Jixis ™ *Graphical Music Systems*

Unfretted Fingerboard Version

Instruction Manual

The Jixis system is not a progressive music course. Only the most basic music concepts have been described here in order to better explain the method and use of the Jixis system for learning how to graphically correlate written music to fingering positions on your instrument. A professional teacher, or a self-instruction music course will be required to teach you how to properly play your instrument. Numerous online sites can also assist you in learning various bowing methods and other playing techniques for your instrument.

If you are already generally familiar with basic music concepts and your unfretted fingerboard instrument, and are simply seeking an easy way to interpret the relationship between the written notes of ordinary black and white music and their fingering positions on your fingerboard, you might want to refer instead to the *Quick Start Guide for Unfretted Fingerboards*.

The Basic Parts of an Unfretted Fingerboard Instrument

The terms *unfretted* or *fretless* simply mean that a fingerboard does not have any raised transverse cross wires, or *frets*, as would be found, for example, on a guitar or mandolin, that a string might lay over when *stopped* (depressed) against the fingerboard. If you are not familiar with the names and functions of your unfretted stringed instrument's basic parts, please have it available to view as you consider what you are reading here. The main parts of an unfretted fingerboard instrument are the *pegbox* (the tuning head at the top), the *neck* below the tuning head, the *fingerboard*, attached to the length of the neck, and the *belly* (the lower body of the instrument). The *strings* of the instrument run from the *tuning pegs* in the pegbox, across a raised cross-strip, called a *nut*, and on down and across the length of the fingerboard and pass over a lower, raised cross-strip called a *bridge*, after which the string ends are respectively attached to the body at the *tailpiece*. When the tuning pegs are turned to tighten the strings, the *pitch* (or *tone*) of the strings rises. Various consistent tunings may be applied to any stringed instrument.

On an unfretted fingerboard, if an *open* (untouched) string is bowed or plucked, it will sound out the tone to which it has been tuned. If the musician then uses finger pressure to *stop* (depress) the string at different points against the fingerboard, this act shortens the length of the string that can vibrate when activated, i.e., the string can only sound out the distance between that finger and
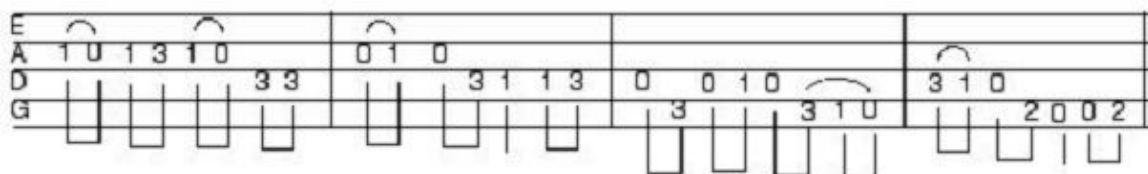
the bridge. This is what produces the different tone sounds along the string length.

Irrespective of the chosen tuning of the strings, the sequential tone progression for each of the strings occurs on a fingerboard *at the same unmarked crosswise lines* perpendicular to the strings. Rather than referring to the typical terminology of "positions," for easy reference in this manual, these invisible transverse lines will be referred to as *pitch lines*. There are on average over 20 pitch lines on most unfretted stringed instruments. If you do not have a professional player available to help you removably mark your pitch lines with tape or a pencil, you can locate your pitch lines by using a properly tuned keyboard to compare each tone along *one* string to obtain all of the pitch lines.

An Easier Way to Play Music by Graphical Correlation

Jixis is a relatively simple way to learn how to play your unfretted stringed instrument using a *graphical correlation method*. However, it is not the simplest graphical correlation method for use with stringed instruments. Another method currently in use is far simpler to use. But, unfortunately, it will not teach you much about the reading and playout of music written in the standard music system or the exact location of your pitch lines. Conversely, Jixis was designed to teach you how to read ordinary black and white music by using graphical correlation methods directly between the musical note positions and your fingerboard pitch lines. Nonetheless, if you fail to acclimate to (or like) the Jixis graphical correlation method of playing your stringed instrument being taught here, be assured that you can learn to play your stringed instrument using the graphical correlation method explained below.

The simplest graphical correlation method for musical notation for a stringed instrument is called *tablature*. Tablature music is written differently than standard written music. In order to use violin tabs, you need to first mark the fingerboard pitch line positions with tape or other removable markings and know their note letter names.

As shown in the diagram above, in tablature music, parallel horizontal lines represent the strings, and numerical markers placed on the lines indicate the numbers of the fingers to be used for the notes, i.e., 1 to 4, index to little. Tab music is read out from left to right. Other symbols may be inserted into the diagram before the finger numbers to indicate the playing technique in which the strings are to be bowed or otherwise activated. Other tab systems utilize the pitch line numbers for a more explicit direct indication of where to place your fingers.

Having said the above, we will now consider the use of training aids with an unfretted instrument, and then how Jixis is a graphical music system far different from tablature music.

The Unfretted Instrument

The use of training aids with unfretted instruments has been historically frowned upon, and for good reason. The teacher of the unfretted instrument first tunes the instrument in a preferred way, and then teaches the student the location of the pitch lines by touch and ear. Pitch lines, in this case, are the correct tones for the instrument's tuning relative to the written notes being played. The locations of the pitch lines must be experimentally tried for, accurately played, heard and remembered, to then be experimentally tried for again, accurately played, and so on, until a precise movement is made from rote memory and the pitch lines are easily located, played, and heard as accurate.

And yet, to teach the basic mechanics of finger movement along an unfretted fingerboard, a teacher often uses "notation marks" made with a pencil, dot labels, tape, or other removable marking means, to denote the pitch lines along the fingerboard length. The crude function of such notation markings is only to serve as a temporary "crutch" to visually assist the beginning student in the location of the pitch lines along the fingerboard length.

