DOWNLOAD PDF YOU ARE A COMPUTER

Chapter 1 : News, Tips, and Advice for Technology Professionals - TechRepublic

Here you can peruse the debate that followed the paper presenting the simulation argument. The original paper is here, as are popular synopses, scholarly papers commenting or expanding on or critiquing the first paper, and some replies by the author.

The Ishango bone Devices have been used to aid computation for thousands of years, mostly using one-to-one correspondence with fingers. The earliest counting device was probably a form of tally stick. Later record keeping aids throughout the Fertile Crescent included calculi clay spheres, cones, etc. The Roman abacus was developed from devices used in Babylonia as early as BC. Since then, many other forms of reckoning boards or tables have been invented. In a medieval European counting house , a checkered cloth would be placed on a table, and markers moved around on it according to certain rules, as an aid to calculating sums of money. The Antikythera mechanism is believed to be the earliest mechanical analog "computer", according to Derek J. It was discovered in in the Antikythera wreck off the Greek island of Antikythera , between Kythera and Crete , and has been dated to circa BC. Devices of a level of complexity comparable to that of the Antikythera mechanism would not reappear until a thousand years later. Many mechanical aids to calculation and measurement were constructed for astronomical and navigation use. A combination of the planisphere and dioptra , the astrolabe was effectively an analog computer capable of working out several different kinds of problems in spherical astronomy. An astrolabe incorporating a mechanical calendar computer [9] [10] and gear -wheels was invented by Abi Bakr of Isfahan , Persia in The sector , a calculating instrument used for solving problems in proportion, trigonometry, multiplication and division, and for various functions, such as squares and cube roots, was developed in the late 16th century and found application in gunnery, surveying and navigation. The planimeter was a manual instrument to calculate the area of a closed figure by tracing over it with a mechanical linkage. A slide rule The slide rule was invented around â€”, shortly after the publication of the concept of the logarithm. It is a hand-operated analog computer for doing multiplication and division. As slide rule development progressed, added scales provided reciprocals, squares and square roots, cubes and cube roots, as well as transcendental functions such as logarithms and exponentials, circular and hyperbolic trigonometry and other functions. Slide rules with special scales are still used for quick performance of routine calculations, such as the E6B circular slide rule used for time and distance calculations on light aircraft. In the s, Pierre Jaquet-Droz , a Swiss watchmaker , built a mechanical doll automaton that could write holding a quill pen. By switching the number and order of its internal wheels different letters, and hence different messages, could be produced. In effect, it could be mechanically "programmed" to read instructions. It used a system of pulleys and wires to automatically calculate predicted tide levels for a set period at a particular location. The differential analyser , a mechanical analog computer designed to solve differential equations by integration , used wheel-and-disc mechanisms to perform the integration. In , Lord Kelvin had already discussed the possible construction of such calculators, but he had been stymied by the limited output torque of the ball-and-disk integrators. The torque amplifier was the advance that allowed these machines to work. Starting in the s, Vannevar Bush and others developed mechanical differential analyzers. Charles Babbage , an English mechanical engineer and polymath , originated the concept of a programmable computer. Considered the " father of the computer ", [17] he conceptualized and invented the first mechanical computer in the early 19th century. After working on his revolutionary difference engine , designed to aid in navigational calculations, in he realized that a much more general design, an Analytical Engine , was possible. The input of programs and data was to be provided to the machine via punched cards , a method being used at the time to direct mechanical looms such as the Jacquard loom. For output, the machine would have a printer, a curve plotter and a bell. The machine would also be able to punch numbers onto cards to be read in later. The Engine incorporated an arithmetic logic unit , control flow in the form of conditional branching and loops , and integrated memory , making it the first design for a general-purpose computer that could be described in modern terms as Turing-complete. Eventually, the project was dissolved with the decision of the British Government to cease funding. He gave a successful demonstration of its use in computing tables in However,

