UNLP

Taller de Lecto Comprensión y Traducción de Inglés

Clases Teórico / Prácticas

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Año 2024

Taller de Lectocomprensión y Traducción de Inglés

REGLAMENTO DE CURSADA – MODALIDAD PRESENCIAL

- La asignatura tiene carácter de LIBRE. No obstante, la cátedra ofrece la posibilidad de cursarla como alumno regular (con examen final regular) o aprobarla por promocion (sin examen final), cumplidos los requisitos correspondientes.

- La asignatura consta de clases teórico-prácticas dictadas en dos horarios a elección de los alumnos, de tres horas reloj, a cargo de las Prof. Adjuntas, y clases prácticas organizadas en cuatro comisiones, de tres horas, a cargo de los ayudantes de la cátedra. Al momento de la inscripcion los alumnos deberán elegir UNA comisión de Trabajos Practicos y UNA de las clases teórico prácticas (para el caso de cursada por promoción).

1. ***Cursada Regular con examen final:*** los alumnos que opten por esta modalidad deberán:

- **asistir al 80% de las clases prácticas** en la comisión elegida,
- **aprobar una de las dos Evaluaciones Diagnósticas** previas al parcial,
- aprobar el examen parcial con una calificación **mínima de 4 puntos.**
- **preparar un Trabajo Final obligatorio, seguido de un coloquio oral individual**. EL resultado de esta evaluación no se computará para la aprobación de la cursada regular, pero la presentación en el coloquio constituye un requisito obligatorio para aprobar la cursada regular.

Esta cursada regular tendrá una validez de TRES AÑOS, durante los cuales los alumnos rendirán un Examen Final Regular en la fecha de su elección**, inscribiéndose por el SIU en carácter de LIBRES por ser la única opción que acepta el sistema** (la cátedra guarda registros de la condición REGULAR de los alumnos para el día del examen final. durante un máximo de tres años).

2. ***Promoción sin examen final:*** los alumnos que opten por esta modalidad deberán:

- **asistir al 80% de las clases prácticas** en la comisión elegida**,**
- **asistir al 60% de las clases teórico prácticas** en el horario elegido al momento de la inscripción,
- **aprobar las dos Evaluaciones Diagnósticas** previas al parcial (que incluyen una instancia de recuperación),
- aprobar el examen parcial con una calificación **mínima de 7 puntos, sin hacer uso de instancias recupertorias** y
- **preparar un Trabajo Final obligatorio, seguido de un coloquio oral individual**. EL resultado de esta evaluación no se computará para la aprobación de la cursada regular, pero la presentación en el coloquio constituye un requisito obligatorio para aprobar la cursada por promoción.

NOTA: se accede a esta promoción aún rindiendo el recuperatorio de las evaluaciones diagnósticas.

Esta promoción tendrá una validez de DOS AÑOS, durante los cuales **los alumnos deberán inscribirse por SIU al examen final en carácter de LIBRES en cualquier mesa de finales** para que la nota de promoción sea pasada al Acta de Finales y quede así asentada en los regitros correspondientes.

Aquellos alumnos que obtengan **una nota menor a 7 en el parcial**, pasarán automáticamente al régimen de cursada regular y deberán rendir un Examen Final Regular en la fecha de su elección.

- Habrá **2 recuperatorios** para el examen parcial en fechas que se informarán al inicio de la cursada.

- Los docentes coordinarán con los alumnos (en forma personal o por medio de la cartelera física o la virtual o el entorno de MOODLE) **las muestras de todas las evaluaciones** que se tomen durante la cursada.

3. ***Examen final libre:*** se podrá rendir todos los meses en las fechas establecidas por el Calendario Académico. Los exámenes finales se tomarán los días martes a las 16.00 hs en aula a confirmar para cada fecha en la cartelera del Aula Virtual de Moodle y en Cartelera Virtual.

Los alumnos que deseen rendir LIBRE, deberán inscribirse por SIU en la semana de inscripción correspondiente a cada llamado. Podrán visitar el curso **Inglés: Exámenes y Consultas** en la plataforma Moodle, donde encontrarán toda la información necesaria sobre el examen, incluidas las clases de consulta previas a cada mesa de finales.

- *LOS ALUMNOS QUE SE PRESENTEN A RENDIR EXAMEN FINAL LIBRE O REGULAR DEBERÁN HACERLO CON LIBRETA DE ESTUDIANTE O DNI CON FOTO, DICCIONARIOS BILINGÜES Y/O GLOSARIOS IMPRESOS.* ***NO SE PERMITIRÁ*** *EL USO DE DISPOSITIVOS ELECTRÓNICOS NI COMPUTADORAS.*

¿De qué tratan estos textos?

- **Lea estos textos en silencio y reflexione con un compañero sobre lo siguiente:**

1. ¿Qué tienen en común?
2. ¿En qué se diferencian?
3. ¿Cuál es más fácil o difícil de entender? ¿Por qué?
4. ¿Con qué disciplina o campo del saber se relacionan?

