**PROGRAMMING – ENGLISH**

Let’s start speaking about easier topics to check your speaking level. Do you want to be able to speak about the field that you like? Do you want to proof that you can work abroad?

**PART ONE – SImple and basic conversation**

* How often do you use the Internet?
* How much time do you spend using a computer at work or at home?
* Do you enjoy using technology?
* Do you own a computer?
* What do you mainly use a computer for?
* Do you use the Internet for your studies?
* Has the internet made your job / studies easier?
* Have you ever taken a course to improve your computer skills?
* Do you use any gadgets on a daily basis?
* Which device do you prefer to use for browsing the internet?



After answering to easy questions, you should be able to have a longer conversation about your life or your goals in life:

**PART 2 – Express yourself**

* Imagine you finished the vocational training about programming? Are you going to study something else? What are the kind of jobs that are you going to look for? How would you explain to a foreign company what have you been studying, or what are your goals?

Hombre parado junto a una ventana

Descripción generada automáticamente

In addition you should be able to read a text about your opportunities and check the vocabulary that’s used in this text and even learn it.

**PART 3 – YOU HAVE MANY JOB OPPORTUNITIES**

**Do you understand this?**

There are so many beginners and experienced programmers who actually have no idea about the enormous career opportunities available in software development or as a programmer. Every day a new technology is coming or something new is introducing to make our life much better and easier.

Many programmers and developers work hard in their own role to introduce a new application or software in the market. Technology is vast and the demand of software developers and programmers is also high in the market. There are so many options available to choose as a career path in software development. We can’t say one field is better or the other one is best. Sometimes people get confused when they hear about a specific field in software development and the job role involves in that. They have questions like “Is that person is a real software developer or an engineer?“. The reality is each role have a different challenge and it depends on a candidate what kind of challenge he/she would like to accept. We will discuss all the career paths available in software development and the job role as well.

**Front-End Developers:**

These kinds of software engineers are specialized in the code that runs in the web browser. These developers are good in creating a user interface of the website or they do some designing work. They work on the front end part using HTML, CSS, JavaScript or other front end technologies and frameworks. So basically UI/UX designers come in this category. If you are good in creating beautiful responsive websites then definitely a lot of options are available for designers as a freelancer or working for some companies.

**Mobile Engineers:**

Every day a new application is coming out to use on our phone. Mobile engineers or developers make these apps like Snapchat, voice recorder, music player, etc. Mobile developers also work very closely with designers and they take care of every single little pixel. They are specialized across different platforms like Android or iOS.

**Game Developers:**

These developers write the code for games that we love to play across different platforms. Most of the game developers are specialize in different gaming frameworks or game engine like Unity, Unreal Engine, CryEngine, Corona SDK, SpritKit, etc. Different gaming frameworks let you create different games on different platforms. If you love to play games, crazy for drawing or 3D graphics type of programming and love to use graphics or animation then this field is best for you.

Una persona con una computadora

Descripción generada automáticamente

**Back-end Developers:**

All the development which is done behind the scenes categorized under back-end development. These developers write the code for server-side development. They focus on manipulating database, different kind of APIs, the architecture of a system, scripting, etc. Their work gives powers to the web page or mobile applications. In order to become a back-end developer, you should have a good logical, analytical and problem-solving skill, also a server-side programming language to use in your code. They deal with highly complex problems and give solutions for that.

**Application Developers:**

Application developers create any kind of software which is developed to be used by consumers or a person. Application developers can create internal tools to be used by big enterprises or companies or desktop programs that we use every day like powerpoint, keynotes, word processor, spreadsheet, etc. Applications developer mostly use languages such as Java, C++ or Oracle to develop the applications.

**Tools and Enterprise Software Developers**:

These software developers do not create software which is commercially published or sold. Their job role involves creating tools which are used within an organization. These tools help the organization or other team members to make their job easy and fast. Enterprise developers need to have a deep understanding of the organization, their requirements, and everything.

