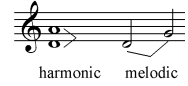


Intervals

Intervals

- An *interval* is the distance between two pitches
 - A *harmonic interval* is the distance between two pitches that sound together
 - A *melodic interval* is the distance between two pitches that occur one after the other



- To describe these intervals, we use interval names that consist of two main parts:
 - An **interval size**
 - An **interval quality**

Interval size

- The size of an interval is the number of letter names contained in the interval
 - For example, the size of the interval between C and F is 4, because we can count four letter names from bottom to top (C-D-E-F)
 - We would also call this a *fourth*



- The interval sizes are as follows:



Interval quality

- In addition to the generic size of an interval, we can also differentiate between different interval *qualities*
 - Example: the intervals C-D \flat and C-D are both seconds, but they sound different – they have different *qualities*



- An interval's quality is determined by the number of half steps in the interval
 - Example: C-D \flat contains 1 half step, so it is a *minor* second; C-D contains 2 half steps, so it is a *major* second

Interval quality

- There are five different types of interval qualities
 - Perfect** intervals (P)
 - Major** intervals (M)
 - Minor** intervals (m)
 - Augmented** intervals (A or +)
 - Diminished** intervals (d or °)

Perfect intervals

- The perfect intervals are:
 - Perfect unisons (P1)
 - Perfect octaves (P8)
 - Perfect fourths (P4)
 - Perfect fifths (P5)
- Unisons and octaves are perfect if the note names are the same (C-C), but not if they differ (C-C \sharp)
- Fourth and fifths are perfect if their accidentals are the same (C-F, C-G, C \sharp -F \sharp , C \flat -G \flat , etc.) but not if they are different (C-G \sharp , C \flat -G, etc.)
 - Exception: B and F (B-F \sharp and B \flat -F are perfect, B-F is not)



Augmented and diminished intervals

- An interval that is one half-step *larger* than perfect is **augmented**
 - You can augment a perfect interval by raising the top note or lowering the bottom note by a half-step



- An interval that is one half-step *smaller* than perfect is **diminished**
 - You can diminish a perfect interval by lowering the top note or raising the bottom note by a half-step

Major and minor intervals

- The other interval sizes (seconds, thirds, sixths, and sevenths) *cannot* be perfect
- Instead, seconds, thirds, sixths, and sevenths will be either **major** or **minor**
 - Minor intervals are a half-step smaller than major intervals
 - Major intervals are a half-step larger than minor intervals



Augmented and diminished intervals

- Like perfect intervals, major and minor intervals can be augmented or diminished
- An interval that is one half-step *larger* than a major interval is *augmented*
- An interval that is one half-step *smaller* than a minor interval is *diminished*

smallest ----- largest

Diminished – Perfect – Augmented
Diminished – Minor – Major – Augmented

Major and minor seconds and thirds

- It is easy to count half steps for seconds and thirds
 - A minor second is a half step
 - A major second is a whole step
 - A minor third is three half steps
 - A major third is four half steps
- It is important to learn how to recognize thirds quickly, since chords are built out of thirds
 - One trick: major thirds happen naturally over C, F, and G



Major and minor sixths and sevenths

- It is much more tedious to count the half steps in sixths and sevenths
- You can compare sixths to perfect fifths
 - A minor sixth is a half step larger than a perfect fifth
 - A major sixth is a whole step larger than a perfect fifth
- You can compare sevenths to perfect octaves
 - A major seventh is a half step smaller than a perfect octave
 - A minor seventh is a whole step smaller than a perfect octave



Interval inversions

- One quick way to determine the quality of larger intervals is to *invert* them
- You invert an interval by *flipping it around a fixed axis*
 - Method 1: Move the bottom note *above* the top note by shifting it *up* an octave
 - Method 2: Move the top note *below* the bottom note by shifting it *down* an octave



- In either case, the note names of the two pitches involved **DO NOT CHANGE**

Interval inversions

- When you invert an interval:
 - Unisons invert to octaves $1 + 8 = 9$
 - 2nds invert to 7ths $2 + 7 = 9$
 - 3rds invert to 6ths $3 + 6 = 9$
 - 4ths invert to 5ths $4 + 5 = 9$
 - NOTE: The two interval sizes always add up to 9!
- When inverting an interval, the interval qualities also change consistently:
 - Perfect intervals invert to perfect intervals
 - Major intervals invert to minor (and vice versa)
 - Augmented intervals invert to diminished (and vice versa)

Enharmonic intervals

- Intervals that have the same sound but are spelled differently are called *enharmonic intervals*
 - For example, the diminished fifth and the augmented fourth both contain 6 half steps (sounding identical)



This interval (A4/d5) is also known as the *tritone* (Tt)

- Intervals can have the same number of half steps but different spellings—these should be considered distinct intervals (with different names)



Compound intervals

- Intervals that are larger than an octave are called *compound intervals*



- Compound intervals are often labeled in terms of their *simple* equivalents (by removing an octave)



Compound intervals

- To spell or identify a compound interval:
 - Step 1: remove an octave from the compound interval to get the related simple interval
 - Step 2: the compound interval will have *the same quality* as the simple interval
 - Step 3: add 7 to the simple interval to get the size of the compound interval