A. The principles of social psychology, including the ABCs—affect, behavior, and cognition—apply to the study of stereotyping, prejudice, and discrimination, and social psychologists have expended substantial research efforts studying these concepts (Figure 12.1). The cognitive component in our perceptions of group members is the stereotype—the positive or negative beliefs that we hold about the characteristics of social groups. We may decide that "Italians are romantic," that "old people are boring," or that "college professors are nerds." And we may use those beliefs to guide our actions toward people from those groups. In addition to our stereotypes, we may also develop prejudice—an unjustifiable negative attitude toward an outgroup or toward the members of that outgroup. Prejudice can take the form of disliking, anger, fear, disgust, discomfort, and even hatred—the kind of affective states that can lead to behavior such as the gay bashing you just read about. Our stereotypes and our prejudices are problematic because they may create discrimination—unjustified negative behaviors toward members of outgroups based on their group membership.

B. The first, and still the largest market in dollar terms, is desktop computing. Desktop computing spans from low-end systems that sell for under $500 to high-end, heavily configured workstations that may sell for $5000. Throughout this range in price and capability, the desktop market tends to be driven to optimize *price-performance*. This combination of performance (measured primarily in terms of compute performance and graphics performance) and price of a system is what matters most to customers in this market, and hence to computer designers. As a result, the newest, highest-performance microprocessors and cost-reduced microprocessors often appear first in desktop systems (see Section 1.6 for a discussion of the issues affecting the cost of computers).

Desktop computing also tends to be reasonably well characterized in terms of applications and benchmarking, though the increasing use of Web-centric, interactive applications poses new challenges in performance evaluation.

C. Bahia Grass (*Paspalumnotatum*) , which is native to Brazil (and named after the eastern state of Bahia), Argentina, Uruguay and Paraguay, has been introduced into warm areas of the US for use both in lawns and in pastures, but sometimes becomes a roadside weed. It is a perennial species that spreads both by rhizomes and seeds, and finds its greatest use in Florida and coastal areas of nearby states. Bahia Grass is useful because while it prefers moist or even wet soils, it can tolerate drought well, and it tends to grow quickly enough to crowd out weeds. It is a "warm season" grass that grows to be some 12 to 20 inches tall and the flowering stalk usually forms a distinct "Y". Allergenically, it demonstrates moderate cross-reactivity with Johnson Grass but relatively little with most other grasses, and is considered to be one of the three main "Southern Grasses".

TEXTO 1

What are the five elements of a computer system?

The five elements of a computer system are datapath, control, memory, input and output. All these elements work together to allow the computer to function properly.

The input and the output elements of a computer are the elements with which end users interact. These elements include input devices such as keyboards, mice and external drives. The output elements include devices such as monitors and printers.

The remaining three elements of a computer system function to process data. The datapath works with the data that comes through the processor. The memory component stores the data and instructions for programs that are in use on the computer. The control element directs the operation of the datapath and memory.

What are the external parts of a computer?

External computer parts are those that connect to the case, often to provide ways to input or output data. Most computers use a keyboard and mouse as external input devices and a monitor as an output device. Speakers, printers, modems, network routers and external storage devices are other external devices.

External computer components connect to the motherboard through a series of ports on the computer case. Many components have their own dedicated port connections, such as those to connect audio equipment or the computer monitor. Others may share a single type of connector, such as the USB, that connects everything from keyboards and mice to game pads and external hard drives.

(from https://www.reference.com)

TEXTO 2

techopedia™

Central Processing Unit (CPU)

Definition - What does Central Processing Unit (CPU) mean?

The central processing unit (CPU) is the unit which performs most of the processing inside a computer. **This term** is also known as a central processor, microprocessor or chip. To control instructions and data flow to and from other parts of the computer, the CPU relies heavily on a chip set, which is a group of microchips located on the motherboard.

The CPU has two typical components:

- Control Unit: extracts instructions from memory and decodes and executes **them.**
- Arithmetic Logic Unit (ALU): handles arithmetic and logical operations.

To function properly, the CPU relies on the system clock, memory, secondary storage, and data and address buses.

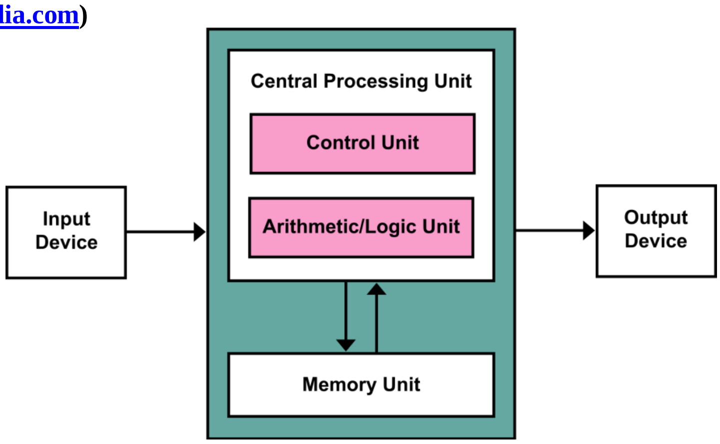
Techopedia explains Central Processing Unit (CPU)

The CPU is the heart and brain of a computer. **It** receives data input, executes instructions, and processes information. **It** communicates with Input/Output (I/O) devices, which send and receive data to and from the CPU. Additionally, the CPU has an internal bus for communication with the internal cache memory, called the backside bus. The main bus for data transfer to and from the CPU, memory, chipset, and AGP socket is called the front side bus.

