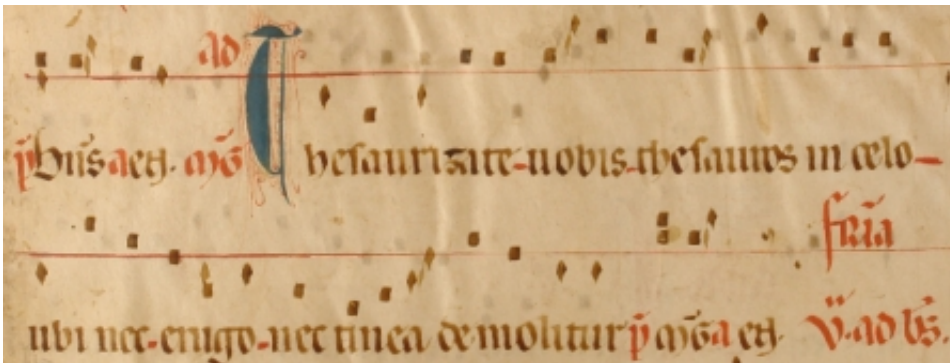


Segment 1: Musical Notes

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Segment 1

Firstly here is an example of some early music, written before the standardised stave/staff came into use:



I think you can see how this was problematic.

Naming the notes:

Here are the seven alphabetical note names in ascending order. Note the **ledger line** for the last A, to temporarily extend the stave/staff:



Here they are descending from A with more ledger lines:



The mnemonics for learning the position of the notes in the treble clef:

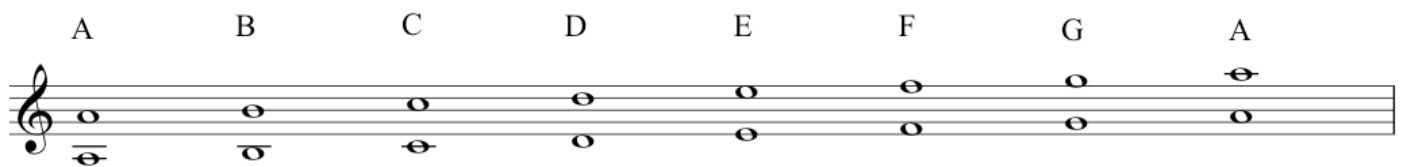


(For a gender neutral version try: Every Green Bus Drives Fast!)

Here are the notes on a piano keyboard:



Finally we introduced the **octave**. Here are the seven note names shown in adjacent octaves on the staff. Note that when the lower note is on the line, its octave above is on a space and visa-versa:



This lower C with one ledger line is called 'middle C'



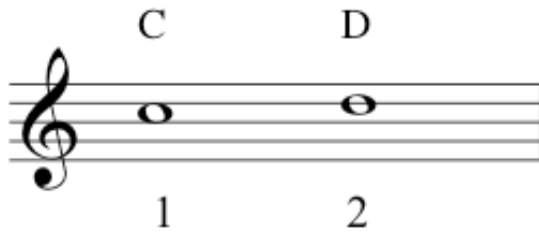
You can find it right in the middle of the keyboard (the note names are sometimes written on electronic keyboards, but on a real piano it's near the lock of the lid).