Although such crude pitch line location training devices are placed on the fingerboard only after the teacher has determined the pitch locations by ear and visual examination of the fingering location while playing that location, the typical location of the line markers are generally predetermined by the laws of physics. Once the open strings are properly tuned, and the string length between the nut and the bridge is known, one may divide this length by 1.059461 to obtain the first pitch line distance from the nut line. Each successive pitch line location along the length of the fingerboard is then obtained by dividing the length from each preceding pitch line to the bridge by 1.059461.

Thus, in principle, the length of any fingerboard could be progressively correlated to the string lengths from each successive pitch line location, and the fingerboard progressively marked with removable dots or transverse lines to indicate the mathematically accurate pitch line location of each semitone along the fingerboard length from the upper nut line to the lower end of the fingerboard. Such markings would then serve as a means to allow the student to visually examine the fingerboard for the location of the pitch lines.
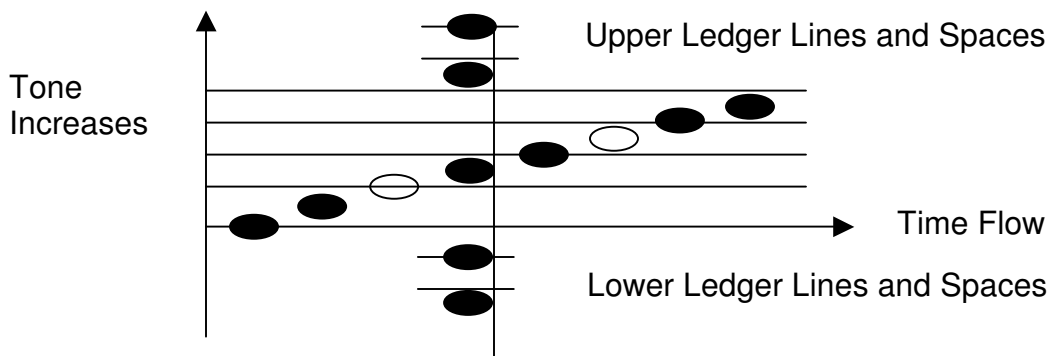
Obviously, with a line of sight playing technique such as is required for the violin, or a downward glance such as is required for a cello, this method leads to many interruptive movements as the instrument fingerboard is inclined or rotated to see the proper position to play. Nonetheless, when a student is first learning the pitch line locations, such a system is useful for visually determining where the lines actually are.

Thus, although it is true that no one learns to properly play an unfretted instrument without clear guidance from a concerned teacher, and although it is true that no one learns to play properly without consistent practice at locating the

pitch lines using proper fingering techniques, it is nonetheless also true that having visual guidance to locate the pitch lines is useful when you are first beginning to learn to play an unfretted instrument. And further, it is useful to have a visual reference system to know exactly what notes are present on all of the strings that pass over the respective pitch lines along the length of the fingerboard.

Thus, if you are just learning to play an unfretted instrument, and you are unfamiliar with reading written music, if you can have access to a simpler way to learn to *graphically correlate* the written music to the various pitch lines on your instrument, it could be an immensely helpful method for taking those first steps toward musical proficiency. As you will soon realize, this is what the Jixis system is all about, that is, learning how to *graphically correlate* the written music note positions to their respective pitch lines on your instrument.

Orientation

Conventional music is written in a vertical graphical format, that is, in a series of ascending horizontal lines and spaces, each of which designates a portion of an ascending range of musical tones. Oval graphical markers called *notes* are written on these lines and spaces to indicate the tones to be played out on a musical instrument.

Keyboards and fingerboards are not typically provided with markings that display the vertical musical graph primarily because such markings are considered to be an objectionable distraction to the proper teaching of music theory. *There are good reasons for these objections.* Normal teaching procedures for note location on a musical instrument are done in terms of the *letter names of the notes* so that the transposition of notes to a higher or lower tone position on the instrument may be easily done.

For example, an instrument may be tuned to a lower set of tones and the music written for the instrument may be written to a higher set of positions on the vertical staff format. Also, to simplify the reading of the music, various musical notations such as "8va," or "8vb," are often used indicate where the written notes are to be played out higher or lower in the tonal range of the instrument than the actual notation suggests, as is discussed in detail further below.

What this means for any graphically coded labeling system is that the system will only positionally correspond to the notes *as written* in the music. Thus, the transposition of notes to a higher or lower tone fingering position on the instrument cannot be done
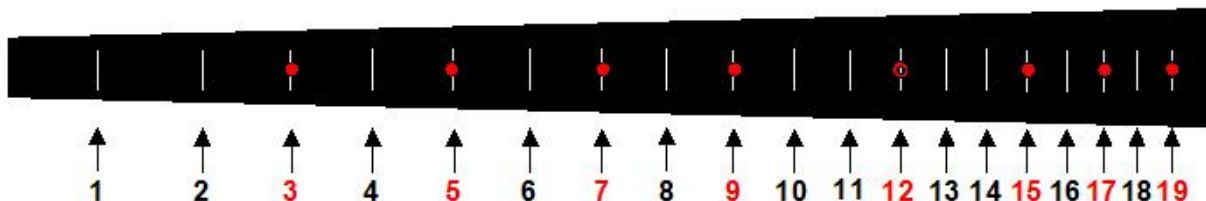
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until you learn the letter names of the notes. Despite these reasonable objections, when you are first learning to play your fingerboard, a graphical correlation system such as Jixis can be of great benefit in simultaneously teaching you both the fingering locations and the letter names of the written notes. Once you know the written note names and their various fingering locations, you will be able to *override* the label system and make note transitions to other equivalently named higher or lower note sequences.

Jixis coded label sets have been prepared for each specific instrument in terms of the way in which music is typically written (by conventional notation) for that instrument. Thus, you may find that your instrument is required to be tuned to different tones relative to the label codings for the notes. This should not present problems. However, if you find that the label set for your particular stringed instrument is inconsistent with the music you actually want to read and play, you may easily devise an appropriate label set with higher or lower tone codings for your instrument by following the directions in the PDF download titled, *Making Your Own Jixis Label Set Sheet.* You can also make your own *Note Letter Name Chart*, as is discussed below.