CPU contains internal memory units, which are called registers. **These registers** contain data, instructions, counters, and addresses used in the ALU information processing.

Some computers have dual or multiple processors. **These** consist of two or more separate physical CPUs located side-by-side on the same board or on separate boards. Each CPU has an independent interface, separate cache, and individual paths to the system front-side bus. Multiple processors are ideal for intensive parallel tasks requiring multitasking.

(from https://www.techopedia.com)



TEXTO 3

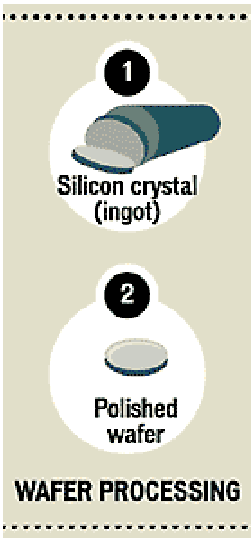
Making Microchips

By Gary Anthes

The simple element silicon in sand is the starting point for making integrated circuits. Silicon is a natural semiconductor. Under some conditions, it conducts electricity; under others, it acts as an insulator. That is why we use the term "semiconductor." This on/off capability is what underlies the transistor switching action that forms the ones and zeros of digital logic.

Several types of microchips are made today. Microprocessors are logic chips that perform the computations inside most commercial computers. Memory chips store information. Digital signal processors convert between analog and digital signals. Application-specific integrated circuits are special-purpose chips used in things such as cars and appliances.

The Process

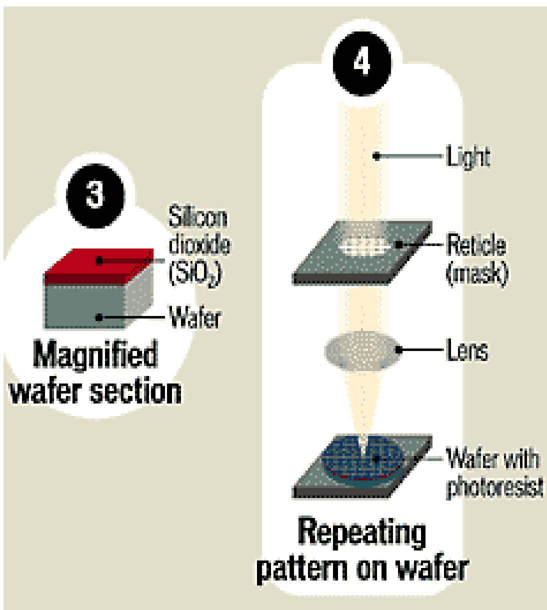


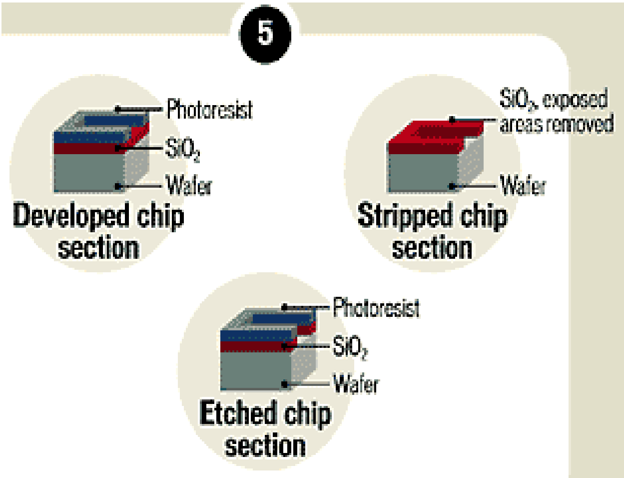
Chips are made in multibillion-dollar fabrication plants called fabs. Fabs melt and refine sand to produce 99.9999% pure single-crystal silicon ingots. The ingot is then carefully sawed into thin wafers the diameter of the ingot, most commonly 200 mm (8-inches) or 300 mm (12-inches) across.

The wafers are cleaned and polished, and each one is used to build multiple chips. These and subsequent steps are done in a "clean room" environment, where extensive precautions are taken to prevent contamination by dust and other foreign substances.