these were not programmable and generally lacked the versatility and accuracy of modern digital computers. The differential analyser , a mechanical analog computer designed to solve differential equations by integration using wheel-and-disc mechanisms, was conceptualized in by James Thomson , the brother of the more famous Lord Kelvin. This built on the mechanical integrators of James Thomson and the torque amplifiers invented by H. A dozen of these devices were built before their obsolescence became obvious. By the s, the success of digital electronic computers had spelled the end for most analog computing machines, but analog computers remained in use during the s in some specialized applications such as education control systems and aircraft slide rule. Digital computers It has been suggested that this section be split out into another article titled Digital computer. Discuss May Electromechanical By , the United States Navy had developed an electromechanical analog computer small enough to use aboard a submarine. This was the Torpedo Data Computer , which used trigonometry to solve the problem of firing a torpedo at a moving target. During World War II similar devices were developed in other countries as well. Early digital computers were electromechanical; electric switches drove mechanical relays to perform the calculation. These devices had a low operating speed and were eventually superseded by much faster all-electric computers, originally using vacuum tubes. The Z2 , created by German engineer Konrad Zuse in , was one of the earliest examples of an electromechanical relay computer. It was quite similar to modern machines in some respects, pioneering numerous advances such as floating point numbers. The engineer Tommy Flowers , working at the Post Office Research Station in London in the s, began to explore the possible use of electronics for the telephone exchange. Experimental equipment that he built in went into operation five years later, converting a portion of the telephone exchange network into an electronic data processing system, using thousands of vacuum tubes. The German encryption machine, Enigma , was first attacked with the help of the electro-mechanical bombes which were often run by women. It had paper-tape input and was capable of being configured to perform a variety of boolean logical operations on its data, but it was not Turing-complete. Colossus Mark I contained 1, thermionic valves tubes , but Mark II with 2, valves, was both 5 times faster and simpler to operate than Mark I, greatly speeding the decoding process. Like the Colossus, a "program" on the ENIAC was defined by the states of its patch cables and switches, a far cry from the stored program electronic machines that came later. Once a program was written, it had to be mechanically set into the machine with manual resetting of plugs and switches. It could add or subtract times a second, a thousand times faster than any other machine. It also had modules to multiply, divide, and square root. High speed memory was limited to 20 words about 80 bytes. Built under the direction of John Mauchly and J. The machine was huge, weighing 30 tons, using kilowatts of electric power and contained over 18, vacuum tubes, 1, relays, and hundreds of thousands of resistors, capacitors, and inductors. Turing proposed a simple device that he called "Universal Computing machine" and that is now known as a universal Turing machine. He proved that such a machine is capable of computing anything that is computable by executing instructions program stored on tape, allowing the machine to be programmable. Von Neumann acknowledged that the central concept of the modern computer was due to this paper. Except for the limitations imposed by their finite memory stores, modern computers are said to be Turing-complete , which is to say, they have algorithm execution capability equivalent to a universal Turing machine. Stored programs A section of the Manchester Baby , the first electronic stored-program computer Early computing machines had fixed programs. Changing its function required the re-wiring and re-structuring of the machine. A stored-program computer includes by design an instruction set and can store in memory a set of instructions a program that details the computation. The theoretical basis for the stored-program computer was laid by Alan Turing in his paper. In , Turing joined the National Physical Laboratory and began work on developing an electronic stored-program digital computer. His report "Proposed Electronic Calculator" was the first specification for such a device. Grace Hopper was the first person to develop a compiler for programming language. At least seven of these later machines were delivered between and , one of them to Shell labs in Amsterdam. Transistors A bipolar junction transistor The bipolar transistor was invented in From onwards transistors replaced vacuum tubes in computer designs, giving rise to the "second generation" of computers. Compared to vacuum tubes, transistors have many advantages: Silicon junction transistors were much more reliable than vacuum tubes and had longer, indefinite, service life. Transistorized

computers could contain tens of thousands of binary logic circuits in a relatively compact space. At the University of Manchester , a team under the leadership of Tom Kilburn designed and built a machine using the newly developed transistors instead of valves. The idea of the integrated circuit was first conceived by a radar scientist working for the Royal Radar Establishment of the Ministry of Defence , Geoffrey W. This new development heralded an explosion in the commercial and personal use of computers and led to the invention of the microprocessor. While the subject of exactly which device was the first microprocessor is contentious, partly due to lack of agreement on the exact definition of the term "microprocessor", it is largely undisputed that the first single-chip microprocessor was the Intel , [58] designed and realized by Ted Hoff , Federico Faggin , and Stanley Mazor at Intel. The 50lb IBM was an early example. Later portables such as the Osborne 1 and Compaq Portable were considerably lighter, but still needed to be plugged in. The first laptops , such as the Grid Compass , removed this requirement by incorporating batteries - and with the continued miniaturization of computing resources and advancements in portable battery life, portable computers grew in popularity in the s. These smartphones and tablets run on a variety of operating systems and soon became the dominant computing device on the market, with manufacturers reporting having shipped an estimated million devices in 2Q

