

Switch Case C

Switch statement

Ada, C/C++, C#, Visual Basic .NET, Java, and in many other types of language, using such keywords as switch, case, select, or inspect. Switch statements

In computer programming languages, a switch statement is a type of selection control mechanism used to allow the value of a variable or expression to change the control flow of program execution via search and map.

Switch statements function somewhat similarly to the if statement used in programming languages like C/C++, C#, Visual Basic .NET, Java and exist in most high-level imperative programming languages such as Pascal, Ada, C/C++, C#, Visual Basic .NET, Java, and in many other types of language, using such keywords as switch, case, select, or inspect.

Switch statements come in two main variants: a structured switch, as in Pascal, which takes exactly one branch, and an unstructured switch, as in C, which functions as a type of goto. The main reasons for using a switch include improving clarity, by reducing otherwise repetitive coding, and (if the heuristics permit) also offering the potential for faster execution through easier compiler optimization in many cases.

Switch

Centrifugal switch Company switch Crossbar switch Dead man's switch Fireman's switch Hall-effect switch Inertial switch Isolator switch Key switch Kill switch Latching

In electrical engineering, a switch is an electrical component that can disconnect or connect the conducting path in an electrical circuit, interrupting the electric current or diverting it from one conductor to another. The most common type of switch is an electromechanical device consisting of one or more sets of movable electrical contacts connected to external circuits. When a pair of contacts is touching current can pass between them, while when the contacts are separated no current can flow.

Switches are made in many different configurations; they may have multiple sets of contacts controlled by the same knob or actuator, and the contacts may operate simultaneously, sequentially, or alternately. A switch may be operated manually, for example, a light switch or a keyboard button, or may function as a sensing element to sense the position of a machine part, liquid level, pressure, or temperature, such as a thermostat. Many specialized forms exist, such as the toggle switch, rotary switch, mercury switch, push-button switch, reversing switch, relay, and circuit breaker. A common use is control of lighting, where multiple switches may be wired into one circuit to allow convenient control of light fixtures. Switches in high-powered circuits must have special construction to prevent destructive arcing when they are opened.

Nintendo Switch 2

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The Nintendo Switch 2 is a hybrid video game console developed by Nintendo, released in most regions on June 5, 2025. Like the original Switch, it can be used as a handheld, as a tablet, or connected via the dock to an external display, and the Joy-Con 2 controllers can be used while attached or detached. The Switch 2 has a larger liquid-crystal display, more internal storage, and updated graphics, controllers and social features. It supports 1080p resolution and a 120 Hz refresh rate in handheld or tabletop mode, and 4K resolution with a 60 Hz refresh rate when docked.

Games are available through physical game cards and Nintendo's digital eShop. Some game cards contain no data but allow players to download the game content. Select Switch games can use the improved Switch 2 performance through either free or paid updates. The Switch 2 retains the Nintendo Switch Online subscription service, which is required for some multiplayer games and provides access to the Nintendo Classics library of older emulated games; GameCube games are exclusive to the Switch 2. The GameChat feature allows players to chat remotely and share screens and webcams.

Nintendo revealed the Switch 2 on January 16, 2025, and announced its full specifications and release details on April 2. Pre-orders in most regions began on April 5. The system received praise for its social and technical improvements over its predecessor, though the increased prices of the console and its games library were criticized. More than 3.5 million units were sold worldwide within four days of release, making the Switch 2 the fastest-selling Nintendo console. As of June 30, 2025, the Switch 2 has sold over 5.8 million units worldwide, while Mario Kart World, which was also bundled with the Switch 2, was its best-selling game with over 5.63 million copies sold.

Duff's device

of The C Programming Language which requires only that the body of the switch be a syntactically valid (compound) statement within which case labels can

In the C programming language, Duff's device is a way of manually implementing loop unrolling by interleaving two syntactic constructs of C: the do-while loop and a switch statement. Its discovery is credited to Tom Duff in November 1983, when Duff was working for Lucasfilm and used it to speed up a real-time animation program.