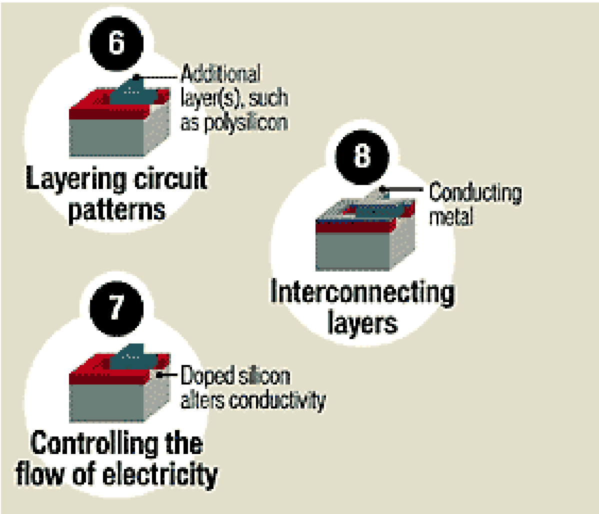
A nonconducting layer of silicon dioxide is deposited on the surface of the silicon wafer, and that layer is covered with a photosensitive chemical called a photoresist.

The photoresist is exposed to ultraviolet light, through a patterned plate (a mask) to harden the areas exposed to the light. Unexposed areas are then etched away by hot gasses to reveal the silicon dioxide base below. The base and the silicon layer below are further etched to varying depths.

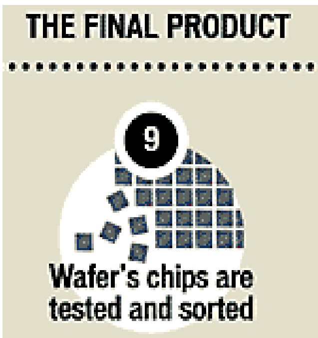




The photoresist hardened by this process of photolithography is then stripped away, leaving a 3-D landscape on the chip that replicates the circuit design embodied in the mask. The electrical conductivity of certain parts of the chip can also be altered by doping (adding impurities) them with chemicals under heat and pressure. Photolithography using different masks, followed by more etching and doping, can be repeated hundreds of times for the same chip, producing a more complex integrated circuit at each step.



Each chip on the wafer is tested for correct performance and then separated from other chips on the wafer by a saw. Good chips are placed into the supporting packages that allow them to be plugged into circuit boards, and bad chips are marked and discarded.



<u>Glosario:</u>
Wafer: oblea (de silicio)
Photoresist. capa fotoresistente
Etch away: realizar o someter a ataque químico o fresado químico.

TEXTO 4

3.2 Varieties of Arrays

In some languages, the size of an array must be established once and for all at program design time and cannot change during execution. Such arrays are called static arrays. A chunk of memory big enough to hold all the values in the array is allocated when the array is created, and thereafter elements are accessed using the fixed base location of the array. Static arrays are the fundamental array type in most older procedural languages, such as Fortran, Basic, and C, and in many newer object-oriented languages as well, such as Java. Some languages provide arrays whose sizes are established at run-time and can change during execution. These dynamic arrays have an initial size used as the basis for allocating a segment of memory for element storage. Thereafter, the array may shrink or grow. If the array shrinks during execution, then only an initial portion of allocated memory is used. But if the array grows beyond the space allocated for it, a more complex reallocation procedure, must occur as follows:

1. A new segment of memory large enough to store the elements of the expanded array is allocated.
2. All elements of the original (unexpanded) array are copied into the new memory segment.
3. The memory used initially to store array values is freed and the newly allocated memory is associated with the array variable or reference.

This reallocation procedure is computationally expensive, so systems are usually designed to minimize its frequency of use. For example, when an array expands beyond its memory allocation, its memory allocation might be doubled even if space for only a single additional element is needed. The hope is that providing a lot of extra space will avoid many expensive reallocation procedures if the array expands over time.
Dynamic arrays are convenient for programmers because they can never be too small –whenever more space is needed in a dynamic array, it can simply be expanded. One drawback of dynamic arrays is that implementing language support for them is more work for the compiler or interpreter writer. A potentially more serious drawback is that the expansion procedure is expensive, so there are circumstances when using a dynamic array can be dangerous. For example, if an application must respond in real time to events in its environment, and a dynamic array must be expanded when the application is in the midst of a response, then the response may be delayed too long, causing problems.

(From: *Concise notes on data structure and algorithms*)

TEXTO 5

2.3 Input/Output

Input arrives at the computer at unpredictable intervals. The system must be able to detect its arrival and respond to it.

2.3.1 Interrupts

Interrupts are hardware triggered signals which cause the CPU to stop what it is doing and jump to a special subroutine. Interrupts normally arrive from hardware devices, such as when the user presses a key on the keyboard. They can also be generated in software by errors like *division by zero* or *illegal memory address*.

When the CPU receives an interrupt, it saves the contents of its registers on the hardware stack and jumps to a special routine which will determine the cause of the interrupt and respond to it appropriately. Interrupts occur at different levels. Low level interrupts can be interrupted by high level interrupts. Interrupt handling routines have to work quickly, or the computer will be drowned in the business of servicing interrupts. For certain critical operations, low level interrupts can be ignored by setting a *mask*.