**Data Scientist:**

This is the super trendy and hottest job nowadays among engineers and developers. It’s populated recently and demand of data scientist is high in the market in comparison of other jobs. It’s a huge and fast-growing area. Data scientists are highly paid but you need to be master in Machine Learning. Coming to the point of job responsibility involved in this field, so data scientist look through the data and come up with some patterns or trends. They also look through the data analytics problem and apply some algorithm or write programs to give some solution to the organization. Their job role also involves storing, manipulating or organizing the large or big amount of data. If you want to go to this field you need to be good in machine learning, mathematics or statistics. Python and R these two programming languages data scientists use widely in their job role. Every business involves a huge amount of data, so definitely demand of data scientists is increasing day by day in industries.

Imagen que contiene mujer, computadora

Descripción generada automáticamente

**QA/Test/Automation:**

Most of the time QA/Test engineers are underrated engineers, but they are also important when it comes to testing software or finding a bug before launching the product in the market. These engineers develop software that tests other code. Most of the beginners don’t know how to test their code so we need to understand the importance of QA engineers in an organization especially in these such kinds of situations. QA engineers build tools for testing and they also write automated tests to execute and verify the functionality and give us the result of software or product. If you love to enjoy all these stuff then go for that.

**Full Stack Developers:**

This is a common term used by the companies to hire developers who can work on both front-end and back-end technology or web frameworks. It definitely involves both of the skill set of front-end and back-end. They deal with databases, servers, front-end part and a lot of things to build a complete product. Basically, you should have good knowledge of all kind of software engineering to build a product. They are good in a variety of skill set. Most of the companies hire developers who can have a different skill set to work on a product.

**Language/Compiler Developers:**

We use different languages to create applications but if we talk about who created these actual languages, these people are language/compiler developers. Someone created C or C++ or someone used C++ to create Python, so there are tons of languages and multiple ways to implement one language. We use Python or Ruby but engineers who created these languages really study fundamentals and organization of how computer language is actually structured. Compiler developers also write the code for the implementation of the compiler which converts these code to machine language so that a computer can understand.

**Cloud Developers:**

This is also a fairly new term which is in the market. Today most of the applications are on the cloud so these engineers job role involves planning, designing, managing and implementing applications on the cloud. They are responsible for the whole cloud infrastructure of a company, it’s maintenance and implementation. A skill set which is required here is generally degree in computer science and some cloud system certification will also work. You should have knowledge about Linux, database, cloud platforms. AWS(Amazon Web Service), Google Cloud, Microsoft Azure, Alibaba these are some examples of cloud platforms.

Then, at this point, you should be able to answer more complex questions, and even debate about these kinds of topics.

**PART 4– Debate**

Un dibujo de una mujer

Descripción generada automáticamente

* What kind of technological developments have made the biggest impact on our lives?
* Do you think people rely too much on modern technology?
* Do you think we need to know much about computers?
* How do computers affect our everyday life?
* Do you agree that some people use technology for communication too much?
* Do computers make it much easier to study?
* Would you agree that the rapid development of digital technology has had a positive impact on the world of work?
* What is the most important piece of technology in our lives?
* How effective is the use of computers in the classroom?
* Do you think that the rate of technological expansion will slow down in the years to come?
* What do you think are the important things people need to learn when they start using computers?
* Do you think men and women view technological devices differently?
* **PART 5 – Describe what you see**



It’s important then to keep on top of relatively new developments. you don’t need to be an expert in computer studies or anything, but you should know some common terms for talking about technology in daily life:

* online
* upload
* download
* instant messaging
* cloud
* device
* smartphone
* sync

You should be able to talk about social media, using the most common words and phrases there:

* add
* delete
* block
* post
* tweet
* friend/unfriend

I’ve been preparing some vocabulary that you’ll need to speak or explain what you’re doing to your clients or even if you want to be a programming teacher.

