

Building and Defining Chords

A pitch is a single note. An interval is two notes played together or successively (also described as the distance between two notes). A *chord* is the combination of three or more notes. These must be three distinct pitches; octaves are not counted as additional notes.

Triads

A *triad* is a three-note chord built in thirds. It is the most basic and common of all chords used in tonal music.

Built in thirds?

We can think of chords as being built by stacking notes from the lowest to highest, like a building being built one floor at a time. Each note in a triad is called either a root, third, or fifth. The *root* (also called the *fundamental*) is the note the chord is based off of, in this case the bottom note. The third is the note a 3rd above the root (either a major or minor 3rd). The fifth is the note a 5th above the root (either a perfect, diminished, or augmented 5th). These notes are named for their distance from the root of the chord (see Table 1).

The first interval of a triad is a 3rd (from the root to the 3rd). If you add another note a 3rd above that one, you now have a chord built in thirds, that is, a chord where each note is separated from the next by the interval of a 3rd. Using only major and minor 3rds, there are only four possible triads: major, minor, diminished, and augmented. These designations are known as the *chord quality*. Major and minor qualities are by far the most common. Diminished triads are used less often, and augmented triads are the least common.

The image displays four musical staves in bass clef, each showing a triad of notes. Brackets on the right of each staff indicate the intervals between the notes:

- C-Major Triad:** Notes C, E, G. Intervals: Minor 3rd (C-E), Major 3rd (E-G).
- C-Diminished Triad:** Notes C, Bb, Ab. Intervals: Minor 3rd (C-Bb), Minor 3rd (Bb-Ab).
- C-Minor Triad:** Notes C, Eb, G. Intervals: Major 3rd (C-Eb), Minor 3rd (Eb-G).
- C-Augmented Triad:** Notes C, Eb, G#. Intervals: Major 3rd (C-Eb), Major 3rd (Eb-G#).

Table 1 shows the intervals of each note from the root of the triad:

Triad	3 rd	5 th
Major	Major 3 rd	Perfect 5 th
Minor	Minor 3 rd	Perfect 5 th
Diminished	Minor 3 rd	Diminished 5 th
Augmented	Major 3 rd	Augmented 5 th

Table 1

Chords are named for the root of the chord and the chord quality. So a major chord with a root note of C is called a C-major chord. A minor chord with the root note G is called a G-minor chord.

You can assume it's major...

The distinction of "major" is often dropped off. A "C" chord is understood to be a C major chord, a "G" chord is understood to be a G major chord, and so on.

Diatonic Chords

The term *diatonic* refers to notes belonging to a particular key or scale. Every note in any given key is diatonic to that key. Notes that are not in that key are *non-diatonic*. For example, the note B is diatonic to C-major, but B \flat is non-diatonic because it is not one of the notes in that key.



All notes diatonic to the key of C major



Some notes that are non-diatonic to the key of C major

Chords can be diatonic to a key too. A diatonic chord is one that has all of its notes in the specified key. For example, a G-major chord (notes: G - B - D) is diatonic to the key of C-major, but a G-minor chord (notes: G - B \flat - D) is not because it contains a B \flat .



G-Major



G-Minor

Function

Tonal music is based on tension and resolution around a *tonal center*. The tonal center is the tonic, or first scale degree, of a key. Movement to the tonal center generally provides the most complete resolution.

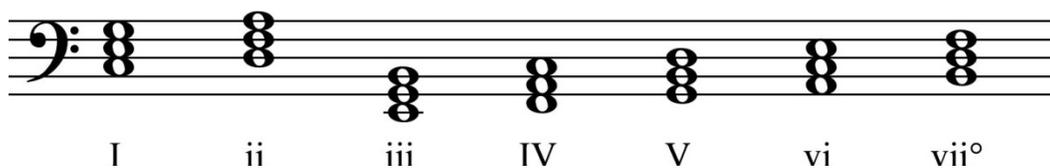
Tension and resolution are words we use to describe how the music "feels." While this is somewhat subjective, we must agree on some basic elements for theoretical purposes.