2.3.2 Buffers

The CPU and the devices attached to it do not work at the same speed. *Buffers* are therefore needed to store incoming or outgoing information temporarily, while it is waiting to be picked up by the other party. A buffer is simply an area of memory which works as a waiting area. It is a *first-in first-out* (FIFO) data structure or *queue*.

2.3.3 Synchronous and asynchronous I/O

To start an I/O operation, the CPU writes appropriate values into the registers of the device controller. The device controller acts on the values it finds in its registers. For example, if the operation is to read from a disk, the device controller fetches data from the disk and places it in its local buffer. It then signals the CPU by generating an interrupt.

While the CPU is waiting for the I/O to complete it may do one of two things. It can do nothing or *idle* until the device returns with the data (synchronous I/O), or it can continue doing something else until the completion interrupt arrives (asynchronous I/O). The second of these possibilities is clearly much more efficient.

(**From** *A short introduction to operating systems* by Mark Burgess. October 3, 2001)

TEXTO 6

Birth And Evolution Of Internet of Things (IoT)

Sarah Greenberg

Jul 30, 2021

Definition Of Internet of Things (IoT)

When you think of the Internet of Things (IoT), what comes to mind? If it's lots of things, you're not wrong. The definition of IoT is nuanced, multi-faceted and even controversial. So much so that in 2015, The Institute of Electrical and Electronics Engineers (IEEE) issued a white paper in May 2015 called *Towards a Definition of the IoT*. The IEEE states that IoT includes enabling technologies, components and the mechanisms to integrate these components effectively. This refers often to a network that enables the integration and a set of components that can range from autonomous sensors to smartphones.

Many applications and industries enabled by IT networks with integrated components are quickly redefining IoT beyond RFID, machine-to-machine (M2M) or any previous point interconnection technology. IoT encompasses all of these. Thanks to the internet, mobile devices and data analytics, new layers of capability are added to what IoT encompasses all the time.

History Of IoT

The concept of a network of smart devices was discussed as early as 1982, with a modified Coke machine at Carnegie Mellon University (a BCC member!) becoming the first internet-connected appliance. Through the 1990s, a series of papers were published in various academic journals. The concept of the IoT first became popular in 1999, through the Auto-ID Center at MIT (another BCC member!) and related market-analysis publications.

The term "IoT" was popularized by Kevin Ashton, a British professor at MIT. At the turn of the millennium, he envisioned vendors embedding intelligence into physical objects or things, basically anything that could support a sensor, and connecting these via networks.

In 2000, LG announced its plans to develop an internet-enabled refrigerator. From 2003-2004, "IoT" was mentioned in mainstream publications, including *The Guardian*, *Scientific American* and the *Boston Globe*;

it began to appear in book titles for the first time. This period also saw projects such as Cooltown, Internet0 and the Disappearing Computer initiative that implemented some of the ideas of IoT. Additionally, this period saw massive scale deployment of RFID through the U.S. Department of Defense's SAVI program and from Walmart.

In 2005, the UN's International Telecommunications Union (ITU) published its first report on IoT, indicating the technology's further global acceptance. The same year saw the development of Nabaztag, a Wi-Fi-enabled ambient electronic device in the shape of a rabbit, and now a part of Aldebaran Robotics manufactured by Violet. This little Wi-Fi-enabled rabbit can alert and speak to the user about stock market reports, news headlines and RSS-feeds. It has an alarm clock function and can connect to other devices.

The IoT market experienced impressive growth between 2008-2010. The number of connected devices surpassed the world population; there is more than one connected device per person. In 2010, the number of connected devices—smartphones, tablets, PCs, etc.—totaled 12.5 billion with a global population of 6.8 billion.

There has been significant development in the IoT space since 2010, including mergers and acquisitions, funding, entry of new companies and new technology introduction. This period saw new industries accepting IoT. Large traditional technology companies like Cisco, IBM and Ericsson increased focus on IoT and produced large educational and marketing initiatives on the topic. The key reasons for the strong development of IoT throughout this period include increasing focus of the large technology companies and their financial strength and government initiatives, particularly throughout developed regions.

(Recuperado de https://blog.bccresearch.com/birth-and-evolution-of-internet-of-things-iot)

TEXTO 7

Liquid cooling vs air cooling: which is better?

Guide by James Archer **Guide** by James Archer Hardware Editor
Published on Oct. 14, 2021

Why liquid cooling?

Although it is possible to find high-end air coolers that can compete with liquid cooling on temperature lowering performance, the latter has a couple of advantages that make it more *efficient* – and therefore preferable for powerful CPUs and/or overclocking.

The first is the method of transferring heat away from the contact/cold plate: liquids are better at conducting heat than the gas-filled pipes used by air coolers, so heat is more efficiently dragged away from the processor and spread across the radiator. The second is the radiator itself: the fins of a 240mm radiator, one of the most common form factors for AIO liquid coolers, will amount to greater surface area than a typical air cooler's radiator. Because the radiator should be dissipating as much heat as possible, more surface area – for the heat to escape from – is exactly what you want.

