Chords symbols and their chords

This article simply describes how to determine the notes for each chord symbol, and sometimes gives a little extra information.

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Intro

The music for rock, pop, jazz, folk music, musicals and the like often shows chord symbols that give an indication of the harmony needed to accompany the melody. In particular, sheet music that gives just the melody and chord symbols (plus maybe lyrics) is called a lead sheet. With an understanding of chord symbols and a little bit of talent, a pianist or guitarist or other instrumentalist can construct an acceptable accompaniment from a lead sheet.
There are limitations to all this – for instance the system relates only to certain genres of music, and even then there are musically useful chords for which there are no standard chord symbols. It also has to be admitted that the system of chord symbols is not entirely logical, consistent or in accord with every aspect of musical theory, but we take it as we find it. In any case, a more logical, consistent and correct system could also be more long-winded.

Be warned that there is no definitive standard for chord symbols. You will find variations from what is described here – not just variations within the system described here, but entire alternative systems of chord symbols, from the figured-bass system of Baroque music to the numerical system associated with Nashville. Also, the system of note names in this article is the one for the English speakers. That is, the system of note names based on the letters A to G, and with no note called H!

And we assume modern tuning (“equal temperament”), in which G♯ and A♭ are the same note.

Classical music has a vocabulary for talking about chords, in which there are terms like German Sixth and French Sixth, but such terms are ignored in this article, and instead the names used for chords are those commonly associated with the chord symbols discussed.

There are different ways to read out a chord symbol like C7♭5. You could say, for example, “C seventh flattened fifth”, or “C seven flat five”. This article uses the longer version.

Be also warned that in written music the chord symbols are often unreliable or inadequate, and not just on the internet. And where sheet music gives both chord symbols and a fully written-out accompaniment, these are sometimes intended as alternatives, and may work badly together.

Some basics

Before looking at chord symbols, we offer this section providing a little information about music.

How high or low a note is is called its **pitch**.

The size of the difference of pitch between two notes is called an **interval**.

On a piano keyboard, the interval between any two neighbouring notes is always the same and is called a **semitone** (and the lower of the two notes is always the one on the left).

There are many tuning systems other than that used by the piano. These systems mostly relate to intervals that naturally occur when sound is made, and mostly are older than the mathematically-based tuning system used for pianos. These older systems have left their mark on the language that we use to talk about music, but in this article subtle distinctions relating to older tuning systems are ignored.

So we can express any interval on the piano as a number of semitones. For example, the interval from the white note C to the white note D just to its right is two semitones. That’s because there is one note (a black note) between the C and the D.

1 tone = 2 semitones.

A **scale** is a set of notes in order of pitch (lowest to highest or maybe highest to lowest). There are many kinds of scale, but the most common in Western music is the **major scale**, whose notes,
going from low to high, are often represented by the syllables *doh-re-mi-fa-so-la-ti-doh*. (There are other spellings of these syllables, and in some places *si* is used instead of *ti*.) Notice that the lowest and highest notes there are both called *doh*.

Countless tunes use notes from a major scale only. Many other tunes can be divided into just a few sections so that for every section there is a scale that all the notes in the section belong to.

In a major scale, some of the intervals between consecutive notes are tones and some are semitones. Here is the major scale again, this time with the intervals inserted.

\[ \text{doh-2-re-2-mi-1-fa-2-so-2-la-2-ti-1-doh} \]

In this, 1 and 2 are the intervals in semitones. It is this pattern of intervals (2-2-1-2-2-2-1 in semitones) that makes the scale a *major* scale.

Choose *any* note as a starting note (*doh*), then two semitones up is *re*, two more semitones up is *mi*, one more semitone up is *fa*, and so on, using the 2-2-1-2-2-2-1 pattern of intervals. So there are lots of different major scales, depending on how high or low the chosen *doh* is.

By the way, the first half of the major scale (*doh-re-mi-fa*) and the second half (*so-la-ti-doh*) have the same pattern of intervals (2-2-1).

For a major scale going beyond eight notes, the note names and interval patterns repeat:

\[ \text{doh-2-re-2-mi-1-fa-2-so-2-la-2-ti-1-doh-2-re-2-mi-1-fa-2-so-2-la-2-ti-1-doh} \]

Another *system of note names* (the important one for chord symbols) relates to the layout of a piano keyboard, which is a bit tough on those of us who play instruments that do not have a piano-style keyboard.

On a piano keyboard, the name of each white note is a letter of the alphabet (A-G), these names are used in a repeating cycle (A,B,C,D,E,F,G,A,B,C,D,E,F,G,...).

The white notes from one note C to the next note C happen to give the 2-2-1-2-2-2-1 pattern of intervals that makes a major scale:

\[ \text{C-2-D-2-E-1-F-2-G-2-A-2-B-1-C} \]

That is why the white notes on a piano give the scale known as *C major* (the major scale with the note C as *doh*). Every other major scale (every major scale for which *doh* is a note other than C) has at least one black note.

Where the interval between neighbouring white notes is 2 semitones, there is an intervening black note. Where the interval between neighbouring white notes is 1 semitone, there is no intervening black note. The black note between C and D has two names: C♯ (“C sharp”) and D♭ (“D flat”). C♯
means the note one semitone up from C; D♭ means the note one semitone down from D. Similarly the black note between A and B is called A♯ or B♭. Since the notes E and F are one semitone apart, E♯ is the same note as F, and F♭ is the same note as E.