Segment 2: Octaves

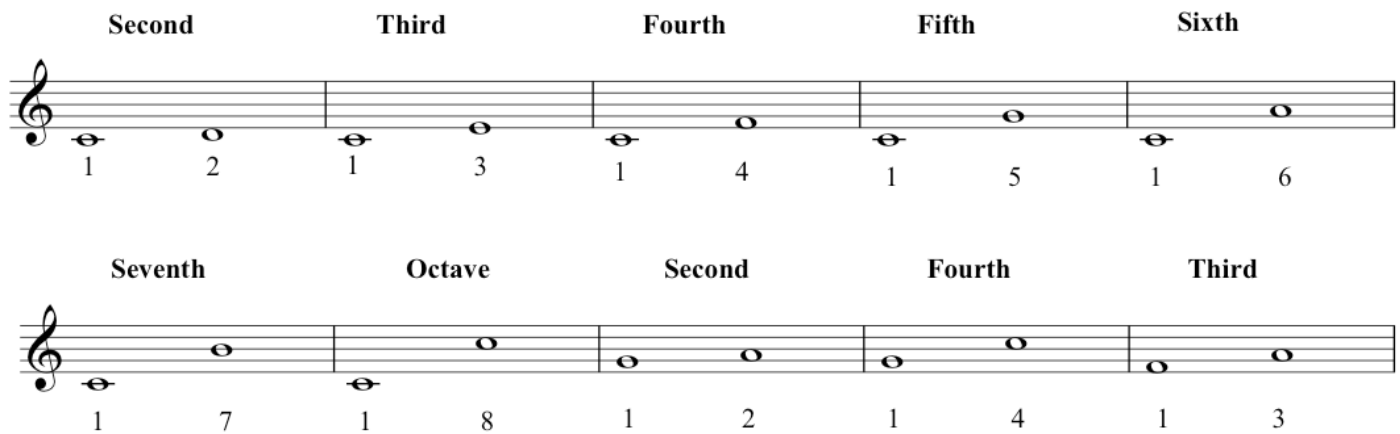
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Intervals

Here is the interval of a second as shown in the video:

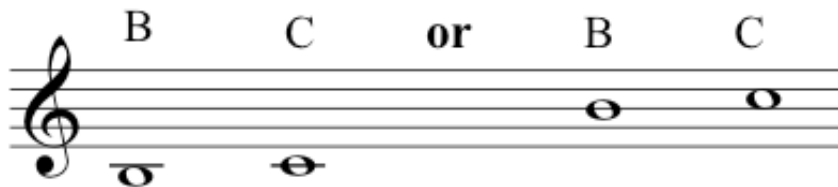


At approximately 3 minutes 20 seconds in the segment, Zack gives several examples of more intervals, and here they are in the order he played them:

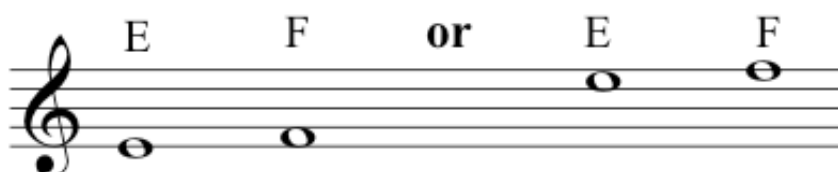


Tones and semitones:

Note that using only white notes we have identified two 'sets' of semitones. The first set is between B and C:



The other set is between E and F:

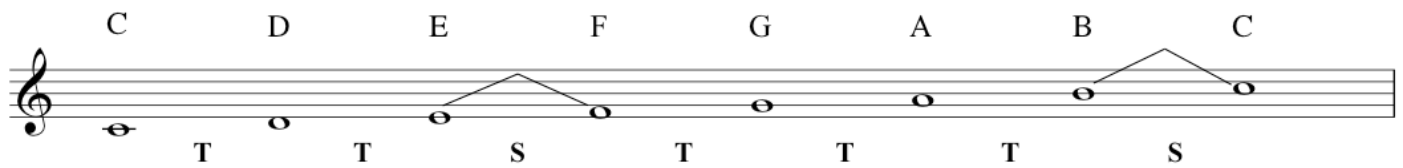


These intervals can most clearly be seen on a keyboard because there is no black key between them- if

you look back at the keyboard graphic you will see this.

The C major scale:

Knowing the difference between these tones (**T**) and semitones (**S**), allows us to derive the C major scale:

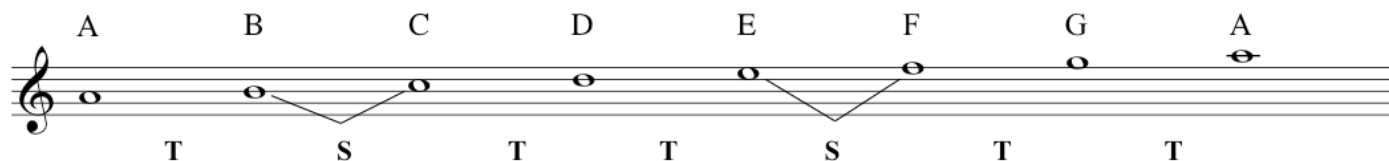


C is the **tonic** here, and this scale is an example of a **diatonic scale**- one that has a pattern of 2 semitones and 5 tones going from one octave to the next.