Chapter 2 : What Can You Do With a Computer Science Degree? [Video] | Rasmussen College

The second type of computer you may be familiar with is a laptop computer, commonly called a laptop. Laptops are battery-powered computers that are more portable than desktops, allowing you to use them almost anywhere.

How to determine whether a computer is running a bit version or bit version of the Windows operating system Content provided by Microsoft Applies to: For more information, refer to this Microsoft webpage: This article also describes how to manually determine whether a computer is running a bit or bit version of Windows. Determine which version of Windows is installed Use the following methods to determine which version of Windows is installed, as appropriate for the operating system that you are running. There are two methods that you can use to determine whether you are running a bit or bit version of Windows 8. If one method does not work, try the other method. View the System window in Control Panel Swipe in from the right edge of the screen, and then tap Search. Or, if you are using a mouse, point to the lower-right corner of the screen, and then click Search. Type system in the search box, and then tap or click Settings. If you are running a bit version of Windows 8, bit Operating System is displayed in the System type field under the System heading. View the System Information window Swipe in from the right edge of the screen, and then tap Search. In the search box, type system information. If you are running a bit version of Windows 8, xbased PC is displayed in the System type field under the Item heading. If you cannot determine whether the computer is running a bit or bit version of Windows 8 by using these methods, go to the "Next Steps" section. If you have Windows Vista or Windows 7, there are two methods to determine whether you are running a bit version or a bit version. The operating system is displayed as follows: For a bit version operating system, bit Operating System appears for the System type under System. When System Summary is selected in the navigation pane, the operating system is displayed as follows: For a bit version operating system, xbased PC appears for the System type under Item. If you cannot determine the operating system bit count by using these methods, go to the "Next Steps" section. How to determine whether you are running a bit or a bit edition of Windows If you have Windows XP, there are two methods to determine whether you are running a bit version or a bit version. Click the General tab. When System Summary is selected in the navigation pane, locate Processor under Item in the details pane. If the value that corresponds to Processor starts with x86, the computer is running a bit version of Windows. If you have Windows Server , there are two methods to determine whether you are running a bit version or a bit version. For a bit version operating system, Windows Server Enterprise x64 Edition appears under System. Intel Itanium-based computers can run only bit versions of Windows. Intel Itanium-based computers cannot run bit versions of Windows. Currently, bit versions of Windows run only on Itanium-based computers and on AMDbased computers. As a next step, you might want to ask someone that you know for help, or you might want to contact Support. For information about how to contact Support, go to the Microsoft Support website. The third-party products that this article discusses are manufactured by companies that are independent of Microsoft. Microsoft makes no warranty, implied or otherwise, about the performance or reliability of these products.

Chapter 3 : 7 Ways to Have Computer Fun - wikiHow

Suddenly, everything is a computer. Phones, of course, and televisions. Also toasters and door locks, baby monitors and juicers, doorbells and gas grills.

So what does your screen look like now? Can you move the cursor around on the screen? Can you see that? I need you to look back there again and find the other cable. Well, can you see if it is? Do you still have the boxes and manuals and packing stuff your computer came in? I keep them in the closet. Go get them and unplug your system and pack it up just like it was when you got it. Then take it back to the store you bought it from. Is it that bad? What do I tell them? Computers are intimidating, as anyone who still remembers the trepidation that preceeded powering up the beastie for the first time can tell you. That sense of general unease and the certainty that the blasted machine knows more than we ever will has led to the growth of a particular genre of stories, stupid computer user tales. One needs reassurance that one is not entirely clueless, and these tales supply that. Attempting to use the mouse as a footpedal. Holding a document up to the screen, thinking the monitor will somehow scan and fax it. Attaching floppy diskettes to the side of a metal filing cabinet with magnets. Photocopying a diskette when asked to make a copy. This charming anecdote has been kicking around on the Internet since approximately , and it has morphed into a number of variations identifying it as an actual call received by Microsoft, Novell, Corel, or IBM, with some versions adding additional flourishes such as: This is a true story from the WordPerfect helpline. Folks often attempt to make a good story even better, which explains these additional flourishes. Such is the nature of lore: Ah, but was this a true story? Everything from that point on is what he wished he could have said but wisely kept to himself. But I could still fantasize: Kudos to the unsung army of lads and lasses who all too often have to exude Job-like patience in their dealings with the terminally computer illiterate. Is it any wonder tales of the Bastard Operator From Hell ilk are much beloved among their ranks?

