



El futuro digital
es de todos

MinTIC

«Misión TIC 2022»

ENGLISH COMPONENT – CYCLE 1 SESSION 3

INTRODUCTION TO ALGORITHMS

WORKSHEET 1.3



Universidad de Caldas



Worksheet 1.3.1

Write down the meanings of the next words, their translations or synonyms.

◆ **Programmers: Programadores**

◆ **Broad: Amplio, extenso**

◆ **Far-reaching: Largo alcance**

◆ **File: Archivo**

◆ **Share: Compartir**

◆ **Layout: Diseño**

◆ **Social networks: Redes sociales**

◆ **Features: Características**

◆ **Proficient: Competente**

◆ **Unlock: Desbloqueado**



Worksheet 1.3.2

Algorithms

1. What are some examples of *social networks*?
 - Facebook, Instagram, TikTok.
2. What are some examples of a mobile *features*?
 - Make calls, send messages, listen to music, calculator.
3. What are you *proficient* in?
 - I am very good at mathematics and physics.
4. How do you *unlock* your cellphone?
 - I have a password and I use my fingerprint.
5. What are the *broad* terms for these groups of words?

Example: rose, orchid, lily => flowers

- apple, orange, banana =>Fruits
- dog, cat, hamster =>Animals



- cell phone, computer, tablet =>Devices

6. What *file* types do you know?

- PPT, Excel, Word.

7. Do you *share* your photos and videos on social media? Why (not)?

- No, because I like to keep my things private.

8. Describe the job of a programmer:

- Do they work in groups or alone?

☐ Both

- Do they work in the office or in the street?

☐ In the office

- What do they use for work?

☐ Computers (or other devices)

Answers

1. Make calls, send messages, listen to music, calculator.

2. Answers:

- Both
- In the office or everywhere
- Computers (or other devices)



3. Facebook, Instagram, TikTok.
4. No, because I like to keep my things private.
5. Answers:
 - Fruits
 - Animals
 - Devices
6. I am very good at mathematics and physics.
7. I have a password and I use my fingerprint.
8. PPT, Excel, Word.

WORKSHEET 1.3.3

“Algorithms: a common language for nature, human, and computer.” — Avi Wigderson

What is an algorithm? Algorithm can be defined as a method for solving a problem. Some people think that it is something new, but the study of algorithms dates at least to 300 BC! And It was formalized by Church and Alan Turing in the 1930s and developed more in the 20th century. It is



interesting that some important algorithms were discovered by university students and not by expert **programmers**!

The impact of algorithms is **broad** and **far-reaching**. First, the Internet is full of them, for example, the web search, packet routing, and distributed **file sharing**. Second, the world of biology also works with algorithms: think of human genome project and protein folding. In the 20th century, algorithms contributed to the development of computers with the circuit **layout**, file system, compilers and many other things.

Consequently, computer graphics appeared and introduced movies, video games and virtual reality in our lives. In the 21st century, algorithms have been used for different **social networks features** like recommendations, news feeds, advertisements, and so on. Did you know that voting machines also use algorithms to count the votes in elections? So they are even used in politics!



So why should we study algorithms? They can help us solve problems that cannot have other solutions. If you want to stimulate your intellect and become a **proficient** programmer, it is also a good idea to study algorithms. Additionally, they may **unlock** the secrets of life and of the universe. Finally, computational models are replacing math models in scientific inquiry and will become more and more important in the future.

WORKSHEET 1.3.4

WRAP-UP

ANSWER THESE TRUE/FALSE QUESTIONS ABOUT THE TEXT.

1. The study of algorithms appeared in the 20th century.

True/**False**

2. Algorithms are only used in programming. **True/False**

3. University students can discover algorithms. **True/False**



4. Recommendations on social networks are results of algorithms. **True/False**
5. Math models are more important today than computational models. **True/False**

WORKSHEET 1.3.5

SELF-EVALUATION

1. Los organizadores gráficos me ayudan a organizar la información que leo.

Yes 😊

Maybe 😐

No ☹️

2. Los organizadores gráficos me ayudan a visualizar la información.



Yes 😊

Maybe 😐

No 😞

3. Entiendo el concepto de algoritmo tanto en la vida cotidiana, así como en el área de programación.

Yes 😊

Maybe 😐

No 😞