Segment 3: More on Scales

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The A natural minor scale/Aeolian mode:



When the pattern of tones and semitones is different, the scale *sounds* different - formally it has a different **quality**.

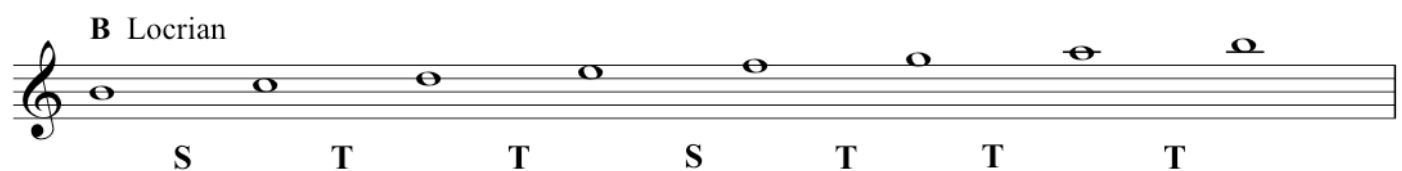
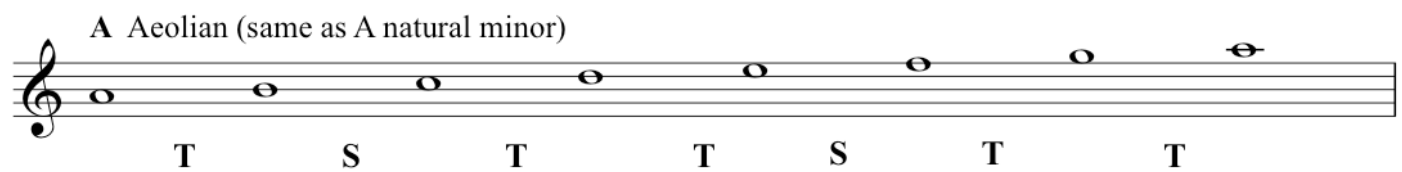
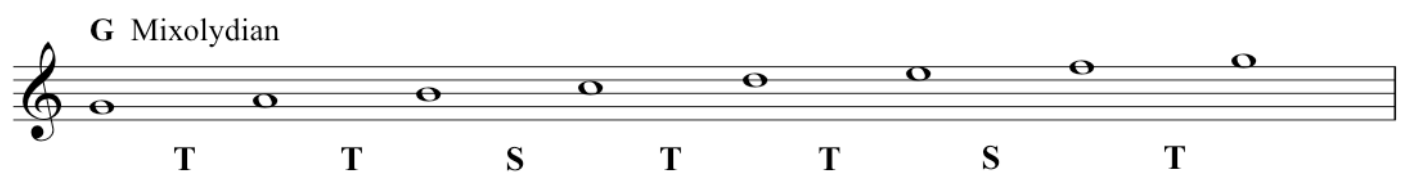