**VOCABULARY YOU NEED TO KNOW**

* **Full stop (.)**: punto y seguido *(\*) inglés británico*.
* **Period (.)**: punto y seguido *(\*) inglés americano.*.
* **Dot (.)**: punto (e-mails y páginas webs).
* **Comma (,)**: coma.
* **Colon (:)**: dos puntos.
* **Semicolon (;)**: punto y coma.
* **At (@)**: arroba.
* **Hash (#)**: almohadilla.
* **Asterisk (\*)**: asterisco.
* **Hyphen (-)**: guion.
* **Dash (—)**: raya.
* **Underscore (\_)**: guion bajo.
* **Apostrophe (')**: apóstrofe.
* **Single quotes (' ')**: comillas simples.
* **Double quotes (" ")**: comillas dobles.
* **Forward slash (/)**: barra.
* **Backslash (\)**: barra inversa.
* **Bar/pipe (|)**: barra vertical.
* **Brackets ([ ])**: corchetes.
* **Parentheses (( ))**: paréntesis.
* **Curly brackets ({})**: llaves.
* **Ampersand (&)**: "y" inglesa.
* **Percent (%)**: porcentaje.
* **Question mark (?)**: símbolo de interrogación.
* **Exclamation mark (!)**: símbolo de exclamación.
* **Plus (+)**: más.
* **Minus (-)**: menos.
* **Equal sign (=)**: símbolo de igual que.
* **Less than / Greater than simbols (<>)**: símbolos de mayor que y menor que.
* **UPPER-CASE**: mayúsculas.
* **Lower-case**: minúsculas.

## **GLOSSARY**

## **40 English words every IT professional should know**

### **1. Access**

* **Definition**: To enter or use something
* **Example**: “No one can *access* the computers in the library without setting up an account with the librarian.”



### **2. Analysis**

* **Definition**: A thorough examination of something
* **Example**: “The programmer determined in his requirements *analysis* that users would sign in with their username, password, and zip code..”

### **3. Application**

* **Definition**: A program developed to perform a certain task (often abbreviated as “app”)
* **Example**: “I found a free *application* that can test the performance and security of your web browser.

### **4. Back up**

* **Definition**: To make a copy of data
* **Example**: “Did you *back up* all the code we did today? I don’t want to have to redo it.”

### **5. Bandwidth**

* **Definition**: The maximum amount of information that can be transmitted over an internet connection
* **Example**: “Video streaming services require a high *bandwidth* to function properly.”

### **6. Boot up**

* **Definition**: To turn on, start up, or power on a device
* **Example**: “I tried to boot up my laptop this morning, but I got a startup error message.”



### **7. Bug**

* **Definition**: An error or problem in computer software that causes a program to behave unexpectedly or malfunction
* **Example**: “The computer completely crashed after being hit by a software *bug*.”



### **8. Certification**

* **Definition**: Documentation of competency in a specific subject or skill awarded by a recognized institution
* **Example**: “You should earn a *certification* in English for IT developers so that you can keep up with new tech trends.”

### **9. Compatible**

* **Definition**: Being able to operate with other programs or equipment
* **Example**: “Unfortunately, this app is not *compatible* with Windows 11, so we’ll have to find an alternative.”

### **10. Connect**

* **Definition**: To establish a link between a device and a server or between two separate devices
* **Example**: “Could you help me *connect* my laptop to the LED projector? I can’t figure out if it’s a hard-wired or wireless connection.”

### **11. Database**

* **Definition**: An organized collection of information that is stored on a server or computer
* **Example**: “Government organizations have large *databases* that store very sensitive information.”

### **12. Develop**

* **Definition**: To create something, or make it more advanced or complex
* **Example**: “The company asked the IT department to *develop* a software program that tracks user behavior on their website.”

### **13. Download**

* **Definition**: To copy data from one device or server to another, usually over the internet
* **Example**: “I plan to *download* all the PDFs from the website and save them in a folder on my computer.”

Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

### **14. Drawback**

* **Definition**: A feature of something that is a disadvantage, problem, or obstacle
* **Example**: “The chief *drawback* of this software design is that the existing code makes it hard to add new features.”

### **15. Efficient**

* **Definition**: Achieving maximum productivity without wasting time, effort, and/or money
* **Example**: “One way to determine if software development is *efficient* is to record how many lines of code each programmer produces per month.”

### **16. Environment**

* **Definition**: The circumstances or conditions in which something lives or operates
* **Example**: “When developing an app, software engineers use a beta *environment* to try out their product.”