All the way along a piano keyboard, the black notes occur in twos and threes: each “two” is C♯ and D♯ (= D♭ and E♭); each “three” is F♯, G♯ and A♯ (= G♭, A♭, B♭). These twos and threes of black notes are vital landmarks for the pianist. So although the black notes are named relative to the white notes, the white notes are usually located relative to the black notes.

We can figure out the notes of any major scale using the 2-2-1-2-2-2-1 pattern of semitone intervals. For example, for the scale of A major, the first note is naturally A (doh, the keynote, for this scale); 2 semitones up is B; 2 more semitones up is C♯; 1 semitone up is D; 2 semitones up is E; 2 semitones up is F♯; 2 semitones up is G♯; 1 semitone up is A (doh again). So the A-major scale is A-B-C♯-D-E-F♯-G♯-A.

A tune described as being in the key of A major would typically use notes entirely (or mainly) from the A-major scale; the final chord would typically be an A-major chord (see below), or a chord based on the A-major chord; the final note of the tune would typically be A, if not another note of the final chord.

The keynote is also called the tonic or sometimes, less formally, the home note.

There is a way of naming the interval between two notes in the same scale. Call the lower note of the interval the first. Moving up the scale from there, call the notes the second, the third, the fourth, and so on, until the upper note of the interval is reached. Whatever we call the upper note is also used as the name of the interval.

For example, consider the interval from D up to B in the scale of C major. Taking D as the first, E as the second, F as the third and so on, we find that the note B is the sixth. So the interval D-B is a sixth.

In a major scale (and in many other scales), an interval of an eighth (e.g. doh-doh or re-re or A-A or C-C or C♯-C♯) is an interval between two notes of the same name. Such an interval is better known as an octave (from the Latin word octavus = eighth). So an octave = 12 semitones.

When a crowd of people join in the singing of a tune, and the higher voices sing one octave higher than the lower voices (as they usually would), then that does not sound out of tune. This effect (that a note an octave higher is somehow the same note, except higher) is why it works to have more than one note called doh, say, or more than one note called C, say.
An interval of 7 semitones (e.g. doh-so or C-G) is called not just a fifth but also a perfect fifth. The interval B-F is an example of a fifth that is not a perfect fifth, since it is 6 semitones.

An interval of 5 semitones (e.g. doh-fa or so-do or C-F or G-C) is called not just a fourth but also a perfect fourth. The interval F-B is an example of a fourth that is not a perfect fourth, since it is 6 semitones.

An interval of 6 semitones (e.g. ti-fa or fa-ti or B-F or F-B) is called a diminished fifth (i.e. one semitone less than a perfect fifth) or an augmented fourth (i.e. one semitone more than a perfect fourth) or a tritone. The word tritone (= “three tones”) arises because obviously 6 semitones is 3 tones. When playing the C-major scale, F-G-A-B takes you up a tritone (F-B), and each of the three steps F-G, G-A and A-B is a tone.

The fifths in a major scale are all perfect fifths except for the tritone ti-fa. The fourths in a major scale are all perfect fourths except for the tritone fa-ti.

When an interval is called simply a fourth or a fifth it nearly always means a perfect fourth or a perfect fifth.

Now 5 + 4 = 8 is bad arithmetic, but a perfect fifth plus a perfect fourth makes an octave. [The underlying reason for this seemingly strange result is that when we are figuring out the size of an interval by counting notes up a scale, we call the lower note note one instead of note zero.]

More arithmetic! Notice that the note an octave higher than the first is the eighth, and that 8 is seven more than 1. In the same way, the note an octave higher than the second is the ninth, and the note an octave higher than the fourth is the eleventh. This add-7-to-go-up-an-octave (or subtract-7-to-go-down-an-octave) idea is worth remembering.

Thinking about major scales was a useful way to understand the terms octave, perfect fourth and perfect fifth, but an octave is always 12 semitones, a perfect fourth always 5 semitones and a perfect fifth always 7 semitones, even when the context has nothing to do with major scales.

The interval between a note and the next-but-one note in the major scale (e.g. doh-mi or re-fa) is naturally called a third.

It follows that those thirds come in two different sizes. A third of size 4 semitones (like doh-mi) is called a major third. A third of size 3 semitones (like re-fa) is called a minor third.

A tritone may also be thought of as two minor thirds. For example, B-D is a minor third, D-F is another minor third, and B-F is a tritone.

There are various types of minor scale, and these are not described in this article, but every minor scale includes the note that is a minor third above the keynote – without that note it would not be a minor scale.

The most common way of building up a chord is like this. Pick a note to start with (called the root note). Add another note a (major or minor) third higher. Add another note a (major or minor) third higher than the last note. Possibly add further note(s), each time going up a (major or minor) third. The individual notes of such a chord are referred to as the 1\textsuperscript{st} (= the root), 3\textsuperscript{rd}, 5\textsuperscript{th}, 7\textsuperscript{th}, ..., the idea being that the notes of the chord are alternate notes of some scale.

A triad is a three-note chord of this type. So there are four possible types of triad (depending on
whether the intervals between notes are major or minor thirds):

- Major third + minor third, for example doh-mi-so. This is the major triad, the basic major chord.
- Minor third + major third, for example re-fa-la. This is the minor triad, the basic minor chord.
- Minor third + minor third, for example ti-re-fa. This is the diminished triad.
- Major third + major third, for example C-E-G♯. This is the augmented triad.

So, of the triads that use only notes of the major scale (doh-re-mi-fa-so-la-ti-doh-re-mi-fa-so-la-ti-doh is the two-octave version of the scale), three are major triads (doh-mi-so, fa-la-doh, so-ti-re), three are minor triads (re-fa-la, mi-so-ti, la-doh-mi), one is a diminished triad (ti-re-fa), and there is no augmented triad.