These efficiency advantages usually translate into extra headroom for overclocking, as the CPU can run hotter without overwhelming the cooler's capabilities, and make liquid cooler generally ideal for high-core-count processors that get relatively toasty even under medium workloads. Also, because AIO radiators are better at dissipating heat, the cooler's fans may not need to spin as quickly to shoot away the warmth. Your PC, in other words, can run both cooler and quieter.

Why air cooling?

Most non-overclocked CPUs will be run perfectly fine on a humble air cooler, and some chips – especially those with six cores or fewer -might even be able to take a moderate OC without temps tipping into the danger zone.

Air coolers can therefore make fine additions to lower-end and mid-range PC builds, lot least because they are by and large more affordable than AIO liquid coolers. Impressively capable models start from about £40 / $40, and you can spend even less – or just use a bundled stock cooler – if your PC only houses a basic dual- or quad-core CPU.

Air coolers also tend to be easier to install, making them even better for first-time builders. Not that AIO liquid coolers are particularly difficult to hammer together, but not all PC cases will have room for 240mm, 280mm or 360mm radiator and fan setups. With an air cooler, the fan usually comes pre-attached, and only the very fattest air coolers are too tall to squeeze into the majority of tower-style cases. High profile RAM sticks can make installation difficult if there's not much space between the DIMM slots and the CPU socket, though it is not a common issue. Some air coolers are even designed to avoid RAM clash specifically, like the Cooler Master 212 Evo V2 pictured above.

(Recuperado de https://www.rockpapershotgun.com/liquid-cooling-vs-air-cooling-which-is-better)

<u>TEXTO 8</u>

1. Introduction to database development

Databases are at the centre of most information systems in everyday use. Therefore, it is important that they are designed and built using appropriate methods to ensure that they meet users' requirements whilst being robust and maintainable. A database system is usually regarded as the database which contains related tables of data maintained by a database management system (DBMS), along with applications that provide controlled access to the database.

In order to build an effective database system, it is important to understand and apply the database development lifecycle, which includes the following phases:

1. Strategy and planning –typically the cycle starts with the strategy and planning phase to identify the need and scope of a new system.
2. Requirement analysis phase –a more detailed requirement analysis will be carried out which will include identifying what the users require of the system; this will involve conceptual analysis.
3. Design phase –this will involve producing a conceptual, logical and physical design. To undertake these processes it is important to be able to understand and apply the data modeling techniques which are covered in this book. When a suitable logical design has been obtained, the development phase can begin.
4. Development phase –this involves creating the database structure using an appropriate Database Management System (DBMS) and usually includes the development of applications that provide a user interface consisting of forms and reports which will allow controlled access to the data held in the database.
5. Deployment/implementation –when the system has been developed, it will be tested, it will then be deployed ready for use.
6. Operations and maintenance –following the system release for use it will be maintained until it reaches the end of its useful life, at this stage the development lifecycle may restart.

1.1 Conceptual data modeling

Why do you need to model?

In many environments modeling is used to ensure that a product will satisfy the user's requirements before it is produced. For example, an architect may use a scale model of a building so the client can see what it will look like before it is built. This allows for any changes to be made to the design following feedback and before any expensive building work takes place. Similarly, a modeling approach is needed when designing a database system so that interested parties can check that the design will satisfy the requirements.

(from *Database design and implementation: A practical introduction using Oracle SQL*)

TEXTO 9

INTERVIEW | MARCH 2, 2020

The coexistence of artificial and natural intelligence

Interview with Joanna Bryson, leading expert in artificial and natural intelligence

Joanna Bryson is an associate professor in the Department of Computer Science at the University of Bath where she works on Artificial Intelligence, ethics and collaborative cognition. She is a global academic Expert in Artificial and Natural Intelligence, significantly engaged in Global Technology Policy, a Scientific Board Member for the Task Force on Artificial Intelligence and Cybersecurity at CEPS (Centre for European Policy Studies), and a member of the Ethics board at Mindfire Global.

What is artificial intelligence to you based on your work and experience?

I tend to use a definition of intelligence that I actually learned as an undergraduate in psychology, which I have recently learned, it's more than a century old: intelligence is "being able to do the right thing at the right time." Another way to think about that is as a form of computation. You're translating the current context into an appropriate action, right? So it's a transformation of information. If we can agree that that's what intelligence is, then the only difference with artificial intelligence is that it's a subset of all the intelligent things that a human has intentionally created. So it's an artifact. And I think that's one of the things people forget. They learn this word AI and they think it's some kind of space that we discovered. But actually it's something we've built.

How did you get into this field of study and why?

The first time I ever worked in AI was actually 1986, but it wasn't continuous. I was interested in it, but my undergraduate degree was actually in behavioral science. I was interested in what intelligence was for and how different species use it, but I was also a really good programmer. I thought I could get into the best university if I combined what I was good at with what I was interested in, so I went into artificial intelligence. In reality I was interested in everything and I just thought this was as good a thing as any, but almost everything else came out of that first master's degree.

Since you started out, how has AI developed? What's been the evolution?