Jixis is thus only a *temporary* learning aid, and is not intended to be used with your instrument any longer than it takes for you to learn the basics of reading and playing out written music *by note letter names*. To hasten this process, it is helpful to develop the habit of *saying each note name aloud, or in your mind* as you use the graphical labels to play out the written note fingering locations on your fingerboard.

Jixis is also helpful in resolving the early difficulty of *directional orientation*. Since most musical instruments require the musician to make a mental transformation of the music from its vertical orientation to a crosswise playing orientation, this directional alteration can be a difficult adjustment for a beginning student of music. The Jixis system will teach you how to see your fingerboard as having a hidden graphical format that directly corresponds to the written music. And Jixis will then show you how to correlate these two corresponding graphical formats so that the individual note positions in the written music may be seen as being equivalent to specific fingering locations on the revealed graphical layout of your fingerboard.
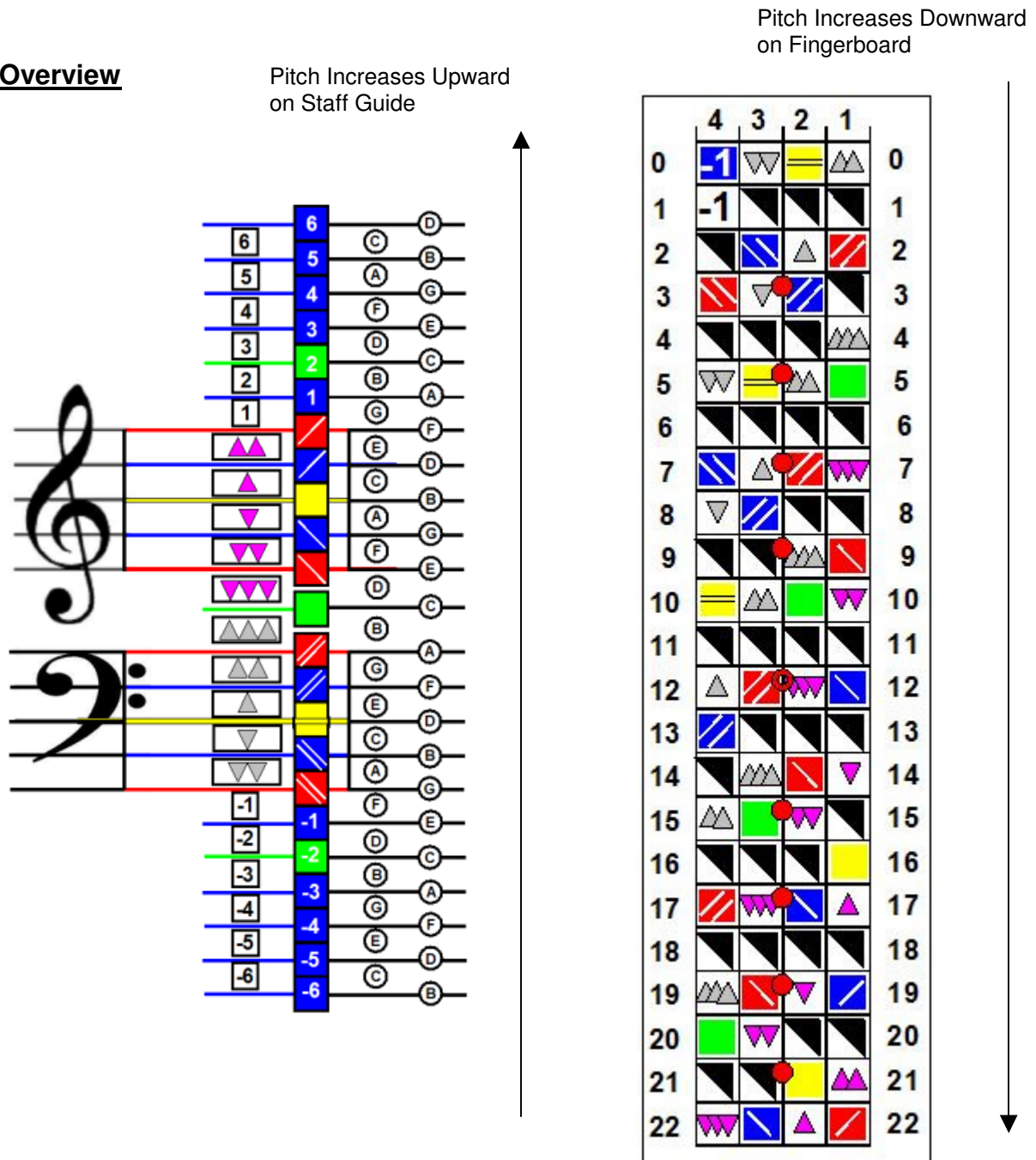
In this learning process, you will *not* be applying the Jixis labels to your fingerboard, and you will not have to use any music other than ordinary black and white music. But it is strongly recommended that you removably mark your fingerboard for its pitch lines using the "simulated fret marker" method shown below in order to simplify the counting out of pitch line numbers. Simple ways of doing this removable marking are explained further below.

Consider that when using Jixis system, you will almost immediately be experimenting with the playing of virtually any piece of music written for the tonal range of your instrument, and not just "easy play" colored or numbered music.

And you will be learning as you play! The more that you play, the more that you will learn about what it means to play *without* using the system—because your entire effort will be toward attempting to override the system and using your playing experience to guide you. At that point you may begin to play and learn musical techniques using more traditional methods, that is, by taking lessons from a professional teacher, or by using a progressive self-taught musical course.

Overview

Pitch Increases Downward on Fingerboard

Pitch Increases Upward on Staff Guide

On the first Label Set sheet for your instrument there is a *staff guide* on the left, and a *label set* on the right. The staff guide corresponds to the way in

which music is written in a vertical range of the natural tone line/space note positions. To each of the lines and spaces in the staff guide, small square boxes have been added, each bearing a unique color/symbol coding that designates that particular line or space position.