All the chords covered by the common system of chord symbols are triads, or triads built-on and/or altered in some way. So there are musically useful chords for which there is no plausible chord symbol, even in everyday music – for example the third chord of the hymn tune Angel Voices has the notes (from the bass note up) D, C♯, G and B.

Information such as in this Some basics section is part of music theory.

In the rest of this article, third refers to an interval and 3rd refers to a note.

Chord symbols

In this article, chord symbols are in bold italics. So C is a chord symbol, whereas C (not in bold italics) is the note. Each chord symbol is the root note of the chord (the note on which the chord is built), possibly followed by something to specify the type of chord – as explained below.

Basic major and minor chords

 e.g. C or Cm or even C-

The simplest sort of chord symbol is for a major chord. The symbol is just the root note of the chord. So when there is nothing to specify the type of chord, it is a major chord.

For example the symbol C represents the major chord with root-note C (the C-major chord), that is doh-mi-so for the scale of C major, that is the notes C, E and G.

For example the F♯ represents the major chord with root-note F♯ (the F♯-major chord), that is, doh-mi-so for the scale of F♯ major, that is, the notes F♯, A♯ and C♯.
For a **minor chord**, the symbol is the root note followed by *min* or *m* in lower case, or (rarely) the root note followed by a minus sign.

For example the symbol *Cmin* or *Cm* represents the minor chord with root-note C. Up a **minor third** from C is E♭. Up a **major third** from E♭ is G. So the notes for *Cm* are C, E♭ and G. Notice that the notes for *C* and *Cm* are the same except for the E and E♭.

For example the symbol *F♯min* or *F♯m* represents the minor chord with root-note F♯. Up a **minor third** from F♯ is A. Up a **major third** from A is C♯. So the the notes for *F♯m* are F♯, A and C♯. Again the notes for *F♯* and *F♯m* are the same except for the A♯ and A.

Sometimes a minus sign is used to indicate a minor chord, e.g. *C-* as an alternative to *Cm*. A **minus sign** is sometimes used for other purposes.

**Power chords**

* e.g. *C5*

A “power” chord is a major chord without the third. Or, what comes to the same thing, it is a minor chord without the third. So if we take the chord *C* (notes C, E and G) and omit the third (E), we obtain the power chord (notes C and G) for which the symbol is *C5*. Or if we take the chord *Cm* (notes C, E♭ and G) and omit the third (E♭), we again obtain the power chord *C5* (notes C and G).

It is common to repeat the root note one octave up, giving the notes C, G and C for *C5*. The term **power chord** is not heard much outside of rock music, though such chords have uses outside of rock music.

**Sevenths**

* E.g. *C7* or *Cm7* or *Cmaj7* or *Cmin♯7* or even *C-7*

A seventh chord is formed by taking a triad such as a major or minor chord (whose notes we may refer to as the 1st, 3rd and 5th) and adding a further note, the 7th, a third up from the 5th.

There are two possibilities. The 7th can be either a **major third** up or a **minor third** up from the 5th.

Now if there is nothing to specify otherwise, the 7th is a **minor third** up from the 5th. Or, what comes to the same thing, the 7th is two semitones down from the note that is an octave above the root note.

For example, the symbol *C7* (“C seventh”) represents the chord formed from the chord *C* by adding a 7th. *C* has the notes C, E and G. So the 5th is G. A **minor third** up from G is B♭. Therefore *C7* has the notes C, E, G and B♭.

For example, the symbol *Cm7* or *Cmin7* (“C minor seventh”) represents the chord formed from the
chord $C_m$ by adding a 7th. $C_m$ has the notes C, and G. So the 5th is G. A minor third up from G is B♭. Therefore $C_m7$ has the notes C, E♭, G, and B♭. $C-7$ has been used as an alternative to $C_m7$, but be aware that the minus sign in chord symbols is used with a variety of meanings.

To specify that the 7th is a major third up from the 5th, the chord symbol includes maj7 or M7 (note the upper-case M) or #7. Also Δ or Δ7 is a further alternative to maj7, perhaps more common in hand-written chord sequences.

For example, the symbol Cmaj7 or CM7 or CΔ or CΔ7 ("C major seventh") represents the chord formed from the chord C by adding the 7th that is a major third up from the 5th. C has the notes C, E and G. So the 5th is G. A major third up from G is B. Therefore CM7 has the notes C, E, G and B.

For example, the symbol CmM7 ("C minor major seventh") represents the chord formed from the chord $C_m$ by adding the 7th that is a major third up from the 5th. $C_m$ has the notes C, E♭, and G. So the 5th is G. A major third up from G is B. Therefore $C_mM7$ has the notes C, E♭, G, and B. Other symbols for this chord are Cmin♯7 and Cm♯7.

So in these chord symbols, min or m governs the pitch of the 3rd, and maj or M governs the pitch of the 7th.

And the word seventh can refer to a note, to an interval or to a chord.

**Sixths**

E.g. $C6$ or Cmin6

A sixth chord is formed from a major or minor chord by adding the note (the '6th') that is a tone above the 5th.

For example, $C6$ is the chord formed from C, the C-major chord, by adding the note A that is a tone above its 5th-note G. So $C6$ has the notes C, E, G and A.

For example, Cmin6 or Cm6 ("C minor sixth") is the chord formed from $C_m$, the C-minor chord, by adding the note A that is a tone above its 5th-note G. So Cm6 has the notes C, E♭, G and A.