Chapter 4 : Computer - Simple English Wikipedia, the free encyclopedia

10 things you have to know to be computer literate Many of your users are coasting along without adequate computer knowledge. Help them close the gap by sharing this list of essential skills.

History of computers[change change source] The Jacquard loom was one of the first programmable devices. Definition[change change source] A computer is a programmable electronic device designed to accept data, perform prescribed mathematical and logical operations at high speed, and display the results of these operations, all under the control of software. Mainframes, desktop and laptop computers, tablets and smartphones are some of the different types of computers. An electronic machine which helps in solving problems quickly and easily. It solves problems according to instructions given to it by the computer user called programs or software. It is a digital machine that uses binary digits used in all fields. Automation[change change source] Most humans have a problem with math. It is hard to remember all the steps! People made tools to help them remember where they were in a math problem. The other problem people have is that they have to do the same problem over and over and over again. A cashier had to make change every day in her head or with a piece of paper. That took a lot of time and made mistakes. So, people made calculators that did those same things over and over. This part of computer history is called the "history of automated calculation," which is a fancy phrase for "the history of machines that make it easy for me to do this same maths problem over and over without making mistakes. Computer programming People do not want a machine that would do the same thing over and over again. For example, a music box is a machine that plays the same music over and over again. Some people wanted to be able to tell their machine to do different things. For example, they wanted to tell the music box to play different music every time. They wanted to be able to program the music box- to order the music box to play different music. This part of computer history is called the "history of programmable machines" which is a fancy phrase for "The history of machines that I can order to do different things if I know how to speak their language. He built a mechanical theater which performed a play lasting 10 minutes and was operated by a complex system of ropes and drums. These ropes and drums were the language of the machine- they told what the machine did and when. Some people argue that this is the first programmable machine. Many say the "castle clock", an astronomical clock invented by Al-Jazari in , is the first known programmable analog computer. The Computing Era[change change source] At the end of the Middle Ages , people in Europe thought math and engineering were more important. In , Wilhelm Schickard made a mechanical calculator. Other Europeans made more calculators after him. They were not modern computers because they could only add, subtract, and multiply- you could not change what they did to make them do something like play Tetris. Because of this, we say they were not programmable. Now engineers use computers to design and plan. In , Joseph Marie Jacquard used punched paper cards to tell his textile loom what kind of pattern to weave. He could use punch cards to tell the loom what to do, and he could change the punch cards, which means he could program the loom to weave the pattern he wanted. This means the loom was programmable. Charles Babbage wanted to make a similar machine that could calculate. He called it "The Analytical Engine". As time went on, computers were used more. People get bored easily doing the same thing over and over. Imagine spending your life writing things down on index cards, storing them, and then having to go find them again. Census Bureau in had hundreds of people doing just that. It was expensive, and reports took a long time. Then an engineer worked out how to make machines do a lot of the work. Herman Hollerith invented a tabulating machine that would automatically add up information that the Census bureau collected. They leased the machines instead of selling them. Because of machines like this, new ways of talking to these machines were invented, and new types of machines were invented, and eventually the computer as we know it was born. Analog and Digital Computers[change change source] In the first half of the 20th century, scientist s started using computers, mostly because scientists had a lot of math to figure out and wanted to spend more of their time thinking about science questions instead of spending hours adding numbers together. For example, if they had to launch a rocket ship , they needed to do a lot of math to make sure the rocket worked right. So they put together computers. These analog computer s used analog circuits,

which made them very hard to program. In the s, they invented digital computers, and soon made them easier to program. However this is not the case as many consecutive attempts have been made to bring arithmetic logic to l3 High-scale computers[change change source] Scientists figured out how to make and use digital computers in the s and s. Scientists made a lot of digital computers, and as they did, they figured out how to ask them the right sorts of questions to get the most out of them. Here are a few of the computers they built: Defining characteristics of some early digital computers of the s In the history of computing hardware Name.