### **17. Equipment**

* **Definition**: Tools and devices used to complete a job.
* **Example**: “IT specialists use a variety of *equipment*, like text editors and debuggers, to do their jobs.”

### **18. File**

* **Definition**: A collection of digital information stored and saved in one unit on an electronic device
* **Example**: “I saved the contact information of all our employees in an Excel *file*.”

Un hombre con un texto en blanco

Descripción generada automáticamente

### **19. Gadget**

* **Definition**: A small electronic device that is often new and unconventional
* **Example**: “One computer programmer in my office works with a cool *gadget*: a laser keyboard.”



### **20. Hardware**

* **Definition**: Physical parts of an electronic device, both inside and outside
* **Example**: “The computer hardware, such as the CPU and motherboard, were damaged when my coworker spilled water on my laptop.

### **21. Install**

* **Definition**: To set up for use or service
* **Example**: “If you’re having trouble trying to *install* updates on your computer, run the troubleshooter application.”

### **22. Instructions**

* **Definition**: Directions or orders that help someone perform or complete a job
* **Example**: “The company sent the software developer clear *instructions* to help him effectively design the program they wanted.”

### **23. Integrate**

* **Definition**: To merge two or more things together
* **Example**: “The department store decided to *integrate* its purchasing system with its supplier’s inventory system to communicate their demand in real-time.”

### **24. Intranet**

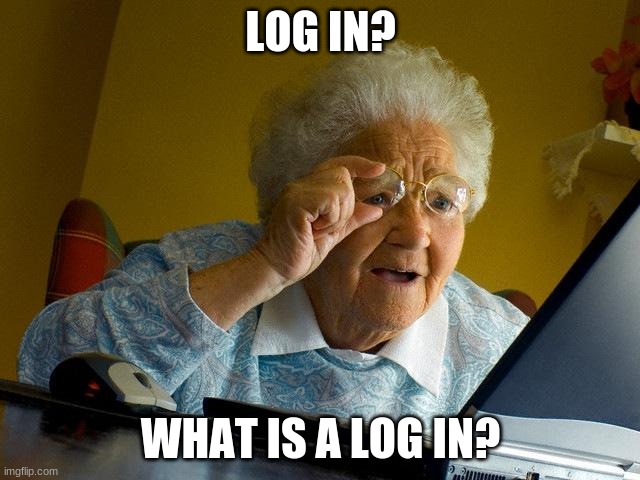
* **Definition**: A restricted or private computer network
* **Example**: “The airline company’s corporate *intranet* can only be accessed by its employees.”

### **25. Latest**

* **Definition**: Newest or most recent
* **Example**: “One of the *latest* software engineering trends is that an increase in remote work has led to an increase in cloud computing.”

### **26. Log in**

* **Definition**: To provide specific information in order to access a restricted website, system, application, or device
* **Example**: “After you *log in* to your email account, don’t forget to log out so that no one can access your private messages.”



### **27. Maintain**

* **Definition**: To keep something in good condition
* **Example**: “I manually install security updates every three months to *maintain* the safety of my web application.”

### **28. Matrix**

* **Definition**: A group of electronic circuit structures laid out in rows and columns
* **Example**: “A traceability *matrix* helps software developers identify and confirm the completeness of user requirements based on test scenarios.”

### **29. Monitor**

* **Definition**: To repeatedly observe, check on, and review the progress or quality of something over time
* **Example**: “Effective computer programmers *monitor* their progress as they complete a project and ensure they meet all required deadlines.”

### **30. Network**

* **Definition**: A system of connected devices that can share information with each other
* **Example**: “If one computer on a *network* is infected with a software bug, it could affect the other devices connected to it.”

### **31. Perform**

* **Definition**: To carry out specific functions or operations
* **Example**: “I want my laptop to *perform* better, so I’m going to purchase an external hard drive to free up some space.”

### **32. Port**

* **Definition**: A physical or virtual point of connection to link two devices or networks so they can share data
* **Example**: “You can plug your USB into the *port* on your laptop so that you can copy the files onto your flash drive.”

