbox"/>	6. Data warehousing was discovered in 2021.	<input type="checkbox"/>	<input type="checkbox"/>
3. Lexar, the first gigabyte card, was made in 2019.	<input type="checkbox"/>	<input type="checkbox"/>	7. IBM launched the OS X system in 2001.	<input type="checkbox"/>	<input type="checkbox"/>
4. COBOL, Pascal and C are programming languages.	<input type="checkbox"/>	<input type="checkbox"/>	8. IBM free quantum cloud computing was created in 2013.	<input type="checkbox"/>	<input type="checkbox"/>

**3**  **PAIR WORK** What does it mean to be digitally literate? Are you digitally literate?