The layout of the label set corresponds to the layout of your fingerboard. The label set boxes are arranged in *vertical columns* with one numbered column for each string number on your instrument. Each of the small boxes in the label set columns displays a color/symbol coding that correlates to a line or space position (or a sharp/flat position) on the staff guide for that string.

Collectively, the vertical string column boxes of the label set display a number of horizontal boxes in *rows*. Each numbered label row represents one pitch line number on your fingerboard. The string columns in the label set are conventionally numbered from *right to left* as 1 to 4, 1 to 5, or 1 to 6, and the crosswise row pitch line locations are typically numbered from the top towards the bottom from 0 up to 22 to represent the number of possible pitch lines on your fingerboard. Each unique color/symbol coding indicates the strings and pitch lines where a specific note on the staff guide will be found on your fingerboard.

The label set format has been marked with circular red dots for the 3rd, 5th, 7th, 9th, 15th, 17th, 19th and 21st pitch line locations, and with a circular red ring for the 12th pitch line, because this is the point where the note letter names begin to repeat. The red pitch line markers simulate the inlaid markers of a fretted instrument, and are useful for quickly locating specific pitch lines in the label rows. *Again, it is strongly recommended that you mark your pitch lines in an equivalent way, using removable markers, e.g., tape or labels, with a unique marker for the 12th pitch line, e.g. two dots, or a square symbol, or some other special marker.*

Each coded pitch line is represented on the label set by the intersection of two numbers lines, the lengthwise string number line and the transverse (crosswise) pitch line location, or *row number*. Thus, to play out a written note on your fingerboard, you would use the staff guide to locate the color/symbol code for that specific note position, and then locate the coding on the label set to know where the note is located on your fingerboard, that is, on which string numbers and at which intersecting transverse pitch line numbers. For example, on a bass, the middle-C note position, color/symbol coded as a green square, is found on the 4th string at the 20th pitch line, and at different pitch lines on the remaining three strings.

The second sheet of the Label Set sheets is a *Note Letter Name Chart* that corresponds to your color/symbol label set. It will be discussed further below.

What you will first be learning here is how the two separate graphical formats of written music and your fingerboard relate to each other, and so how each written note position correlates to one or more fingering locations on your fingerboard. Again, once you clearly understand this graphical association method, all you will have to do to play out a written note is to locate its graphical symbol on the staff guide and then on the label set to know the number coordinates to play the note on your fingerboard.

Although you might at first suppose that this is an awkward process of learning how to read and play out music, you will quickly appreciate that it is actually a far simpler method than learning in the current fashion of rote memorization. The graphical symbols used in the Jixis system are not complex symbols. They are simply directional (up and down) positional symbols from a specific midpoint in the musical staff line system, being the middle-C note position, and so require little time to understand and utilize.

There is no immediate need for you to obtain any written music in order to learn how to use the Jixis system as a means of reading music. For the most part, early use of the system is limited to a self-contained consideration of the instruction material. When you feel confident that you understand how to use the Jixis system, written sheet music for your specific instrument may be easily obtained at various music stores, or from your local library, or from the many online sites that either offer music for sale or free public domain sheet music.
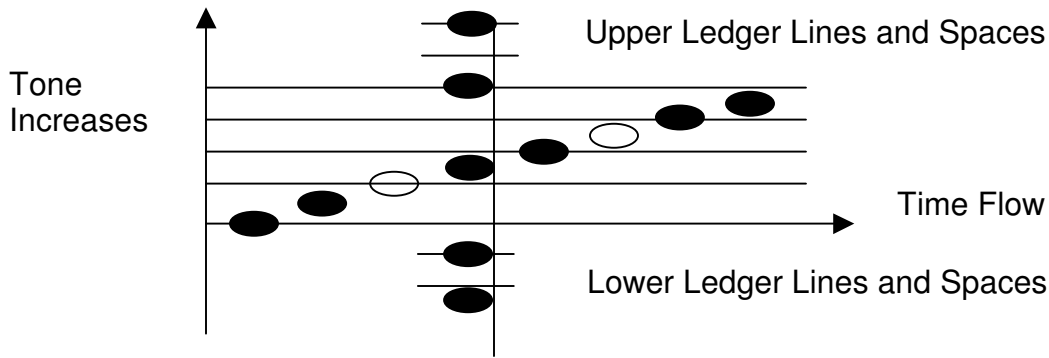
The Standard Music System

Numerous musical notation systems have been developed throughout human history dating back for thousands of years. The Standard Music System is currently the most commonly used method for the writing of musical notation for all musical instruments. As shown below, music in the Standard Music System is displayed by utilizing a *graphical diagram.* Straight, horizontal black lines are arranged in a parallel and evenly spaced manner wherein *pitch* (or *tonality*) increases from the bottom of the graph toward the top. Two separate five line graphs called *staffs* are generally used to record keyboard music.

The upper or *treble staff* is marked by a graphical symbol called a *treble clef.* The lower or *bass staff* is marked by a symbol known as the *bass clef*.
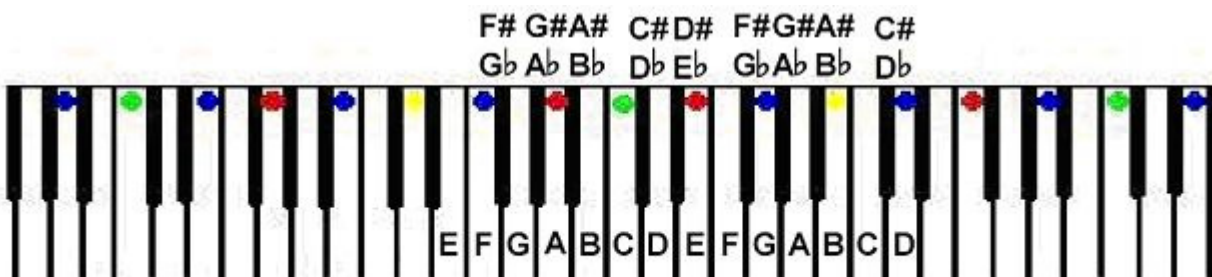
As shown in the diagram below, filled or empty oval markers, called note forms, or just *notes*, are placed on the respective line and space positions to indicate the tones to be played out on a musical instrument, and so represent the fingering positions for the repeating sets of *natural tones*, or A B C D E F G A… tones, on your instrument.