The main thing has been the massive increase in computation and of course devices have become cheaper and more widely spread. Now we have much more data. We have the combination of faster computing and more data. We also have slightly better machine learning algorithms. Of course we have things that more closely replicate what we see in nature and I think that's why people think there's a lot more artificial intelligence than there was before, but actually as soon as we had Google search and spell checking, we had AI. AI has been changing things for decades.

A lot of the narrative has changed. Part of it is that the digital companies have just come into the fore and, of course, there are many digital companies, but a few of them have managed to capture a natural monopoly and have grown into incredibly strong positions. So it was only in the last 10 years, I think, that the digital companies surpassed the petrochemical companies as the largest companies in the world. And that's been true on both sides of the great firewall of China, both in China and in the West. At the same time the traditional petrochemical and manufacturing giants are still there, it's not like they went away, but this tech industry suddenly has a lot of money, which may not just be about how good they are at what they do, it may also be that we haven't figured out appropriately how to tax them yet. I think that's part of the problem.

What are going to be the challenges for the coming five to 10 years?

In 5 to 10 years I think we're going to be trying to deal with the same challenges that we have today. Probably other challenges will emerge during that period too. What everybody is talking about right now, for example, is the assault on democracy. How do we coordinate behavior when it is so easy to have impact, purchased by money, across national borders? Our understanding of ourselves is changing because we can know so much about ourselves and our behaviour can be predicted. Helping humans understand how we behave and the extent to which we are a product of our culture and our context so that we can better understand and figure out how to govern and regulate ourselves is part of the problem.

We've all seen that there's been rejection of this technology crisis just as there's been a huge rejection of climate science by people who don't want to think it's a problem. I think there will be a backlash against psychology for example. Yes, there have been some high profile problems in psychology, but this backlash far exceeds that. There will be an assault on science and I think there will be various assaults on knowledge. And the worst thing about that is that some of the big name assaulters that are trying to run an agenda in the public discourse are positioning themselves to take advantage of the knowledge that they're pretending they don't believe in. So I think we'll see a problem of disinformation, communication, and coordination in terms of what is it that a national government does.

(…)

(Recuperado de https://digitalfuturesociety.com/interviews/)

TEXTO 10

How to set up dual monitors in Windows 10

There are plenty of reasons to set up a second monitor for your Windows computer: ergonomics, easier scanning of large work spaces, and sharing presentations on a larger screen, to name a few.

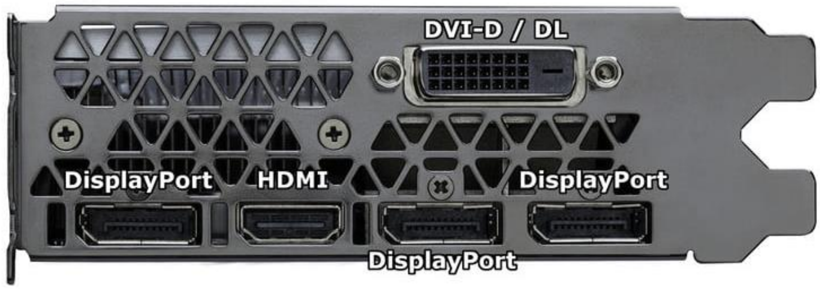
Setting up dual monitors helps your productivity immensely. From having multiple browser windows open to using complex sets of editing tools for photos or video or having guides open on a second screen for research or gaming — it's always an excellent way to maximize your productivity. Here you will see how to set up your second monitor quickly and simply.

Step 1: Check your I/O panel and GPU for connections

Your PC has an area for all important cable connections, typically called the I/O panel. If it's been a while since you've peeked back there, take a look *before* you buy a secondary monitor. If you have a discrete (non-integrated) GPU, then there may also be a GPU section with ports of its own to take stock of. Snap a quick photo of this whole section for quick reference if necessary.

Now check to see what kind of display connections you have to work with. For modern monitors and PCs, the two common options are HDMI and DisplayPort, with even newer models also offering USB-C and Thunderbolt 3 for A/V data. You may also have a DVI-I port for managing older digital/analog connections, and some PCs might still have a VGA port (although we don't advise using this for a second monitor).

Make sure you have at least two of these display ports for two monitors. Note which spare port you will be attaching the new monitor to and what connection type you'll need.



You can also use a monitor as a second screen with a laptop, as long as that laptop has compatible display ports of its own. The laptop screen itself can also be used as a second monitor with the right setup, although that isn't as common.

Step 2: Make sure your monitors are compatible and connect them

With port information in hand, you're ready to pick out the best new monitor for your dual-display setup. Double-check to see that the monitor includes the right type of port for your open PC connection, and buy any necessary cables as well. For a smooth whole-screen experience, it's a good idea to pick a monitor with a "bezel-less" or thin-bezel screen.