Loop unrolling attempts to reduce the overhead of conditional branching needed to check whether a loop is done, by executing a batch of loop bodies per iteration. To handle cases where the number of iterations is not divisible by the unrolled-loop increments, a common technique among assembly language programmers is to jump directly into the middle of the unrolled loop body to handle the remainder.

Duff implemented this technique in C by using C's case label fall-through feature to jump into the unrolled body.

Kill switch

wheel-mounted kill switch, in case the accelerator pedal sticks and the driver needs to shut down the engine. A related concept is the dead man's switch, where the

A kill switch, also known more formally as an emergency brake, emergency stop (E-stop), emergency off (EMO), or emergency power off (EPO), is a safety mechanism used to shut off machinery in an emergency, when it cannot be shut down in the usual manner. Unlike a normal shut-down switch or shut-down procedure, which shuts down all systems in order and turns off the machine without damage, a kill switch is designed and configured to abort the operation as quickly as possible (even if it damages the equipment) and to be operated simply and quickly (so that even a panicked operator with impaired executive functions or a bystander can activate it). Kill switches are usually designed to be noticeable, even to an untrained operator or a bystander.

Some kill switches feature a removable, protective barrier against accidental activation (e.g. a plastic cover that must be lifted or glass that must be broken), known as a mollyguard. Kill switches are features of mechanisms whose normal operation or foreseeable misuse might cause injury or death; industrial designers include kill switches because damage to or the destruction of the machinery is less important than preventing workplace injuries and deaths.

A similar system, usually called a dead man's switch, is a device intended to stop a machine (or activate one) if the human operator becomes incapacitated or leaves the machine unattended, and is a form of fail-safe. They are commonly used in industrial applications (e.g., locomotives, tower cranes, freight elevators) and consumer applications (e.g., lawn mowers, tractors, personal watercraft, outboard motors, snow blowers, motorcycles and snowmobiles). The switch in these cases is held by the user, and turns off the machine if they let go. Some riding lawnmowers have a kill switch in the seat which stops the engine and blade if the operator's weight is no longer on the seat.

Nintendo Switch

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The Nintendo Switch is a video game console developed by Nintendo and released worldwide in most regions on March 3, 2017. Released in the middle of the eighth generation of home consoles, the Switch succeeded the Wii U and competed with Sony's PlayStation 4 and Microsoft's Xbox One; it also competes with the ninth generation consoles, the PlayStation 5 and Xbox Series X/S.

The Switch is a tablet that can either be docked for home console use or used as a portable device, making it a hybrid console. Its wireless Joy-Con controllers function as two halves of a standard controller and alternatively as individual controllers, featuring buttons, directional analog sticks for user input, motion sensing, and tactile feedback. A pair can attach to the sides of the console for handheld-style play, attach to a grip accessory to provide the form of a separated gamepad, or be used unattached. The Switch's system software supports online gaming through internet connectivity, as well as local wireless ad hoc connectivity with other consoles. Switch games and software are available on both physical flash-based ROM cartridges and digital distribution via Nintendo eShop; the system has no region lockout. Two hardware revisions were released: the handheld-only Switch Lite, released on September 20, 2019; and a higher-end version featuring an OLED screen, released on October 8, 2021.

The Switch was unveiled on October 20, 2016; the concept came about as Nintendo's reaction to financial losses attributed to poor sales of the Wii U and market competition from mobile games. Nintendo's then-president Satoru Iwata pushed the company towards mobile gaming and novel hardware. The Switch's design was aimed at a wide demographic of players through multiple modes of use. Nintendo preemptively sought the support of many third-party developers and publishers, as well as independent studios, to help build the Switch's game library alongside its first-party games, while standard electronic components, such as a chipset based on Nvidia's Tegra line, were chosen to make development for the console easier for programmers and more compatible with existing game engines.

Critical reception of the Switch was positive. The system received praise for its intuitive design and software library, with criticism directed toward hardware and controller issues. The Switch became a major commercial success, and has shipped over 150 million units worldwide as of December 2024, becoming the third-best selling console of all time behind the PlayStation 2 and Nintendo DS. It is also Nintendo's most successful home console to date, surpassing the Wii's 101.6 million units.