Tone Increases

Upper Ledger Lines and Spaces

Time Flow

Lower Ledger Lines and Spaces

The oval notes may be empty or filled and provided with other indicators such as *stems* and *flags* to indicate their duration, or *time value* in the music. All music in the Standard Music System is written within this vertical graphical format, that is, in a series of ascending horizontal lines and spaces, each of which designates a portion of an ascending range of musical tones. Short lines placed above or below a staff, called *ledger lines*, are used to indicate a higher or lower note tone to be played out. Notes that are placed in a line above or below one another are intended to be played out at the same time, and are called *chords*. Chords are not typically played out on an unfretted instrument. *Time flow*, the playing order and rate of play out of the written notes, moves along an imaginary vertical line in the musical graph from left to right.

Each written note is a part of an *octave*. As shown below for a piano keyboard, an octave is a repeating set of *twelve semitones*, being *eight natural tones*, for example A B C D E F G A, or C D E F G A B C, etc., and five additional semitones called *sharps* and *flats,* or *accidentals*. These five additional tones in a 12-tone scale, or octave, are the tones that are explicitly shown on a piano keyboard by the raised set of five black keys between two C note keys.

Written music, usually called a *musical score,* typically provides many cryptic symbols that need to be properly interpreted in order to play out the music correctly. Some of these symbols will be discussed further below. One of the most difficult things to initially learn is how to directly correlate the written notes (A B C D E F G) to their corresponding pitch lines (A B C D E F G) on your particular stringed instrument.

Knowing the exact position of a note and its name on the score does not directly tell you where the exact position to play out the notes will be on your fingerboard. In normal teaching practices, before you can play out any music, you must first learn where these written notes appear on your fingerboard's pitch lines. Sometimes, to speed up the early correlation process, an instructor will have the written notes' letter names displayed on the written music, and the pitch lines on your instrument will be equivalently labeled with the same note letter names.

And while this is of great assistance to a novice player to interpret and play out simple written music, this labeling method nonetheless lacks the exactitude of telling you precisely where a particular note name is to be played out on your fingerboard. Jixis resolves this problem by using an *improved color/symbol coding system* for directly correlating the graphical nature of the music to the graphical nature of your fingerboard. And yet, no colors are actually applied to the black and white music. *The color coding is simply imagined to be present in the written music.*

Colorizing the Music

Jixis is a *color/symbol coded* music system. And all written music in the standard music system is done in black and white, that is, in a horizontal, black line graphical format having white spaces between the lines. So the question immediately arises: *How do you use a colorized coding system with ordinary black and white music?*

The answer is: *by making the color coding and symbol enumeration system sufficiently simple so that it is obvious even though it is not present.*

Please review your Label Set sheet for a moment. In the Jixis system, the following colors are used:

Red line sets for top and bottom staff lines,
Yellow for the middle staff lines.
Blue line sets for the staff in-between lines, and
Green for the middle-C note and two octaves removed positions.

Except for the green C lines, the lines above and below the staffs, the ledger lines, are all blue. And all the spaces above and below the staffs, the ledger spaces, are all white.

The design of the symbol and number enumeration order in the staff guide for the fingerboard naturally fits into the order of the color lines of the staff as up and down indicators from the highest and lowest red staff line.

The symbols being used are: one to three up-directed or down-directed, rose-colored treble or silver-colored bass triangular space-position markers;
One or two left or right facing, slanted line-position markers; and,
Positive or negative numbered ledger line and space positions.

Since your fingerboard instrument is designed to primarily play out in the tonal range of either the upper treble or the lower bass note series, for the most part, you will actually only be utilizing either the upper or lower portion of the staff guide coding.

As you refer back and forth between the written music, the staff guide, and the labels, after a time the staff guide will not be needed. The color-coded symbols will *simply appear* for you as you view the black and white score.

And after your mind adapts to seeing a written note on the black and white score and *instinctively knowing* where its string and pitch line numbers are on your instrument, the Jixis system will begin to fade from view, and will be autonomously replaced by your inner knowledge of where to play out the note.

Understanding the Graphical Label Set

In a Jixis label set for a fingerboard instrument, the open positions of the strings are indicated by the first label row marked *Open* or 0. As the labels progress in higher enumeration as 1, 2, 3, …, each label number refers to a pitch line number on your fingerboard, where label 1 refers to the first pitch line location. If the labels were actually applied to an unfretted instrument, as shown in the generic mock example below, the Open or 0 label would be placed just below the nut, and labels 1, 2, 3,…would then be successively placed using the pitch lines as a *midline* for the application.
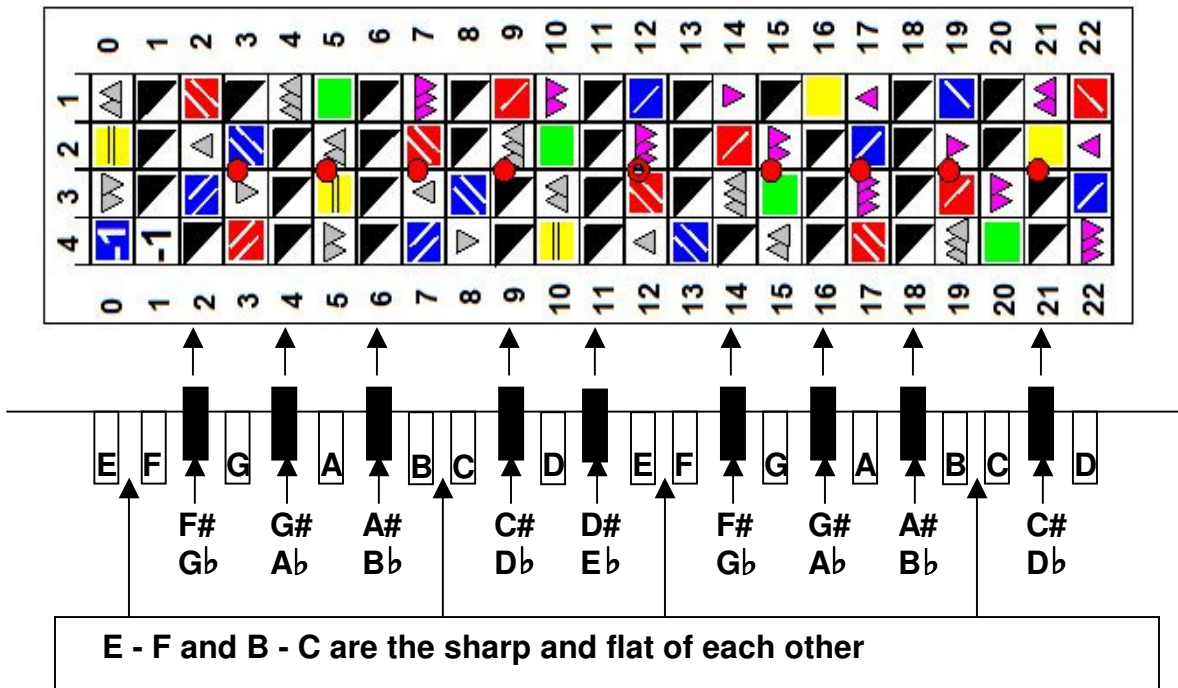