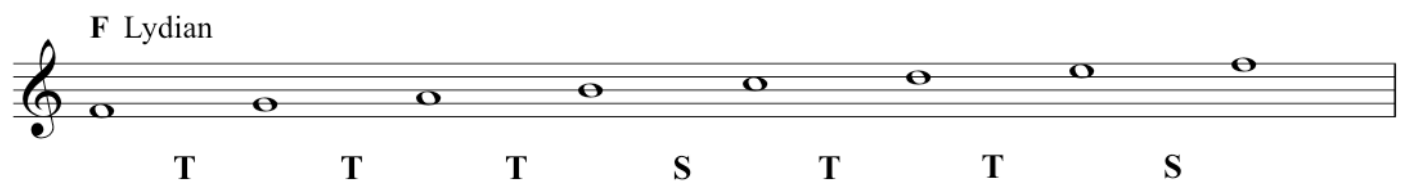
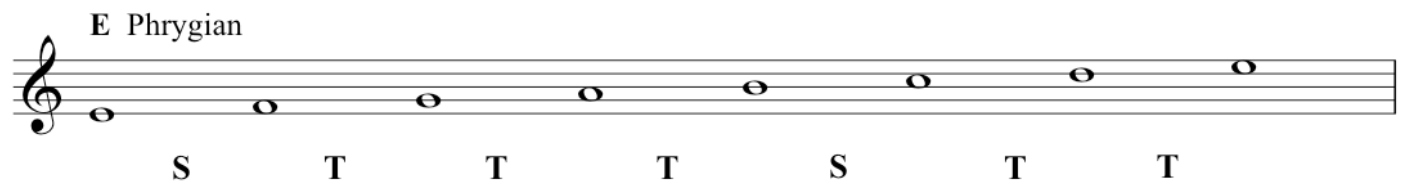
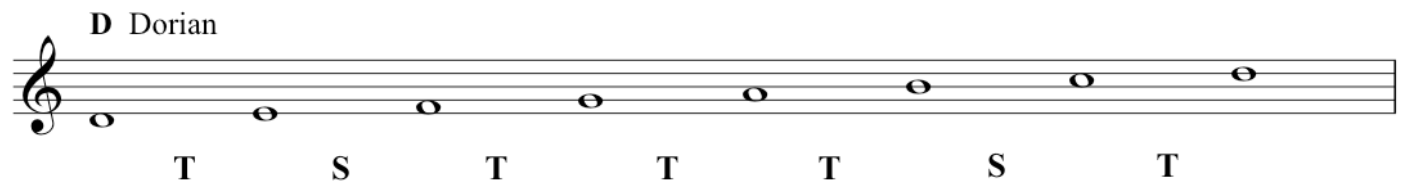
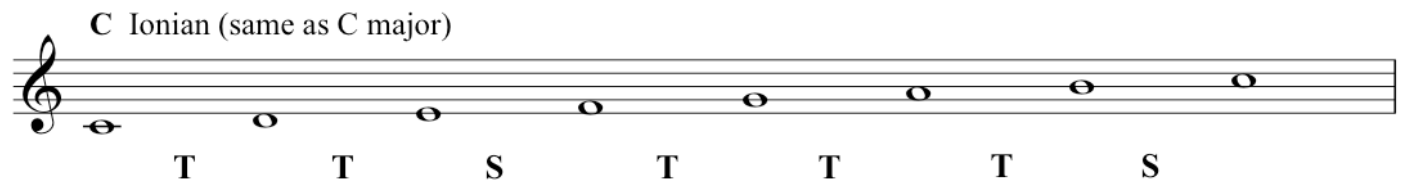
Here is an example of that different quality. This is *God Rest Ye Merry Gentlemen*, the Christmas Carol that I played on flute, (written by an unknown composer, but probably dating back to the Seventeenth Century).