**Inversions**

Although we figure out the notes for a chord by working up from the root note, we would not always choose to play the notes stacked in that order.

For example, for the chord C, instead of the obvious C-E-G, it can be pleasing to move the E up an octave, making it C-G-E.

Each way of stacking the notes of a chord is called an inversion of the chord.

Altering the inversion of a chord can change its effect from reasonable to perfect (or vice versa).

Another example for the chord C. An inversion with E as the lowest note can be useful when the
next chord is $F$. An inversion’s lowest note is often its most important characteristic.

**Diminished sevenths**

E.g. $Cdim7$

A four-note chord for which every interval between consecutive notes is a minor third gets called a diminished seventh chord.

So for example the chord $C$ diminished seventh has the notes $C$, $E♭$, $G♭$ ($= F♯$) and $A$; this chord has the symbol $Cdim7$ or $Co7$. Notice that adding further notes going up a minor third up each time would just repeat the notes $C$, $E♭$, $G♭$, $A$, ... This happens because four minor thirds make an octave.

It follows that the chords $Cdim7$, $E♭m7$, $F♯dim7$ and $Adim7$ all share the same four notes. In practice, the only way these chords differ is that it is common to use an inversion that has the stated root note as the bass note.

Similarly the chords $C♯dim7$, $Edim7$, $Gdim7$ and $B♭dim7$ all share the same four notes.

Similarly the chords $Ddim7$, $Fdim7$, $A♭dim7$ and $Bdim7$ all share the same four notes.

So the twelve possible diminished seventh chords involve only three different sets of notes, which is illustrated below by using a different background colour for each set of notes.

![Chord Diagram](image)

Or on a piano:

Take any diminished seventh chord, and choose any three of its four notes. Then there is exactly one major scale that includes those three notes, but there is no major scale that includes all four.

The name diminished seventh is not ideal, but diminished means flattened or down by a semitone. Start with $C7$, diminish the 3rd and the 5th and the 7th, and you have $Cdim7$.

The note $A$ that is the diminished 7th for the chord $Cdim7$ is the note that is the 6th for the chord $C6$.

Occasionally the chord is met without the 7th. For instance $Cdim$ or $Co$ may represent the chord
with notes C, E♭ and G♭, the diminished triad, which can also be written as Cm♭5. In some music, though, Co or Cdim is equivalent to Cdim7 – let your ear be your guide.

It is very rare to meet a dim7 symbol that has anything added to it to indicate additions or alterations to the chord. It is, however, fairly common for a dim7 chord to accompany a melody note that is not in the dim7 chord. For example, Bdim7 contains the notes B, D, F and A♭, but it can sometimes be found accompanying a melody note that is C#, E, G or B♭. Notice here that the set of notes C#, E, G and B♭ is one tone up from the set of notes B, D, F and A♭. Or, referring to the colour-coding used above, sometimes a chord of pink notes accompanies a yellow note!

Sometimes a chord of blue notes accompanies a pink note.

Sometimes a chord of yellow notes accompanies a blue note.

There is no common symbol for a chord such as Bdim7 with a C# on top.

Sometimes a musician will try to give a dim7 chord more character by adding a yellow note to a pink chord (or a pink note to a blue chord, or a blue note to a yellow chord). The possibilities are numerous (which dim7 inversion to use, which note to add, and where to add it). The resulting chord has the same notes as the 7♭9 chord whose root is the added note.

The added note can be used as a passing note.

**Augmented fifths**

E.g. C+

A three-note chord for which both intervals between consecutive notes are major thirds is the augmented triad and it gets called an augmented fifth chord.

So for example the chord C augmented fifth has the notes C, E and G#: the symbol for this chord is C+. Notice that adding further notes going up a major third up each time would just repeat the notes C, E, G#, ... This happens because three major thirds make an octave.

It follows that the chords C+, E+ and G#+ all share the same three notes.

Similarly the chords C♯+, F+ and A+ all share the same three notes.

Similarly the chords D+, F♯+ and B♭+ all share the same three notes.

Similarly the chords E♭+, G+ and B+ all share the same three notes.

So the twelve possible augmented fifth chords involve only four different sets of notes, which is illustrated below by using a different background colour for each set of notes.

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C D E♭ F-F# G G♯ A♭ B C C♯ D E♭ E F F# G G♯ A B♭ B C
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Or on a piano:

Given an augmented fifth chord, there is no major scale that includes all three of its notes.

Augmented means sharpened or up by a semitone. If you take the chord C and raise its 5th by a semitone you get the chord C+.  

**Ninths**

E.g. C9 or Cmin9 or Cmaj9 or C6/9  
A ninth chord, unless specified otherwise, is a seventh chord with an extra note, the 9th.

Unless specified otherwise, the 9th is the note an octave plus a tone above the root note.

So, for example, the chord C9 (“C ninth”) is C7 with the note D on top.

Similarly, the chord Cm9 or Cmin9 (“C minor ninth”) is Cm7 with the note D on top.

Similarly, the chord CM9 or Cmaj9 (“C major ninth”) is CM7 with the note D on top.

Similarly, the chord C6/9 (“C sixth ninth”) is C6 with the note D on top.

Similarly, the chord Cm6/9 or Cmin6/9 (“C minor sixth ninth”) is Cm6 with the note D on top.

**Elevenths**

E.g. C11 or Cmin11
An eleventh chord is not very common, and is a ninth chord with an extra note, the 11th.

Unless specified otherwise, the 11th is a minor third above the 9th. Or, to put it in doh-re-mi terms, if we take the root note as doh, then the 11th is fa, but in a higher octave. Or, if we take the root note as so, then the 11th is doh, but in a higher octave.