### **33. Reboot**

* **Definition**: To restart a device or operating system
* **Example**: “After I downloaded the system update, I had to *reboot* my computer.”

Foto montaje de la cara de una persona

Descripción generada automáticamente con confianza baja

### **34. Reduce**

* **Definition**: To make something smaller or less of
* **Example**: “We’ll have to *reduce* the size of the file or we can’t send it over email.”

### **35. Software**

* **Definition**: A set of programs and instructions that an operating system uses to function
* **Example**: “There are computer *software* programs that enable users to browse the internet, manage data, edit photos, and more.”

### **36. Solve**

* **Definition**: To find a way to address a problem
* **Example**: “IT professionals are often asked to *solve* issues regarding data security, software integration, and computer performance.”

### **37. Specifications**

* **Definition**: A detailed description of a product’s design, parts, features, etc.
* **Example**: “The customer sent the design *specifications* to the website developer and outlined exactly how he wanted it.”

### **38. Task**

* **Definition**: An action that needs to be completed
* **Example**: “Software developers must be able to perform many *tasks*, such as producing efficient code.”

### **39. Transfer**

* **Definition**: To move or send something from one place to another
* **Example**: “We will have to *transfer* all of our existing files to our new network so that we don’t lose any valuable data.”

### **40. Upgrade**

* **Definition**: To improve, enhance, or update something
* **Example**: “The IT department will come in today to *upgrade* everyone’s computers to the latest operating system.”

**RELATED TO CLASS**

## **Unicode Characters**

***Unicode has changed all that!***

The Unicode Standard provides a unique number for every character, no matter what platform, device, application or language. It has been adopted by all modern software providers and now allows data to be transported through many different platforms, devices and applications without corruption. Support of Unicode forms the foundation for the representation of languages and symbols in all major operating systems, search engines, browsers, laptops, and smart phones—plus the Internet and World Wide Web (URLs, HTML, XML, CSS, JSON, etc.). Supporting Unicode is the best way to implement ISO/IEC 10646.

The emergence of the Unicode Standard and the availability of tools supporting it are among the most significant recent global software technology trends.

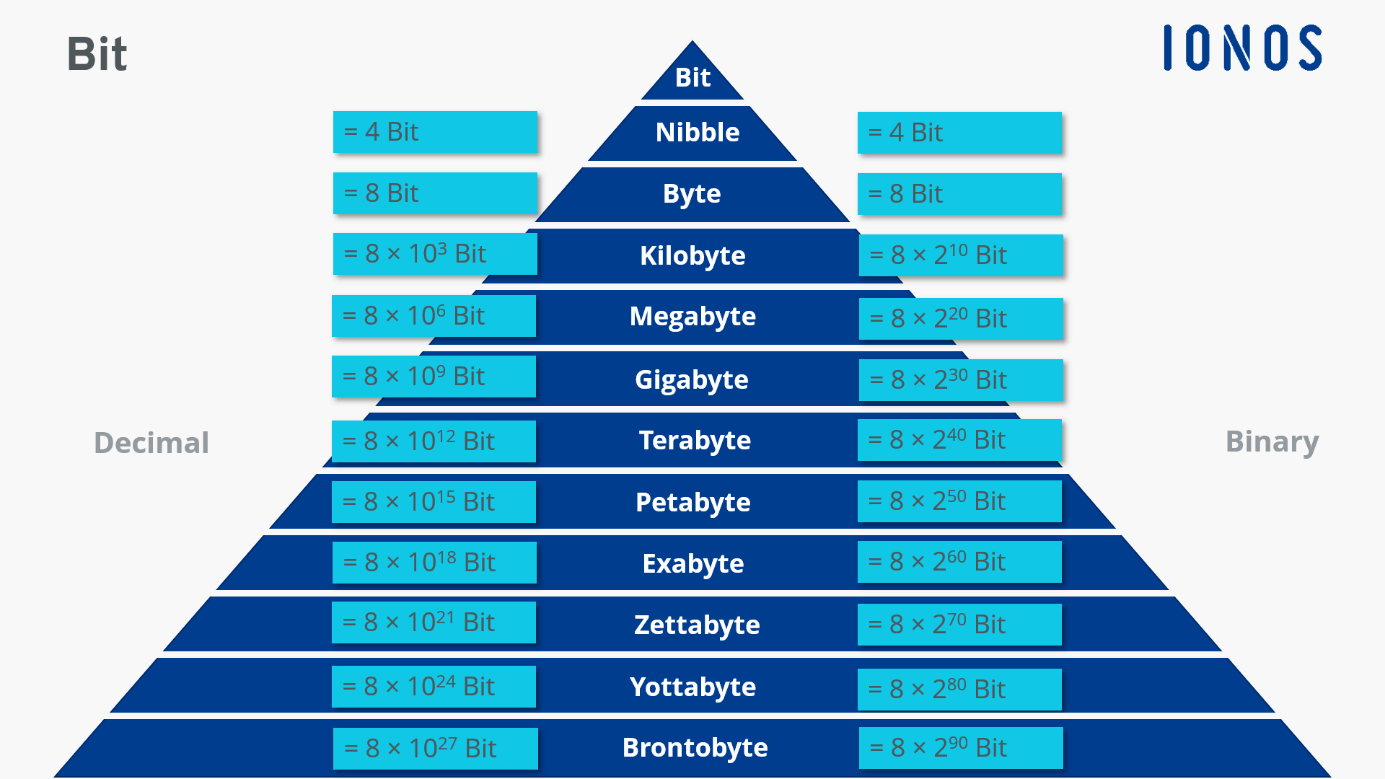
# **What is a bit? Bits and bytes explained**