Chapter 5 : Are You Chatting With a Human or a Computer? | Science | Smithsonian

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The LCD consists of several thin layers that polarize the light passing through them. The polarization of one layer, containing long thin molecules called liquid crystals, can be controlled electronically at each pixel, blocking varying amounts of the light to make a pixel lighter or darker. Other types of flat panel technology exist such as plasma displays but LCDs are most commonly used in computers, especially laptops. Older LCDs had slow response times and low contrast, but active matrix LCD screens have a transparent thin film transistor TFT controlling each pixel, so response, contrast, and viewing angle are much improved. Flat panel displays are much lighter and less bulky than CRT monitors, and they consume much less power. They have been more expensive than CRTs in the past, but the price gap is narrowing. You will see many more flat panels in the future. As with CRTs, the display size of a flat panel is expressed in inches, and the resolution is the number of pixels horizontally and vertically on the display. Ink Jet Printer Flat panel display LCD For hardcopy printed output, you need some kind of printer attached to your computer or available over a network. The most common type of printer for home systems is the color ink jet printer. These printers form the image on the page by spraying tiny droplets of ink from the print head. The printer needs several colors of ink cyan, yellow, magenta, and black to make color images. Some photo-quality ink jet printers have more colors of ink. Ink jet printers are inexpensive, but the cost of consumables ink cartridges and special paper make them costly to operate in the long run for many purposes. Laser Printer Inkjet Printer A laser printer produces good quality images by the same technology that photocopiers use. A drum coated with photosensitive material is charged, then an image is written onto it by a laser or LEDs which makes those areas lose the charge. The drum then rolls through toner tiny plastic particles of pigment that are attracted to the charged areas of the drum. The toner is then deposited onto the paper, and then fused into the paper with heat. Most laser printers are monochrome one color only, usually black , but more expensive laser printers with multiple color toner cartridges can produce color output. Laser printers are faster than ink jet printers. Their speed is rated in pages per minute ppm. Other Printers Laser Printer Multi-function printers are available that not only operate as a computer printer, but also include the hardware needed to be a scanner, photocopier, and FAX machine as well. Dot matrix printers use small electromagnetically activated pins in the print head, and an inked ribbon, to produce images by impact. These printers are slow and noisy, and are not commonly used for personal computers anymore but they can print multi-layer forms, which neither ink jet or laser printers can. Sound Output Computers also produce sound output, ranging from simple beeps alerting the user, to impressive game sound effects, to concert quality music. The circuitry to produce sound may be included on the motherboard, but high quality audio output from a PC usually requires a sound card in one of the expansion slots, connected to a set of good quality external speakers or headphones. Multimedia is a term describing computer output that includes sound, text, graphics, movies, and animation. A sound card is an example of a multimedia output device as is a monitor that can display graphics.

Chapter 6 : Computer Basics: What is a Computer?

Have computer fun by checking out new games, chatting with your friends, learning something new, exploring computers as a hobby, watching funny videos or even creating your own content to share. As long as your computer works, you'll never have to be bored again.