So, for example, the chord C11 (“C eleventh”) is C9 with the note F on top.

Similarly, the chord Cm11 or Cmin11 (“C minor eleventh”) is Cm9 with the note F on top.
Thirteenth

E.g. C13

A thirteenth chord is a ninth chord (or maybe an eleventh chord) with an extra note, the 13th.

The 13th is a major third above the 11th. Or, to put it in doh-re-mi terms, if we take the root note as doh, then the 13th is la, but in a higher octave. Or, if we take the root note as so, then the 13th is mi, but in a higher octave.

So, for example, the chord C13 (“C thirteenth”) is C9 (or maybe C11) with an A on top.

Sevenths, ninths, elevenths & thirteenths related to a major scale

Here is a major scale, running from the so below low doh to the so above high doh.

so-la-ti-doh-re-mi-fa-so-la-ti-doh-re-mi-fa-so

Notice that alternate notes are in bold type.

The first three notes in bold give a major chord, with so as the root note.

Still with so as the root, the first four notes in bold give a seventh chord, the first five notes in bold give a ninth chord, the first six notes in bold give an eleventh chord, and the first seven notes in bold give a thirteenth chord (maybe omit doh).

Chords built on the so-ti-re triad are called dominant chords (for this key), and commonly lead into a tonic (“home”) chord built on the doh-mi-so triad.

Standard chords, but with little changes

E.g. C7 b5 or C7#5 or Cm7 b5 or C7 b9 or C7#9 or C7#9 b5 or ...

Sometimes a chord symbol represents a standard chord that has been altered by changing a note or two by a semitone.

For example, if we take the chord C7 and lower the 5th by a semitone, we get a chord with the notes C, E, G♭ (= F♯) and B♭, for which the symbol is C7 b5 or C7- (“C seventh flattened 5th”).

Similarly, we can raise the 5th by a semitone and get the chord with notes C, E, G# (= A♭) and B♭, for which the symbol is C7#5 or C7+ (“C seventh augmented 5th”).

Or if we take the chord Cm7 and lower the 5th by a semitone, we get a chord with the notes C, E♭, G♭ (= F♯) and B♭, for which the symbol is Cm7 b5 or Cmin7 b5 or Cm7- or Cmin7- (“C minor
seventh flattened 5th”). Sometimes this chord is called C half-diminished seventh, or C half-
diminished, and given the symbol CØ or CØ7. No-one said that it is logical. CØ sometimes stands
for the diminished triad C, E♭ and G♭.

Start with C7, diminish (flatten by a semitone) the 3rd and the 5th but not the 7th, and you have CØ.

If we take the chord C9 and lower the 9th by a semitone, we get a chord with the notes C, E, G, B♭
and D♭, for which the symbol is C7♭9 (“C flattened 9th”). Notice that C♭9 would be something
different - the ninth chord with root note C♭. C7-9 has been used as an alternative to C7♭9.

Similarly, if we take the chord C9 and raise the 9th by a semitone, we get a chord with the notes C,
E, G, B♭ and D♯ (= E♭), for which the symbol is C7♯9 (“C raised 9th”). Notice that C♯9 would be
something different - the ninth chord with root note C♯.

If we take the chord C11 and raise the 11th by a semitone, we get a chord with the notes C, E,
B♭, D and F♯, for which the symbol is C9♯11 (“C raised 11th”). Notice that C♯11 would be
something different - the eleventh chord with root note C♯. The tune Chelsea Bridge makes much
of raised eleventh chords.

There can be more than one note altered. For instance, C7♭9♭5 represents a chord with notes C, E,
G♭, B♭ and D♯.

Usually the alterations are written in descending order, that is, C7♭9♭5 rather than C7♭5♯9.

Suspensions (see below) are also standard chords with little changes.

Suspensions

E.g. Csus2 or Csus4 or C7sus4

A chord in which the 3rd is replaced by the 4th or the 2nd is generally called a suspended chord.

If we take a C-major chord and replace the 3rd (E) with the 2nd note of the C-major scale, we get a
chord with notes C, D and G, for which the symbol is Csus2.

Similarly, if we take a C-major chord and replace the 3rd (E) with the 4th note of the C-major scale,
we get a chord with notes C, F and G, for which the symbol is Csus4 or simply Csus.

Traditionally, Csus2 and/or Csus4 would be directly followed by a C or Cm chord, which would
resolve the suspension. So it was a way to introduce a little temporary dissonance by arriving at a
C or Cm chord in staggered fashion. The term suspended arose because the 4th (or 2nd) originally
would be a note that occurred in the preceding chord and was “just left hanging there” when the
rest of the preceding chord was replaced with some combination of C and G notes (the 1st or 5th of
C or Cm).

Suspensions occur in other chords. For instance, C7sus or C7sus4 represents a chord with notes C,
F, G and B♭.

If the suspension is immediately resolved, then the suspended chord may be thought of as a **passing chord**.

**Standard chords, but with little extras**

E.g. *Cm(add2)*

For instance, the symbol *Cadd2* represents a *C* chord with an extra note, the 2nd, which is D. So its notes are C, D, E and G. *Cadd9* also represents a *C* chord with an added D, but in that case the added D would commonly be the top note of the chord.

Similarly the chord *Cm(add2)* has the notes C, D, E♭ and G.

Similarly the chord *C6add9* or *C6/9* has the notes C, E, G, A and D.