Bits and bytes are part of our everyday digital life. Knowing about bits is essential for understanding how much storage your hard drive has or how fast your DSL connection is. So what is a bit and how is it different from a byte? A bit is the smallest unit of electronic information; multiple bits form a byte. Whereas the storage capacity of hard drives is given in bytes, data transfer rates are shown in bits. Keep reading to find out more about what bits and bytes really mean.

## **What is the difference between bits and bytes?**

Thanks to their very similar names, bits and bytes can easily be confused. Bits are primarily used to represent **data use and transmission speeds** of internet, telephone, and streaming services. The **bit rate** refers to how many bits are transmitted per second.

Bytes, on the other hand, are used to express[storage sizes](https://www.ionos.com/digitalguide/websites/web-development/units-of-storage-in-computers/). 1 byte is equal to 8 bits. This means that one byte can represent 256 (28) different states. A byte is usually the smallest unit that can represent a letter of the alphabet, for example. The kilobyte is the next largest unit; it equals 1,024 bytes and can represent 103states.



**DEBATES FOR CLASS**

**Privacy vs. Security**: Discuss the trade-off between personal privacy and the need for enhanced security in the digital age. Should governments and companies have access to individuals' data to ensure national security?

**Social Media: Boon or Bane?** Explore the impact of social media on society. Is it more beneficial or harmful? How does it affect mental health and interpersonal relationships?

**Online Bullying and Cybersecurity:** Debate the importance of cybersecurity and its role in preventing online bullying and harassment. How can individuals protect themselves online, and what responsibilities do platforms have in preventing cyberbullying?



**Digital Divide:** Discuss the concept of the digital divide and the disparities in access to technology and the internet. What steps can be taken to bridge this divide and ensure equitable access for all?

**Ethical Hacking**: Explore the ethics of hacking. Is ethical hacking a legitimate profession, and should it be taught in schools? What are the responsibilities and boundaries of ethical hackers?

**Online Privacy and Data Collection**: Debate the extent to which companies should be allowed to collect and use personal data for targeted advertising and other purposes. How can individuals protect their online privacy?

**Artificial Intelligence (AI) and Job Displacement**: Discuss the impact of AI and automation on the job market. Are robots and AI systems a threat to employment, or do they create new opportunities for human workers?

**Net Neutrality:** Explore the concept of net neutrality and whether internet service providers should be allowed to prioritize certain online content or create fast lanes for specific services. What are the implications for freedom of information and competition?