On an unfretted fingerboard, your fingers are depressed against the string onto the fingerboard exactly at the pitch lines. Each successive transverse pitch line produces *half-tones*, or *semitones*, that increase in pitch as you move your fingers down toward the bridge. This is the same rising pitch succession of semitones as would be found on a piano keyboard having white-lower and black-raised keys.

If you play each successive white and black key from left to right in the order that they appear, the pitch rises from left to right, and when you play out each note of a stringed instrument from the Open or 0 position toward the bridge, the pitch rises in semitone increments. And just as there are seven white key semitones, ABCDEFG (called *natural tones*) and five black key semitones (called *accidentals*) on a piano keyboard in repeating patterns of the white key notes, A through G, called *octaves*, there are a total of twelve repeating semitones within an octave along the length of each string on a fingerboard. The order of *any* set of twelve semitones along a string thus only depends on the initial pitch, or tone
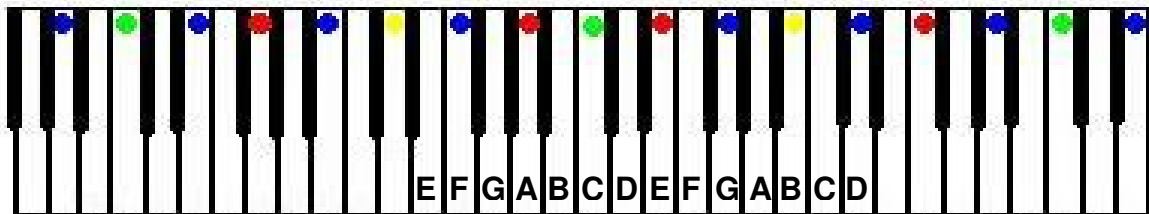
of the string (its note name) when it is played open (without being pressed against the fingerboard).

The general rule for accidentals in any 12-note scale is that moving one line down a string (toward the bridge) *sharps* the note, and moving one pitch line up the string (toward the nut) *flats* the note. Therefore, every note in the scale order is the *sharp* or *flat* of its adjacent note name. A sharped note is indicated by the sharp symbol, # , and a flatted note is indicated by the flat symbol, ♭ . This will be further explained in detail below.

If you consider the tonal order of the fingerboard when the neck is vertical, the tones rise as you move downward. But if you consider the tonal order of the fingerboard when the instrument is being held somewhat horizontally (with the body backside generally toward you), the tonal order, like a piano keyboard, runs higher from left to right as though the repeating pattern of the white and black keys of the keyboard were all in the same plane, as shown below for a bass.

E - F and B - C are the sharp and flat of each other

As shown directly above, the Jixis system is used for the keyboard by color highlighting the line-related white key positions to correlate to the music staff line positions in written black and white music. A similar effect can be displayed on a fingerboard by utilizing a *color/symbol coded* system to designate the music staff line/space positions on the pitch lines of a fingerboard.

Whereas a piano-type keyboard only has one line or space location (white or black key) for a particular written note in music, a fingerboard may have *multiple* pitch lines for the same written note position. These multiple pitch lines for the same note appear on different strings on the instrument, but at different pitch lines, and so additional symbol coding formats must be added into the fingerboard color-coding system to properly designate that particular note wherever it appears on a string.

After some practice with correlating the staff guide coding and the label set coding, you should be able to look at a written note position and immediately know where all of the note's possible fingering locations appear on your fingerboard. As you become more familiar with the repeating order of the note letter names on the staff guide, you should find yourself using a process of "reverse comparison" to name the written notes you are playing by graphical correspondence. It will help at that point if you actually say aloud, or in your mind the letter names of the notes you are playing in terms of the pitch lines you already know.
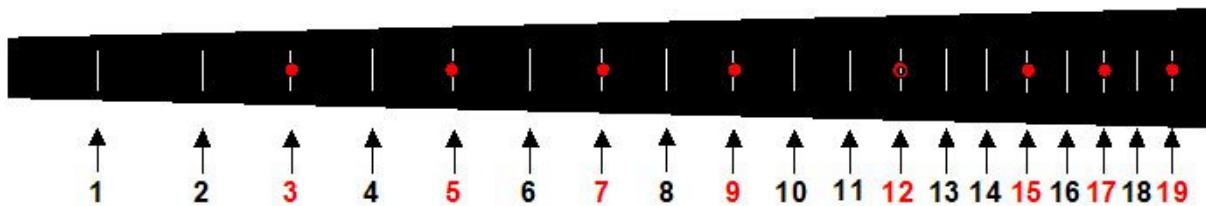
As your practice with reverse comparison continues, you will realize that you can view the written note positions in the music and know what their letter names are. Having this knowledge of note names which correspond to specific pitch lines on specific strings will eventually allow you to remove the labels and to play the unmarked fingerboard. And as you practice different musical pieces, it is helpful to attempt to move the tonal range of what you are playing to different octaves where the graphical codings do not match, but where the note name order is the same.