A direct successor, the Nintendo Switch 2, which is backward compatible with most Switch games, was released on June 5, 2025.

Conditional (computer programming)

1 2 3 Case-expressions in Haskell and match-expressions in F# and Haskell allow both switch-case and pattern matching usage. ^ In a Ruby case construct

In computer science, conditionals (that is, conditional statements, conditional expressions and conditional constructs) are programming language constructs that perform different computations or actions or return

different values depending on the value of a Boolean expression, called a condition.

Conditionals are typically implemented by selectively executing instructions. Although dynamic dispatch is not usually classified as a conditional construct, it is another way to select between alternatives at runtime.

Railroad switch

that this is always the case. A mechanism is provided to move the points from one position to the other ("changing the switch-blades" or "changing the

A railroad switch (AE), turnout, or (set of) points (CE) is a mechanical installation enabling railway trains to be guided from one track to another, such as at a railway junction or where a spur or siding branches off.

Dead man's switch

A dead man's switch is a switch that is designed to be activated or deactivated if the human operator becomes incapacitated, such as through abandonment

A dead man's switch is a switch that is designed to be activated or deactivated if the human operator becomes incapacitated, such as through abandonment, dozing, loss of consciousness, death, or being bodily removed from control. Originally applied to switches on a vehicle or machine, it has since come to be used to describe other intangible uses, as in computer software.

These switches are usually used as a form of fail-safe where they stop a machine with no operator from a potentially dangerous action or incapacitate a device as a result of accident, malfunction, or misuse. They are common in such applications as locomotives, aircraft refuelling, freight elevators, lawn mowers, tractors, personal watercraft, outboard motors, chainsaws, snowblowers, treadmills, snowmobiles, amusement rides, and many medical imaging devices. On some machines, these switches merely bring the machines back to a safe state, such as reducing the throttle to idle or applying brakes while leaving the machines still running and ready to resume normal operation once control is reestablished.

Dead man's switches are not always used to stop machines and prevent harm; such switches can also be used as a fail-deadly, since a spring-operated switch can be used to complete a circuit, not only to break it. This allows a dead man's switch to be used to activate a harmful device, such as a bomb. The switch that arms the device is only kept in its "off" position by continued pressure from the user's hand. The device will activate when the switch is released, so that if the user is knocked out or killed while holding the switch, the bomb will detonate. The Special Weapons Emergency Separation System is an application of this concept in the field of nuclear weapons. A more extreme version is Russia's Dead Hand program, which allows for either automatic or semiautomatic launch of nuclear missiles should a number of conditions be met, even if all Russian leadership were to be killed.

A similar concept is the handwritten letters of last resort from the Prime Minister of the United Kingdom to the commanding officers of the four British ballistic missile submarines. They contain orders on what action to take if the British government is destroyed in a nuclear attack. After a prime minister leaves office, the letters are destroyed unopened.

This concept has been employed with computer data, where sensitive information has been previously encrypted and released to the public, and the "switch" is the release of the decryption key, as with Vault 7.

A related device is a kill switch.

Electrical contact

normally closed (NO-C-NC). An alternate notation for Form C is SPDT. These contacts are quite frequently found in electrical switches and relays as the

An electrical contact is an electrical circuit component found in electrical switches, relays, connectors and circuit breakers. Each contact is a piece of electrically conductive material, typically metal. When a pair of contacts touch, they can pass an electrical current with a certain contact resistance, dependent on surface structure, surface chemistry and contact time; when the pair is separated by an insulating gap, then the pair does not pass a current. When the contacts touch, the switch is closed; when the contacts are separated, the switch is open. The gap must be an insulating medium, such as air, vacuum, oil, SF6. Contacts may be operated by humans in push-buttons and switches, by mechanical pressure in sensors or machine cams, and electromechanically in relays. The surfaces where contacts touch are usually composed of metals such as silver or gold alloys that have high electrical conductivity, wear resistance, oxidation resistance and other properties.

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