What is a Computer? A computer is an electronic device that manipulates information, or data. It has the ability to store, retrieve, and process data. You may already know that you can use a computer to type documents, send email, play games, and browse the Web. You can also use it to edit or create spreadsheets, presentations, and even videos. Watch the video below to learn about different types of computers. Hardware is any part of your computer that has a physical structure, such as the keyboard or mouse. Software is any set of instructions that tells the hardware what to do and how to do it. Examples of software include web browsers, games, and word processors. Below, you can see an image of Microsoft PowerPoint, which is used to create presentations. Everything you do on your computer will rely on both hardware and software. For example, right now you may be viewing this lesson in a web browser software and using your mouse hardware to click from page to page. As you learn about different types of computers, ask yourself about the differences in their hardware. What are the different types of computers? When most people hear the word computer, they think of a personal computer such as a desktop or laptop. However, computers come in many shapes and sizes, and they perform many different functions in our daily lives. Desktop computers Many people use desktop computers at work, home, and school. Laptop computers The second type of computer you may be familiar with is a laptop computer, commonly called a laptop. Laptops are battery-powered computers that are more portable than desktops, allowing you to use them almost anywhere. Tablet computers Tablet computersâ€”or tabletsâ€”are handheld computers that are even more portable than laptops. Instead of a keyboard and mouse, tablets use a touch-sensitive screen for typing and navigation. The iPad is an example of a tablet. Servers A server is a computer that serves up information to other computers on a network. Many businesses also use local file servers to store and share files internally. Here are a few common examples. Many cell phones can do a lot of things computers can do, including browsing the Internet and playing games. They are often called smartphones. Wearable technology is a general term for a group of devicesâ€”including fitness trackers and smartwatchesâ€”that are designed to be worn throughout the day. These devices are often called wearables for short. A game console is a specialized type of computer that is used for playing video games on your TV. Many TVs now include applicationsâ€”or appsâ€”that let you access various types of online content. For example, you can stream video from the Internet directly onto your TV. PCs and Macs Personal computers come in two main styles: Both are fully functional, but they have a different look and feel, and many people prefer one or the other. Today, this is the most common type of personal computer, and it typically includes the Microsoft Windows operating system. Macs The Macintosh computer was introduced in , and it was the first widely sold personal computer with a graphical user interface, or GUI pronounced gooey.

Chapter 7 : Are We Living in a Computer Simulation? - Scientific American

The Turing test, a means of determining whether a computer possesses intelligence, requires it to trick a human into thinking it's chatting with another person (Feedloader (Clickability)).

Answers to 16 common questions. Argues in support of what is also my contention, that the simulation-hypothesis is not a radical skeptical hypothesis. Prospects and Consequences Barry Dainton Draft, Those who believe suitably programmed computers could enjoy conscious experience of the sort we enjoy must accept the possibility that their own experience is being generated as part of a computerized simulation. It would be a mistake to dismiss this is just one more radical sceptical possibility: The first part of this paper is devoted to broadening the scope of the argument: The implications of this result are the focus of the second part of the paper. The topics discussed include: Are You a Sim? Brian Weatherson Philosophical Quarterly, Weatherson is prepared to accept the Simulation Argument up to, but not including, the final step, in which I use the Bland Principle of Indifference. In this paper, he examines four different ways to understand this principle and argues that none of them serves the purpose. For my reply, see the paper below. Note that Weatherson accepts the third disjunct in the conclusion of the Simulation Argument - i. By contrast, I do not accept this: I think we currently lack grounds for eliminating either of the three disjuncts. Living in a Simulated Universe. Barrow Universe or Multiverse? Bernard Carr Cambridge University Press: Nick Bostrom Philosophical Quarterly Vol. I argue he has misinterpreted the relevant indifference principle and that he has not provided any sound argument against the correct interpretation, nor has he addressed the arguments for this principle that I gave in the original paper. There also a few words on the difference between the Simulation Argument and traditional brain-in-a-vat arguments, and on so-called epistemological externalism. Simulation Scenarios Barry Dainton Powerpoint presentation, Covers many related issues, but may be hard to understand without the oral presentation that is meant to go with these 79 slides. The Simulation Argument again. Anthony Brueckner Analysis ,Vol. See below for my reply. I also argue that he is mistaken in his critique of the idea that simulated beings may themselves create ancestor-simulations. Jenkins Journal of Futures Studies, Vol. It is thus highly probable that we are a form of artificial intelligence inhabiting one of these simulations. To avoid stacking i. Long range planning beyond this date would therefore be futile. We work out some of them here. We look at the resurrection of the body and at theodicy. We conclude with some reflections on the relations between the SA and Neoplatonism friendly and between the SA and theism less friendly.

Chapter 8 : How to Sit at a Computer (with Pictures) - wikiHow

You can think of a personal computer like this: the personal computer is like your skin: you can see it, other people can see it, and through your skin you feel wind, water, air, and the rest of the world.

Chapter 9 : The Simulation Argument

No matter how tech savvy you are, there are certain things every one of us has to deal with when using a computerâ€”and we don't always deal with them in the most efficient ways.