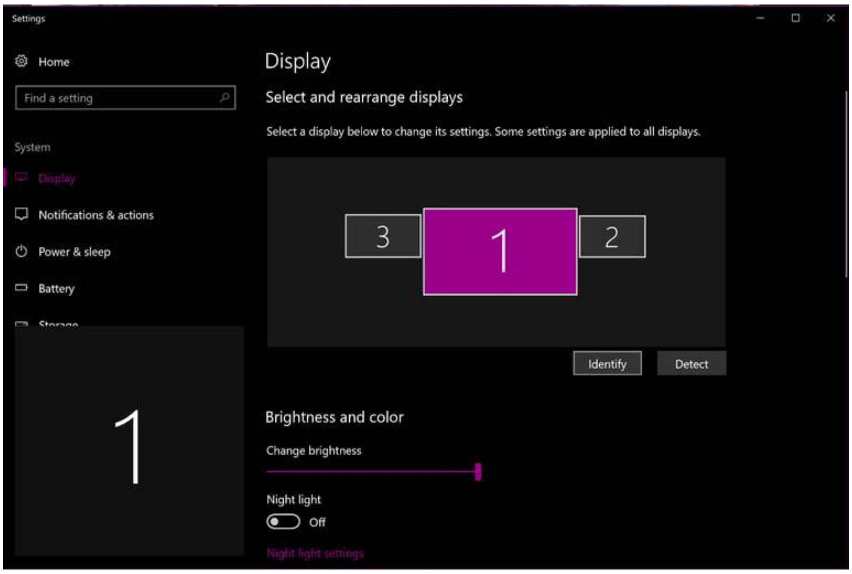
Now you're ready to position both monitors on your desk and connect them to your PC.

Step 3: Go to Display settings on Windows 10

Fire up your PC. When you reach the home screen, right-click on an empty part of the screen, and choose *Display Settings*.

The window will show your connected displays, which display is your primary display, and on which side the secondary is positioned (you can choose a different side by dragging the screen numbers). If you do not see your second monitor show up, try unplugging the cables and plugging them back in again. There is also a wireless option if you scroll down and choose *Connect to a Wireless Display* — less common but potentially useful. If it's still not working, check for Windows 10 updates, reboot, and try again.

Step 4: Choose your display option



If both of your monitors are showing up, then you need to choose how they will work. Select your secondary monitor at the top, then scroll down in the *Display Settings* window, and select the *Multiple Displays* list to see your options.

You have two primary choices. The first is to *Extend Desktop to This Display*. This will make your two monitors function as a single whole monitor with a stretched-out desktop that you can freely move things between — the ideal choice for most dual-monitor users. The other option is to *Duplicate Desktop on 1 and 2*. This option is usually reserved for teaching and training setups where one screen will be facing the learners.

(Recuperado de https://www.digitaltrends.com/computing/how-to-setup-dual-monitors-in-windows-10/)

TEXTO 11

Trends in Technology

If an instruction set architecture is to be successful, it must be designed to survive rapid changes in computer technology. After all, a successful new instruction set architecture may last decades—for example, the core of the IBM mainframe has been in use for more than 40 years. An architect must plan for technology changes that can increase the lifetime of a successful computer. To plan for the evolution of a computer, the designer must be aware of rapid changes in implementation technology. Four implementation technologies, which change at a dramatic pace, are critical to modern implementations:

■ Integrated circuit logic technology —Transistor density increases by about 35% per year, quadrupling in somewhat over four years. Increases in die size are less predictable and slower, ranging from 10% to 20% per year. The combined effect is a growth rate in transistor count on a chip of about 40% to 55% per year. Device speed scales more slowly, as we discuss below.

■ Semiconductor DRAM (dynamic random-access memory) —Capacity increases by about 40% per year, doubling roughly every two years.

■ Magnetic disk technology —Prior to 1990, density increased by about 30% per year, doubling in three years. It rose to 60% per year thereafter, and increased to 100% per year in 1996. Since 2004, it has dropped back to 30% per year. Despite this roller coaster of rates of improvement, disks are still 50–100 times cheaper per bit than DRAM. This technology is central to Chapter 6, and we discuss the trends in detail there.

■ Network technology —Network performance depends both on the performance of switches and on the performance of the transmission system. We discuss the trends in networking in Appendix E. These rapidly changing technologies shape the design of a computer that, with speed and technology enhancements, may have a lifetime of five or more years. Even within the span of a single product cycle for a computing system (two years of design and two to three years of production), key technologies such as DRAM change sufficiently that the designer must plan for these changes. Indeed, designers often design for the next technology, knowing that when a product begins shipping in volume that next technology may be the most cost effective or may have performance advantages. Traditionally, cost has decreased at about the rate at which density increases. Although technology improves continuously, the impact of these improvements can be in discrete leaps, as a threshold that allows a new capability is reached. For example, when MOS technology reached a point in the early 1980s where between 25,000 and 50,000 transistors could fit on a single chip, it became possible to build a single-chip, 32-bit microprocessor. By the late 1980s, first level caches could go on chip. By eliminating chip crossings within the processor and between the processor and the cache, a dramatic improvement in cost-performance and power-performance was possible.