Sometimes + is used instead of *add*. The advantage is that + is shorter. The disadvantage is that + also stands for augmented 5th. *C+2* would be the same as *Cadd2*. *C+9* ought to be the same as *Cadd9*, but *C9+* is *C9* with an augmented 5th (the chord with notes C, E, G♯, B♭ and D.)

**The minus sign**

In chord symbols, the minus sign is used with different (and somewhat conflicting) meanings, which may be a cause of confusion.

Some people who write chord symbols never use the minus sign.

Some people who write chord symbols use the minus sign only to indicate a flattened *fifth*, as in *C7-.* That makes good sense, since the plus sign is used only to indicate an augmented (i.e. sharpened or raised) *fifth*, as in *C7+*.

Other people who write chord symbols use the minus sign for flattening almost any note within a chord, for instance writing *C7-9* instead of *C7♭9*.

Now I have never seen the chord symbol *C-3* used, but it would represent *C* (= a C major chord) with its 3rd flattened. That is, *C-3* would represent a C minor chord (*Cm* or *Cmin*). This line of thought has led to *C-* (i.e. *C-3* without the 3) being used as an alternative to *Cm* or *Cmin*.

What then does *C-7* mean? Is it *C-* with a 7 (i.e. *Cm7*)? Or is it *C* with a -7 (i.e. *C* with a flattened 7th)? Well, *C* with a flattened 7th would just be *C6*. So in practice *C-7* is just an alternative to *Cm7* or *Cmin7*.

**Standard chords, but with omissions**

E.g. *Cm7omit5* or *Cm7no5*
For instance, the symbol $C_9$omit3 or $C_9$no3 represents a $C_9$ chord without the 3rd, which is E. So its notes are C, G, B♭ and D.

Similarly the chord $Cm7$omit5 or $Cm7$no5 has the notes C, E♭ and B♭.

**Specifying the bass note**

E.g. $C7/E$

Sometimes a chord symbol specifies the bass note (the lowest note of the chord) by appending a slash followed by the required bass note.

For example, $C7/E$ represents an inversion of $C7$ that has E as its lowest note.

Sometimes specifying a bass note introduces a new note to the chord.

For example, $Dm7/G$ represents a $Dm7$ chord (notes D, F, A and C) above a G bass note.

For example, $AM7/Eb$ as in John Coltrane's *Naima* represents an $AM7$ chord (notes A, C♯, E and G♯) above an E♭ bass note.

**Same again, please**

E.g / or £

Here is a two-bar chord sequence with four beats in each bar.

| Am7 / D9 / | Gm7 / Gm6 / |

Each chord symbol or slash indicates one beat, and a slash indicates that the previous chord symbol still applies.

Here is another two-bar chord sequence with four beats in each bar.

| C7sus4 / / / | £ |

The symbol £ in the second bar indicates that the chord symbol in the previous bar still applies.

**Different chords but the same notes**

E.g. $Am7$ and $C6$

It has been mentioned above that $Cdim7$ and $E♭dim7$ both have the same notes. Likewise $C+$ and
Here are some further examples of different chords that use the same notes.

The chord Am7 has the notes A, C, E and G.

We have already seen that C6 has the notes C, E, G and A.

So are Am7 and C6 different chords? Well, Am7 encourages the musician to play something A-minor-ish, whereas C6 encourages the musician to play something C-major-ish. So to that extent the chords are different.

And context matters here.

C6 is usually appropriate in a chord sequence like CM7 C6 CM7 C6 or like B♭6 B6 C6.

Am7 is usually appropriate in a chord sequence like Am7 Am6 Am7 Am6 or like Am7 D7 G.

The chords C9omit3 and Gm/C both have the notes C, G, B♭ and D. There is the slight difference that C is the specified bass note for Gm/C but just the probable or obvious bass note for C9omit3.

The chords Cm7♭5 and E♭m6 both have the notes C, E♭, G♭ and B♭.

The chord C7♭5 has the notes C, E, G♭ (= F♯) and B♭. The chord F♯7♭5 has the notes F♯, A♯ (= B♭), C and E. Curiously, these two chords share the same notes, but the keys associated with the chords are as far apart musically as can be. Despite that, it is not always clear whether the symbol for a chord with those four notes should be C7♭5 or F♯7♭5. For instance, suppose the next chord is Fmaj7. The chord sequence C7♭5 Fmaj7 can be thought of as a version of the familiar sequence C7 F, whereas the sequence F♯7♭5 Fmaj7 suggests a bass line that descends from F♯ to F (if the chord root notes are used as bass notes); each of these possibilities has merit. Using a chord based on F♯7 instead of one based on C7 is called a tritone substitution, since the root notes C and F♯ are a tritone apart.

If the chord Bdim7 accompanies the melody note G, then the chord plus the melody note give the notes of G7♭9. Now Bdim7 accompanying a G has a different quality to G7♭9, but in both cases the next chord could well be Cm7 or some other C-minor chord.

A person who writes chord symbols obviously has to analyse each chord and choose a chord symbol to suit the context. This is called parsing a chord. Even in published music, the best choice is not always made. For instance, you may see A♭m6/E♭ where Fm7♭5 would give a better insight into how the harmony progresses.

I have seen the chords for the first four bars of Cole Porter’s All Of You given as

E♭. Here are some further examples of different chords that use the same notes.

| A♭/E♭ / / / | E♭ / / / | Fm7♭5 / / / | B♭7♭9 / / / |

Now the chord Fm7♭5 has the merit of suiting progression into B♭7♭9. On the other hand, having A♭m6/E♭ in bar 3 would have the merit of echoing bar 1. You choose!
**Chords within chords**

Sometimes when one or more notes are omitted from a standard chord, what remains is also a standard chord.