**Digital Citizenship Education:** Debate the importance of teaching digital citizenship in schools. What should be included in a digital citizenship curriculum, and how can it help students navigate the online world responsibly?

**Online Gaming and Addiction:** Discuss the potential for addiction to online gaming and the impact it can have on mental health. Should there be regulations or age restrictions on certain types of online games?

Un joven sentado en un escritorio

Descripción generada automáticamente con confianza media

**Blockchain Technology:** Explore the potential benefits and challenges of blockchain technology, including its applications beyond cryptocurrencies. How might blockchain change industries like finance and supply chain management?

**E-waste and Sustainable Technology:** Debate the environmental impact of electronic waste (e-waste) and the responsibility of tech companies to design more sustainable products. What role can consumers play in reducing e-waste?

***MORE RELATED TO PROGRAMING***

**Coding in Schools**: Should coding and programming be a mandatory part of the school curriculum? What are the benefits and challenges of introducing coding to all students?

**Open Source Software**: Discuss the advantages and disadvantages of open source software. How does it impact innovation, security, and the software industry as a whole?

**Programming Languages:** Which programming language is the best for beginners, and why? Compare languages like Python, Java, and Scratch in terms of ease of learning and versatility.

**Artificial Intelligence in Everyday Life**: Explore the role of artificial intelligence in daily life, from virtual assistants like Siri to recommendation algorithms on streaming platforms. Are these technologies making life better or raising concerns about privacy and manipulation?

Imagen que contiene computadora, cuarto, tabla, cuarto de hospital

Descripción generada automáticamente

**Internet Safety and Cybersecurity Education**: Should schools prioritize teaching cybersecurity and internet safety alongside programming? How can students protect themselves and their data online?

**Gamification of Learning:** Discuss the use of gamification and educational games to teach programming concepts. Are gamified learning platforms effective in helping students grasp coding skills?

**The Role of Women in Tech**: Debate the gender gap in the technology industry. What can be done to encourage more young women to pursue careers in programming and computer science?

**Software Piracy:** Explore the ethics and consequences of software piracy. Is it ever justifiable, or should all software be purchased legally?

**The Future of Jobs in Tech:** Discuss the potential impact of automation and AI on the job market. What skills will be most valuable for future tech jobs, and how can students prepare for them?

**Algorithmic Bias:** Debate the issue of bias in algorithms, such as those used in hiring and lending decisions. How can society address and mitigate algorithmic bias in tech?

**Online Coding Bootcamps vs. Traditional Computer Science Degrees:** Compare the pros and cons of online coding bootcamps with pursuing a traditional computer science degree. Which path is better for different career goals?

**Digital Accessibility:** Explore the importance of making technology accessible to individuals with disabilities. How can programmers and developers contribute to creating more inclusive digital experiences?

**SPEAKING ABOUT TECH IELTS** [**https://manwrites.com/how-to-talk-about-technology-in-the-ielts-speaking-test/**](https://manwrites.com/how-to-talk-about-technology-in-the-ielts-speaking-test/)

**TED TALKS ABOUT TECNOLOGY:**

Can technology solve our big problems? <https://www.youtube.com/watch?v=ZB50BfYlsDc>

Imagen que contiene interior, tabla, cuarto, escritorio

Descripción generada automáticamenteWill technology shape our future or will we <https://youtu.be/j648moM5j0w?si=a6_nQOSHWx8Sz50C>

Technology, the best or worst thing for education <https://www.youtube.com/watch?v=9IbN1LxXevM&t=219s>

The poetry of programming <https://youtu.be/-jRREn6ifEQ?si=gT4dDh_wGxfGdhgV>

**NETFLIX**

**BLACK MIRROR** Individual episodes explore a diversity of genres, but most are set in near-future dystopias with sci-fi technology—a type of speculative fiction. The series uses the themes of technology and media to comment on contemporary social issues.

Mujer con ropa deportiva

Descripción generada automáticamente con confianza baja

**BIG HACK**. This documentary delves into the huge privacy breach scandal that arose from Facebook and Cambridge Analytica malpractices. The material not only delves into the scandal itself, but into the flaws of a system that allows to trade our personal data and manipulate us in a sneaky way.