Using the Pitch Line Numbers in the Label Set

Every fingerboard has a specific number of pitch lines counted out starting from the top of the neck on down to the end of the fingerboard. The Jixis labels are numbered to correspond row by row with each of the strings and pitch lines on your fingerboard. But since the pitch lines are not numerically marked, it can become difficult for a beginning student to quickly establish exactly where the pitch line numbers are on the fingerboard. Most fretted fingerboards have inlaid or raised top and/or side *fret space markers* or *position markers*, typically at the 3rd, 5th, 7th, 9th, 12th, 15th, and 17th fret space positions. A unique marker, or two markers are typically utilized to denote the 12th fret space because the open tone note letter names repeat at the 12th fret position. These markers assist a fretted instrument player to locate the proper fret spaces to play out along a fingerboard in a way similar to the way in which the raised black key sets of a keyboard assist keyboard players to locate their position along the keyboard.

These markers are simulated on the unfretted fingerboard label sets using red dots, and a red ring for the 12th pitch line. Whereas it is obvious which string is which in terms of enumeration comparisons between the Jixis label set and your instrument, for beginning students of an unfretted instrument, the absence of such markers can make it difficult to make a quick assessment of a pitch line numerical position, which, of course, means that you will be slowed down by counting out each of the pitch lines as you compare them to the Jixis label row numbers.

This is why it has been suggested that you attempt to simulate the inlaid markers on your fingerboard by highlighting the 3rd, 5th, 7th, 9th, 12th, 15th, and 17th pitch positions, and using a unique marker to denote the 12th pitch line, as shown in the example below. It is also helpful to realize that the markers marking the 15th, 17th, 19th, and 21st pitch lines are one octave higher than the markers respectively marking the 3rd, 5th, 7th, and 9th pitch lines.

Locating Fingering Positions

The purpose of the staff guide is to allow you to determine what colored symbol matches the note you are viewing in your music so that you can easily locate it on your label set and then on your fingerboard.

To play out a written natural tone note in the Jixis system, you would first determine the note's position on a line or space of the written music. If you do not recall the color/symbol coding and or note name, A through G, of the position, you would then look at that position on the staff guide to determine its color/symbol coding and letter name and then locate the same color/symbol coding or codings on the label set. If there is more than one coding, determine which one you want to play out, usually the lesser numbered pitch line, or the pitch line location closest to a preceding note.

If you do not recall where this coding would fall on the fingerboard, then determine the string and label row number for the coding, and match the string and row numbers for the coding to the string and pitch line numbers on your fingerboard either by counting out the pitch lines, or by using the pitch line markers, and depress the string at that pitch line.

If the written note is currently sharped, or flatted in the music, first compare the note position in the music to the same note position on the staff guide to determine the note's unique color/symbol coding, and then locate this coding on the label set. If the note is sharped, the correct symbol on the label set will be the next black triangle (or color/symbol pitch line) down on the string. If the

note is flatted, the correct symbol on the label set will be the next black triangle (or color/symbol pitch line) up on the string. Use the label set's pitch line number and string number to locate the pitch line number and string number on your fingerboard. Before you depress the string at that pitch line, say the note name to yourself.

After you have used the staff guide for a while, the simple repetition of seeing the same color line sequences and colored symbol codings and note names will lead to an autonomous or *reflexive projection* of the required symbols for the note in your mind. And after frequent use of the Jixis color/symbols to locate pitch lines, the written notes and known location of the color/symbols on your fingerboard will allow you to play reflexively, and so override the system. This is the same automatic process that occurs when you learn how to type without continuously looking at the letters printed on the keys: After a while, your fingers simply move to type out the letters that are flowing through your mind.

Tuning Your Instrument

Tuning resources for your instrument are easily found online, or you may utilize an electronic tuner, or tuning fork method. Each string on a stringed instrument bears a tonal relationship with its adjacent strings. Each string's open tone is tuned to a set number of semitones away from its adjacent string's open tone (typically five, but also more or less). This fact allows a stringed instrument to be tuned by tuning the lowest string to a desired pitch, and then using the appropriate pitch line to tune the next string, and so on to tune the other strings.

Alternately, a fingerboard instrument may be tuned *to itself* (but not at a proper concert pitch) by tightening the end, thicker string until it is just past a loose vibrational motion when plucked, and then using this string to tune the next string to the highest tonal pitch line that bears the next string's note name, and using that string to tune the next in the same way, and so on, until all the strings are tuned. Thus a bass may be tuned by tuning the low E string and then activating the 5th pitch line (five semitones higher than the low E) to obtain a tone for the adjacent A string, and then using the 5th pitch line on the A string to tune the adjacent D string, and then using the 5th pitch line on the D string to tune the adjacent G string.

The A B C D E F G order of the notes never changes down a string length, with the *accidental* or *sharp/flat* notes appearing in the same order as the easy-to-remember raised black key set positions on a piano-type keyboard. Once you know the successive note name order on one string, you will know the order on all the strings beginning with the open tones. And since every octave starting with the open tones has 12 semitones, when you reach the 12th pitch line the note names will repeat in the same order that they started with at the open tone.

Thus, for example, just as the open strings of a bass are EADG, beginning at the 12th fret space, the same note names appear again as EADG. Since this note-name repetition is for all stringed instruments, it can be useful to imagine that there are a dual set of numbers starting at the 12th pitch line that would read out as 12/1, 13/2, 14/3, and so on to the end of the fingerboard pitch lines. This

dual-number order can be easily recalled by subtracting 12 from the actual pitch line numbers from 12 through 22, e.g., 12-12= 0 through 22-12=10.