Function refers to the type of tension or resolution that a pitch or chord creates in a piece of music. We refer to this quality as *stability*. A chord that creates resolution or restfulness provides more stability, while a chord that creates tension provides less stability. More instability creates a stronger need for resolution. We will discuss chord function in two different ways.

Diatonic Function

Each scale degree (1 through 7) is the root of a diatonic triad. The chord built off of scale degree 1 is called the “one” chord, and so on up to “seven.” The *diatonic function* of a chord tells us what scale degree the chord is built on, and therefore what kind of stability it has in the key. Roman numerals are used to display the diatonic function of each chord as it relates to the key. This is called *Roman numeral analysis*.

Upper case Roman numerals are used for major chords and lower case for minor chords. A small circle (°) is used to denote a diminished chord and a plus sign (+) is used for augmented chords (though augmented chords do not appear in the diatonic repertoire for major keys).



Diatonic functions in the key of C-major

Harmonic Function

Each chord also has a *harmonic function* which is based on its relative stability. There are three basic harmonic functions: tonic, subdominant, and dominant. Their characteristics and the diatonic chords they are applied to are listed in Table 2.

Tonal Function	Chords	Stability	Characteristics
Tonic	I iii vi	Stable	<ul style="list-style-type: none"> Provides a feeling of resolution Contains scale degrees 1 and/or 3
Subdominant	ii IV	Unstable	<ul style="list-style-type: none"> Increases tension without strong need for resolution Contains scale degree 4
Dominant	V vii°	Highly unstable	<ul style="list-style-type: none"> Maximum tension Creates a strong need for resolution Contains scale degrees 2 and 7

Table 2

There may be some confusion regarding the difference between diatonic function and harmonic function. To add to this confusion, different sources will use different terminology that often contradict each other. For our purposes we use “harmonic function” to describe the general stability of a chord (tonic, subdominant, dominant) and “diatonic function” to denote the chord quality and the scale degree which it is built off of. Table 3 shows the relationship between these functions.

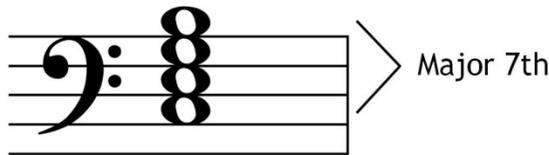
Scale Degree	1	2	3	4	5	6	7
Diatonic Function	I	ii	iii	IV	V	vi	vii°
Chord Quality	Major	Minor	Minor	Major	Major	Minor	Diminished
Harmonic Function	Tonic	Subdominant	Tonic	Subdominant	Dominant	Tonic	Dominant

Table 3

Seventh Chords

The most common expansion of the triad is the *seventh chord* (not to be confused with the “seven” chord built off of scale degree 7). A seventh chord is a four-note chord with the fourth note being a 7th away from the root (either major, minor, or diminished). Diminished sevenths will not be covered here.

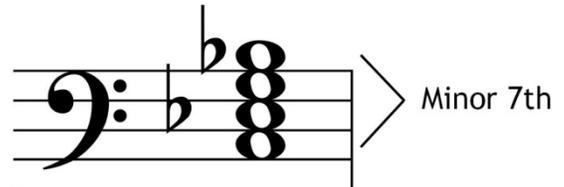
There is a seemingly endless variety of seventh chords. Here we will cover the seventh chords diatonic to the major scale. There are four diatonic seventh chords: major 7, dominant 7, minor 7, and minor 7 \flat 5 (also known as *half-diminished*).



Major 7th

Major 7th Chord

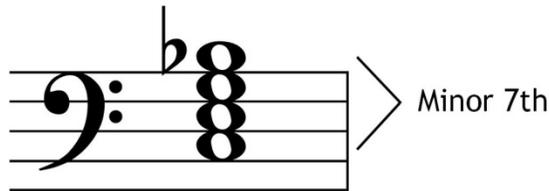
Major triad with a major 7th



Minor 7th

Minor 7th Chord

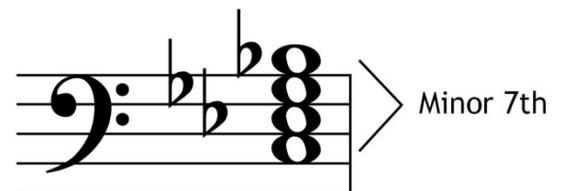
Minor triad with a minor 7th



Minor 7th

Dominant 7th Chord

Major triad with a minor 7th



Minor 7th

Minor 7 \flat 5 Chord

Diminished triad with a minor 7th

Table 4 shows the intervals of each note from the root of the seventh chord:

Seventh Chord	3 rd	5 th	7 th
Major 7	Major 3 rd	Perfect 5 th	Major 7 th
Dominant 7	Major 3 rd	Perfect 5 th	Minor 7 th
Minor 7	Minor 3 rd	Perfect 5 th	Minor 7 th
Minor 7 \flat 5	Minor 3 rd	Diminished 5 th	Minor 7 th

Table 4

The naming of these seventh chords is fairly self-explanatory except for the dominant 7. A *dominant chord* specifically refers to the presence of a major 3rd and a minor 7th. The perfect 5th is used in the purest form of the dominant 7 chord, but other variations of the 5th can exist in similarly named “dominant” chords.

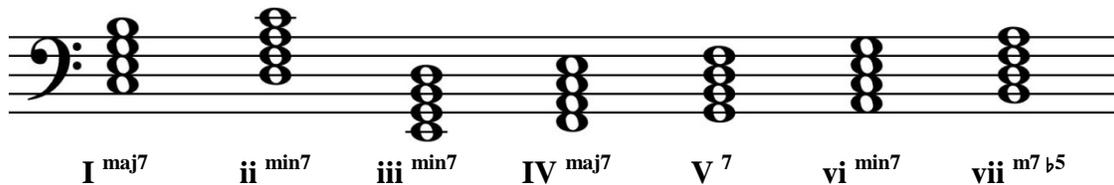
You can assume it's dominant...

The name “dominant” is usually dropped when referring to a specific dominant 7 chord. A “C7” chord is understood to be a C-dominant 7 chord, a “G7” chord is understood to be a G-dominant 7 chord, and so on. The term “7” can also be dropped when referring to the chord quality. A “dominant” chord quality is understood to be a dominant 7.

Harmonic Functions of Seventh Chords

The basic harmonic functions for the seventh chords are the same as their corresponding triads (tonic, subdominant, dominant).

The Roman numerals used reflect the basic triad. An additional symbol is added to distinguish the quality of the seventh in the chord. “Maj7” is used for major 7, “min7” is used for minor 7, “7” is used for dominant 7, and “m7 \flat 5” is used for minor 7 \flat 5. Notice that the vii symbol is used on the seven chord to denote a minor triad, but that the 5th of the triad is amended using the \flat 5 symbol.



Dominant or Dominant?

The language of music often uses one term for many different applications. Notice that the term “dominant” can describe a chord quality (as in a dominant 7 chord) or a harmonic function (as is a V or vii^o chord).



Terms

Chord: The combination of three or more notes.

Chord quality: The designation of major, minor, or any other chord qualities that define the intervallic relationship of each note in the chord to its root.

Diatonic: Notes or chords that belong to a particular key or scale.

Diatonic function: The function of a chord as it relates to the key in which it is played.

Dominant chord: A four-note chord with a major 3rd and minor 7th, most often implying the presence of a perfect 5th.

Function: The type of tension or resolution created by a pitch or chord with relation to its tonal environment.

Fundamental: Another term for the root of a chord.

Half-diminished: A less common term for the minor 7 \flat 5 chord.

Harmonic function: A classification of chords into categories of either tonic, subdominant, or dominant based on the chord's relative stability in the key.

Non-diatonic: Notes or chords that are not part of a particular key or scale.

Roman numeral analysis: A system of labeling chords using Roman numerals to denote chord quality and the scale degree on which the chord is built.

Root: The note which a chord is built off of. In a chord's most basic form, this is the bottom note.

Seventh chord: A four-note chord built in thirds.

Stability: The amount of resolution or restfulness created by a note or chord.

Tonal center: The tonic, or first scale degree, of a key. Movement to the tonal center generally provides the most complete resolution.

Tonal music: Music based on tension and resolution around a tonal center.

Triad: A three-note chord built in thirds.