**MOVIES**

* **The Social Network**. The programming bit in the whole movie is a bit short but since it is based on a true story, all programming sequences in the movie are on point. The movie is about Facebook and Mark Zuckerberg who finds himself in the midst of legal trouble on the grounds of intellectual property theft. The whole movie is about how Facebook grew as a business and the various ups and downs it had to face.

<https://youtu.be/lB95KLmpLR4>

Cara de una persona

Descripción generada automáticamente

* **EX MACHINA.** The movie revolves around artificial intelligence and how it can be used to make the world a better place to live. The cinematography in this movie is truly amazing and deserves a round of applause. The way developers create software is beautifully depicted in this movie. It also warns us against the harmful effects of not using it correctly.

[**https://youtu.be/EoQuVnKhxaM**](https://youtu.be/EoQuVnKhxaM)

**PODCAST**

* Techmeme ride home
* The hustle daily show
* Best Gadget Podcast

**READING**

**BBC > TECHNOLOGY** [**https://www.bbc.com/news/technology**](https://www.bbc.com/news/technology) **(FREE)**

**THE GUARDIAN > TECH**

[**https://www.theguardian.com/technology/2023/sep/26/amazon-antitrust-lawsuit-analysis-big-tech**](https://www.theguardian.com/technology/2023/sep/26/amazon-antitrust-lawsuit-analysis-big-tech)

**NEW YORK TIMES > TECHNOLOGY (SUBS) (**[**https://www.nytimes.com/section/technology**](https://www.nytimes.com/section/technology)

**THE VERGE** [**https://www.theverge.com/tech**](https://www.theverge.com/tech)

**COMPUTERWORLD** [**https://www.computerworld.com/news/**](https://www.computerworld.com/news/)

***Example of a great reading***

**US authors George RR Martin and John Grisham are suing ChatGPT-owner OpenAI over claims their copyright was infringed to train the system.**

Martin is known for his fantasy series A Song of Ice and Fire, which was adapted into HBO show Game of Thrones.

ChatGPT and other large language models (LLMs) "learn" by analysing a massive amount of data often sourced online. The lawsuit claims the authors' books were used without their permission to make ChatGPT smarter.

OpenAI said it respected the rights of authors and believed "they should benefit from AI technology".

The case has been brought to the federal court in Manhattan, New York, by the Authors Guild, a trade group in the US working on behalf of the named authors. According to the filing, it accused OpenAI of engaging in "systematic theft on a mass scale".

A spokesperson for OpenAI said: "We're having productive conversations with many creators around the world, including the Authors Guild, and have been working co-operatively to understand and discuss their concerns about AI. "We're optimistic we will continue to find mutually beneficial ways to work together."

The case argues that the LLM was fed data from copyrighted books without the permission of the authors, in part because it was able to provide accurate summaries of them.

The lawsuit also pointed to a broader concern in the media industry - that this kind of technology is "displacing human-authored" content. Patrick Goold, reader in law at City University, told BBC News that while he could sympathise with the authors behind the lawsuit, he believed it was unlikely it would succeed, saying they would initially need to prove ChatGPT had copied and duplicated their work. "They're actually not really worried about copyright, what they're worried about is that AI is a job killer," he said, likening the concerns to those screenwriters are currently protesting against in Hollywood.

"When we're talking about AI automation and replacing human labour... it's just not something that copyright should fix. "What we need to be doing is going to Parliament and Congress and talking about how AI is going to displace the creative arts and what we need to do about that in the future."

The case is the latest in a long line of complaints brought against developers of so-called generative AI - that is, artificial intelligence that can create media based on text prompts - over this concern. It comes after digital artists sued text-to-image generators Stability AI and Midjourney in January, claiming they only function by being trained on copyrighted artwork. And OpenAI is also facing a lawsuit, alongside Microsoft and programming site GitHub, from a group of computing experts who argue their code was used without their permission to train an AI called Copilot. None of these lawsuits has yet been resolved.