Some examples are almost too obvious to mention. Omit the A from G9 and you have G7. Omit the F from G7 and you have G. Omit the B from Dm6 and you have Dm. And so on.

More interesting is when the root note is omitted. Here are some examples. Omit the C from Cmaj7 and you have Em. Omit the G from G9 and you have Bm7♭5. Somehow that makes Bm7♭5 seem less exotic. Omit the B from Bm7♭5 and you have Dm. Omit the A from Am7 and you have C.

Omit the G from G♭7♭9 and you have Bdim7. Omit the B♭ from B♭7♭9 and again you have Bdim7. Omit the D♭ from D♭7♭9 and again you have Bdim7. Omit the E from E7♭9 and again you have Bdim7. So that is four different 7♭9 chords each of which contains the notes of Bdim7.

Cole Porter wrote the music and lyrics of the song Ev’ry Time We Say Goodbye. It includes the line 'But how strange the change from major to minor' that invites the listener to take note of the song’s harmonies. He makes a joke by setting a minor chord (A♭m7) to the word major, and a major chord (D♭9) to the word minor. The joke goes largely unnoticed, though, perhaps because A♭m7 contains the major chord C♭ (= B), and D♭9 contains Fm7♭5 and A♭m.

**Which notes may be omitted?**

Of course, all of them, if the melody is to be unaccompanied.

Just melody and bass-line can be very effective, even when much simpler than J S Bach's Two-Part Inventions.

**Obviously, a chord accompanying a melody note might not have to include that melody note; indeed it can be better to omit it.**

More generally, the question Which notes may be omitted? is a good one to bear in mind when learning about harmony. The question is too hard to answer fully here (or at all). The answer depends on what each note in the chord contributes in the particular musical context and genre. As a brief introduction to some of the ideas, the following comments are offered, at the definite risk of being too dogmatic.

Consider a simple song in which G7 is followed by C.

For the C, imagine omitting one of C, E and G. Miss out the C, and you are left with E and G, which could suggest E minor. Miss out the E, and you are left with C and G, and there is nothing left to make the chord major or minor. Miss out the G, and you are left with C and E, which still suggest C major fairly strongly. So the notes C and E (the 1st and the 3rd) are more important than the G (the
5th) in establishing the C-major chord.

In the G7, the notes B and F (the 3rd and the 7th) are the two notes that most strongly lead into the C-major chord – perhaps because from B to C is only a semitone (up) and from F to E is only a semitone (down), and as just mentioned, the C and E are the two most important notes of C. (B and F are therefore sometimes called the guide tones of G7.) The root note G of G7 also leads into C, because G-C is so-doh (if the key is C); very many pieces of music have bass lines that finish so-doh. For the purpose of leading into C, we may perhaps rank the notes of G7 in the order B, F, G, D (most important first).

But where a chord leads is only one of its aspects, only one reason why a note can matter. What the chord itself sounds like is another. Now consider G7+ followed by Cmaj7.

Cmaj7 is C with the note B added as a decoration. So that B must be important, more important than the G.

The augmented fifth in G7+ is D#, a note not in the C-major scale. So the note D# commands attention. For G7+, the root note G may be the least important note.

Shell voicing uses pared-down chord inversions containing (at most) the root, 3rd and 7th of each chord. For some musical genres, it is a good place to start.

Summary

Most chord symbols can be readily interpreted by taking as our reference the pattern

so-la-ti-doh-re-mi-fa-so-la-ti-doh-re-mi-fa-so

mentioned above. The notes in bold (notes 1, 3, 5, 7, 9, 11 and 13) are

so-ti-re-fa-la-doh-mi

and taking the key of C major (keyboard white notes) as an example these notes are

G-B-D-F-A-C-E

which gives us our reference for chord symbols beginning G. In this way of thinking, all of these chords are built up by taking the first however-many notes of G-B-D-F-A-C-E and then in some cases making alterations. For the chord symbol that is an unadorned G, the chord uses notes only as far as the 5th (D); so the notes are G, B and D. For other chord symbols beginning G, the rest of the symbol will be (in the following order) one or more of these:

- m or min to indicate that the 3rd (B) is to be flattened (to B♭), or 5 to indicate that the 3rd (B) is to be omitted;
- maj (if followed by an odd number) or M or Δ to indicate that the 7th (F) is to be sharpened (to F#);
- 7 or #7 to indicate the inclusion of a 7th (F or F#) or 6 to indicate that the 6th (E) replaces the 7th;
• 9, 11 or 13 to indicate that the chord uses notes as far as the 9th (A), 11th (C) or 13th (E, in which case it is common to omit the 11th);

• other stuff to indicate that notes are to be flattened/sharpened/added/omitted.

There are exceptions. The diminished seventh chord symbol G\text{dim7} or Go7 is not in this pattern. Also the handy symbol G\text{Ø7} does not follow this pattern, but writing that same chord as Gm7♭5 does follow the pattern.

**Not a chord but just one note**

E.g. E\text{pedal}

The word **pedal** requires not a chord but just a single note. Such a symbol is very rare; one arrangement of Richard Carpenter's tune Walkin' has the symbol A\text{pedal} in a couple of places, indicating not a chord but just the note A.

Some works for pipe organ, including many by Johann Sebastian Bach, have passages with a prominent long sustained low note which is held while higher parts are being played. On a pipe organ, the pedalboard is for producing low notes. So any prominent long sustained low note (even if the music is not for pipe organ) is known as a pedal point or an organ point or a pedal note or a pedal.