If you are new to reading notation don't worry, you can still follow the notes of this tune - and notice how the melody keeps coming back to the A.

We also named the A natural minor the **Aeolian mode** - we will now move on to the **modes**. Different modes are simply found by starting our major scale on a different note- this then arithmetically rearranges the pattern of those 5 tones and 2 semitones- the following modes are all therefore also diatonic.

Here are the names as we refer to them today: **The Seven Diatonic Modes (showing the patterns of tones and semitones)**



A mnemonic for remembering the modes is:

I Don't **P**unch **L**ike **M**uhammad **A** - Li. To get a feel for the special *qualities* of each different mode, try playing them yourself at a keyboard. Notice the different sequence of tones and semitones.

Also try this exercise. If you know the song *Scarborough Fair*, find the note D; play two D's and then an A, (the beginning of the song); keep trying to play it 'by ear'; (yes I know this is a literacy-based course, but that doesn't mean you shouldn't use your ears - it's an important skill). If you manage to get through the

tune listen to how that D feels like 'home'. Try singing the scale while the song is in your memory. It might be quite hard, but playing around like this will help you to experience tonality, and it will help develop your general musicianship.

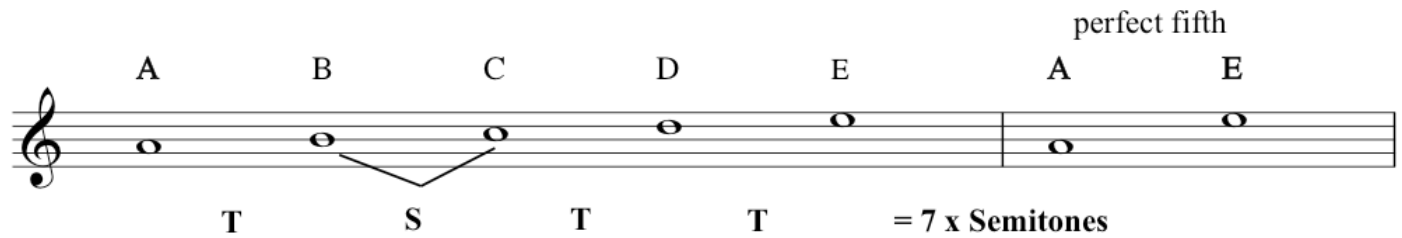
Another song in the Dorian mode is *What Shall We do With a Drunken Sailor*. To play this song with white notes you have to start on A and go down to a D "what shall we do with the drun **ken**" (that's the D on "ken").

Music doesn't always start on its tonic, but it often finishes on it, and this song finishes on D, which again should feel like home.

Of course you can do this with simple songs based on the major scale. You can begin *Twinkle Twinkle Little Star* on C in order to keep it on white notes. *Frere Jacques* (also called *Brother John* or *Are You Sleeping*), starts and finishes on C, but *Mary Had a Little Lamb* would start on E (the 3rd).

On the other hand, you could play along with our version of *She Moved Through the Fair*, and see if you can 'feel' the G as the tonic note. Just keep playing the note G and see how it 'fits' Anyway, try it - improvise on a keyboard or your own instrument!

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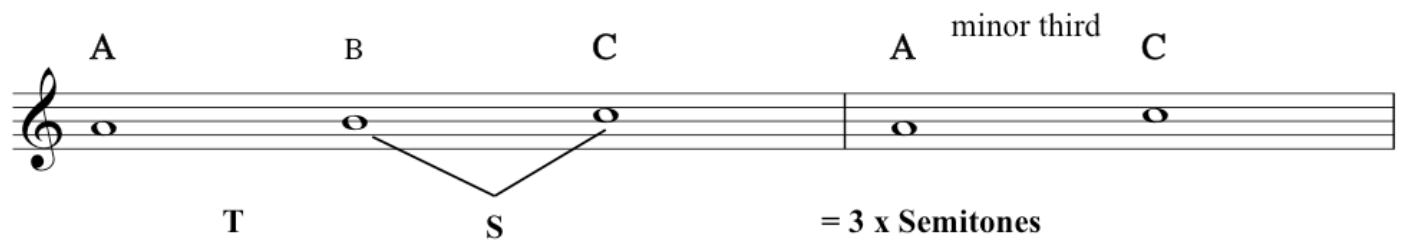


Now we need to find the interval between the 'bottom' and 'middle' note of the triad of C major:



...which gives us a **major third**

And for A minor:



Here we have the **minor third** - smaller by one semitone, i.e. the minor third spans only 3 semitones. It is this difference in the 'size' or the interval of the third that makes all the difference (perceptually) between these two chords.

Here we have all the triads as played by Zack starting at about 5 minutes in the video:

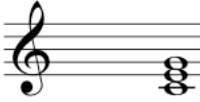
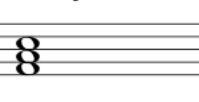
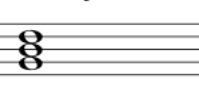


In the next segment we are going to begin looking at how these triads relate to the C major scale, starting with the **three primary chords**.