**No chord at all**

The symbol N.C. ("no chord") requires that there should be no harmony.

**Chord symbol index**

As noted above, each chord symbol starts with the **root note**, and the type of chord is determined by what, if anything, follows the root note.

For each **main chord type**, here are links to the relevant sections above, based on what follows the root note: nothing; ○; Ø;  ♯; ♭; ♭9; ♯9; ♯11; /9; a slash then a note-name; add2; add4; add9; no3; no5; omit3; omit5; pedal; sus2; sus4.

A chord symbol also may have further parts to indicate alterations/omissions/additions to the main chord type. Here again are links to the relevant sections above: ↓; ↑; +2; b5; b9; ♯5; ♯9; ♯11; /9; a slash then a note-name; add2; add4; add9; no3; no5; omit3; omit5; pedal; sus2; sus4.

Here is the link to the section explaining the various uses of the minus sign.

Here is the link to the section in which the symbols / (on its own) and \ are discussed.

Click here for a table giving the notes for chords with root-note C.
Chord symbols in jazz

As with other genres of music, fashion in chord symbols in jazz varies with time and place, which is why there are alternative symbols for many chords. Of those alternatives, current practice in jazz commonly uses these symbols:

Δ to indicate a major seventh – e.g. C Δ9 has the notes C, E, G, B and D;

+ to indicate a raised fifth – e.g. C7+ has the notes C, E, G♯ and B♭;

Ø instead of m7♭5 – e.g. CØ has the notes C, E♭, G♭ and B♭;

♭5 to indicate a flattened fifth (when the symbol Ø does not apply) – e.g. C7♭5 has the notes C, E, G♭ and B♭;

○7 to indicate a diminished seventh – e.g. C○7 has the notes C, E♭ and G♭ and A.

Also not uncommonly:
- instead of m or min – e.g. A-7 has the notes A, C, E and G.

Etc

Here is a very brief look at some related topics, including other ways of referring to or denoting chords.

A figured-bass system is used in Baroque music. The notes of the bass line are written out in full, and, wherever a chord is required, number(s) are written under the bass note to indicate the further note(s) needed to construct the chord. For example,

\[ \begin{array}{c}
6 \\
4 
\end{array} \]

written under a bass note asks for the notes which are a 4\(^{\text{th}}\) and a 6\(^{\text{th}}\) above the given bass note in the scale being used. So if the scale is C major and the bass note is E then the further notes would be A and C, which is an A-minor chord with bass-note E, which is an instance of Am/E.

Now the doh-re-mi system of referring to notes is independent of the key, which can be extended in various ways to create systems that refer to chord sequences independently of the key. This table indicates alternative ways of referring to the notes of the major scale independently of the key.
The **Nashville** number system uses digits to represent the root notes of chords. For instance

\[
1 \ 1/3 \ 4 \ 4-\nonumber
\]

assuming four beats in the bar would be equivalent to

\[
\begin{align*}
\text{C} & / / / \mid \text{C/E} & / / / \mid \text{F} & / / / \mid \text{Fm} & / / / \\
\end{align*}
\]

when the key is C major, but it would be equivalent to

\[
\begin{align*}
\text{E} & / / / \mid \text{E/G#} & / / / \mid \text{A} & / / / \mid \text{Am} & / / / \\
\end{align*}
\]

when the key is E major.

**Numbers** are also used in discussing chord sequences. For instance, much has been said about the 2-5-1 or II-V-I sequence, which in the key of C major could be **Dm7-G9-Cmaj7**, say, or in the key of C minor could be **Dm7♭5-G7♭9-Cm6**, say.

There are further systems in which the symbols for minor chords have the root note in lower case, with upper case indicating a major chord. In one such system, **c** is the symbol for C minor and **C** is for C major. In another such system (if the key is C major), **ii7** is equivalent to **Dm7** and **II7** equivalent to **D7**.

A seventh chord like **G7** is sometimes called a **dominant seventh** chord, since the root note G is the dominant in the scale of C major, the only major scale to which the notes of **G7** all belong (and see also the **Summary** above). It is a little misleading, though, to call **G7** a dominant seventh (see the table above for the meaning of dominant) if the keynote is not C, for instance when using **G7** in a blues in the key of D.

A **passing chord** is a chord inserted between two other chords to create more movement or interest. Usually a passing chord lasts just a beat or two. For instance, if the two-bar chord sequence **D / / / | Em / / / |** seems too basic in a particular context, then it could work to insert the passing chord **B7/D♯**, giving **D / B7/D♯ / | Em / / / |** instead. This will not always be suitable, but it can work very well because **B7** leads into **Em** and also the root or bass notes (D, D♯, E) form a rising sequence.

A **passing note** is a note that does not belong to the current chord and that soon gets replaced with a note (generally a tone or semitone up or down) that does belong to that chord.
A symbol like C6 may sometimes refer not to a chord but to a single note: C6 is the note C in octave number 6. This system of naming notes distinguishes between notes of the same name by adding an octave number. The system is used when writing about how high or low an instrument can play or a singer can sing. On a grand piano, the lowest note is A0, the highest note is C8, and middle C is C4. Be warned that the note one semitone below C4 is B3 (and not B4 as you might have expected), because in this system each numbered octave runs from C up to B. The inventors of this system seem to have been thinking in C major (C = doh). So on a grand piano there are 88 notes as follows: octaves 1 to 7 are complete (at 12 notes per octave, that gives 84 notes), plus 3 notes down in octave 0 (A0, B♭0 and B0), plus one note up in octave 8 (C8).

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