Segment 5: Primary Chords

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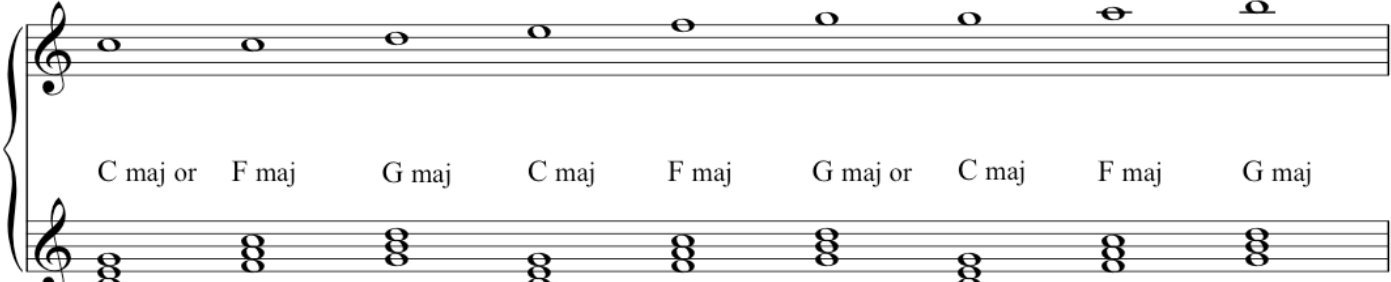
The three primary chords:

TONIC	SUBDOMINANT	DOMINANT
C maj	F maj	G maj
		
I	IV	V

So we have the C major **tonic triad**, built on the tonic of the scale. The **subdominant triad** is built on the fourth note, and the **dominant triad** on the fifth. The roman numerals written underneath refer to these scale degrees and are another important means of identifying the different triads in the scale. We will use this much more in the coming lectures.

(note these are the only major chords- D, E, and A are minor and of course the B is diminished)

At 3 minutes in the video, I harmonised each note of the major scale with one of these primary chords - the following shows this in notation, also with the names of each chord in lead sheet chord symbols:



A final word on all these chords. We are describing them as quite fixed entities- we identify different triads, we say which notes go best with which chord etc. Historically music was around for a long time before chords were identified in this way. In early church music, monks began singing different melodic parts at the same time (harmonising each other's voices). This developed into the technique known as **counterpoint** (the term means note against note). As counterpoint became more complex, three voices singing different notes might arrive together and form the kind of chords we have been identifying. Slowly people began to realise that these could be extracted and used more explicitly in the way we do now. Rameau in his *Treatise on harmony* (1722) is generally credited with first describing triadic chords, as we now know them, (but they would already have been in use). In the twentieth century, some classical music began to dispense with triadic harmony, but in jazz, rock, pop, and folk, chords continue to be the main way most musicians 'think' of harmony. (Visit certain pop/rock music forums online and you will see countless posts from people asking for the chords to play a whole variety of songs).

Postscript

Throughout this lecture there are places where I would love to say more. Places where we have had to simplify certain truths. The following information is for your interest, rather than your fundamental understanding of the fundamentals of music theory.

-

Octaves

In the first segment we identified the octave on the guitar by halving the string. This brings up a phenomenon formally known as the **harmonic series**. If you keep halving a string and playing it you don't JUST keep getting the next octave; it becomes more interesting than that- there is a mathematical relationship, which Pythagoras is often cited as the discoverer of (although others had probably figured it out before). If you are interested:

[http://en.wikipedia.org/wiki/Harmonic_series_\(music\)](http://en.wikipedia.org/wiki/Harmonic_series_(music))

Semitones

In the second segment we introduced semitones, but smaller intervals exist and are used in lots of music. They are formally called **Microtones**. A well-known example would be singers or guitarists 'bending' a note up or down in Blues, Rock and Jazz. Classical music from the mid twentieth century often used microtones, as does much music from other cultures around the world.

More on modes

There is much more to say about modes and other kinds of scales- for instance we haven't even touched on **pentatonic scales**, which are very common in all kinds of music. For a very detailed article on the modes and their history check wikipedia here:

[http://en.wikipedia.org/wiki/Mode_\(music\)](http://en.wikipedia.org/wiki/Mode_(music))

And for pentatonic scales here:

http://en.wikipedia.org/wiki/Pentatonic_scale