Activating Your Strings

An unfretted fingerboard instrument is positioned for playing with the strings typically facing outward or upward. A right-handed person typically holds a *bow* to draw back and forth across the strings to make them vibrate, or uses his fingertips, to individually strike and activate the strings, while the left hand holds the neck of the instrument in the arch presented by the thumb and the first finger, with all of the fingers set in a *cupped position* over the strings. The cupped position, supported by the pressure of the thumb against the back of the neck, will then allow the fingertips to fall in a proper hammer-like position over the strings. Play is performed by depressing the strings at the various pitch lines against the top surface of the fingerboard, and then bowing or plucking the respective strings.

Cupping your fingers properly will allow you to depress the strings without undue pressure. It will also allow you to depress the strings more accurately and without the incidental deadening of strings meant to be played. Initially, sustained practice will generate blisters on your fingertips, whereas a more gradual approach will allow calluses (skin hardening or thickening) to form within a few days of playing time, which then considerably reduces the overall discomfort of playing. Correct posture that avoids hunching over will also lessen any discomfort.

When you first try to play your fingerboard collectively using written music, the staff guide and the label set, you may find that you are making jerking head motions trying to glance back and forth between the reference materials. But once you can eliminate looking at the staff guide, and simply impose the color/symbols on your written music, you will only be looking between the music and the label set to locate the proper pitch lines. And once you are familiar with the location of the notes on the label set, you will primarily only be looking at the written music and feeling your way around the fingerboard. At that point you will have completely overridden the Jixis system and will be playing your fingerboard from the written music without hesitation.

Using the Note Names to Change Octaves

You will find that in various compositions a sign called "8va" is used. This sign indicates that you are to switch the tonal range of the written notes up one octave. The sign "8vb" indicates that you are to switch the tonal range of the written notes down one octave. Similarly, the sign "15ma" indicates a two octave up transfer, and a "15mb" sign indicates a two octave down transfer.

Such note range shifts will bring you to a point where the graphical codings do not match. If you locate the written notes by graphical association and

then use the label set to find the same note names in the next octave up (or down) you will be able to easily transfer the note sequence indicated.

There are many issues that affect a proper playout of written music on your fingerboard such as key signatures, time signatures, forms of musical notation and music theory. We will be briefly considering only the most basic issues here.

Key Signatures

Musical compositions often have many sharps and flats. To simplify the writing and reading of music, the composer will often place *sharp or flat signs alone on the lines and spaces of the staffs at the beginning of the composition immediately to the right of the clef signs.* These sharps and flats number from one to seven and are called the composition's *key* or "*key signature.*" For example, here is a key signature with a flatted B note.

What the key signature is telling you to do is this:

• Determine what the name of the note is for the line or space where each of the sharp or flat signs appears near the clefs, and then

• According to the sign (♯ or ♭), *sharp or flat that "note name" every time you see a note with that name appear in the composition.*

Remember that *notes having the same letter name may appear at different locations in the tonal range of the composition, that is, in different octaves, and so on different lines or spaces than the ones used to indicate the key signature of the composition.*

For example, if a key signature is shown that has an F♯ then every F-named note in the composition *must then be sharped* wherever an F-named note position is written into the staffs and ledger line system.

The only time that a note name indicated in the key signature is not to be sharped or flatted in the piece is when its musical note is preceded by a *cancellation sign* known as a *natural sign* which is symbolized as ♮.

The natural sign will then only cancel the sharp or flat status of the note position that it precedes, and only for the remaining distance to the next *vertical bar line* in the music.

The distance, left to right, *between* the bar lines is called a *measure*. Often an extra sharp or flat sign is needed for use in a measure of music. *This added-in accidental sign only applies for the length of the measure.* The natural sign used for another note in that position within the same measure will then *cancel the sharp or flat for the remainder of that measure.*

In your first attempts at playing out music written in keys other than the key of C (which has no sharps or flats in its signature), you might wish to simply go through the composition and *"pencil in"* the required sharps and flats after locating these note names in the composition through graphical association.

Musical Timing

Musical timing is a complex subject in theory and in practice. Therefore only the most basic issues of the subject will be touched upon here. When you first start to use the Jixis system to play your fingerboard, you should not unduly concern yourself that what you are playing out on your instrument does not closely resemble the intended melody. Once you have successfully used the system as a means of locating the written notes on the playing area of your instrument, it will be far easier to gradually adjust to the idea of timing the length of play for the different notes than if you overly concern yourself with timing while you are first learning to make the necessary graphical associations.

The figure below shows several common note symbols and their respective *rest symbols*.

Each note and rest indicates commonly used *time values*, *"counts,"* or *"beats."* *A rest symbol counts out a period of silence in the music.* The open oval note without a stem is called a *whole note* and typically has four counts; its rest symbol thus indicates four counts. The next open oval note with a stem is a *half*

note and typically receives two counts; its rest symbol thus indicates two counts. The next darkened note with a stem is called a *quarter note* and typically receives one count; its rest symbol thus indicates one count. The next sequence of notes with flags on their stems are *eighth* and *sixteenth* notes, and typically receive progressively smaller fractions of time during which the note is held; their rest symbols thus indicate typically lesser fractions of silence.

The timing of the music then depends upon several factors
• The given *tempo* or playing speed suggested for the composition,
• The *time signature* or fractional number at the beginning of the music, and any added-in graphical symbols or notation which affect the length of time the various notes are to he played.
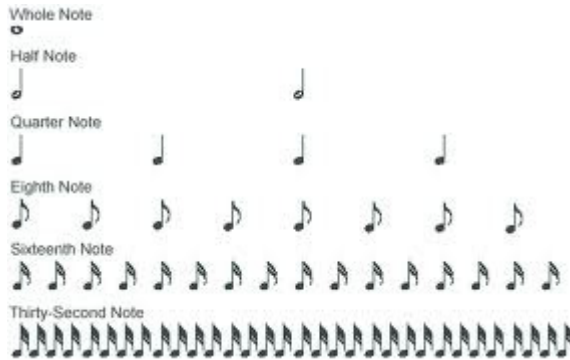
The tempo of the music will usually be given in English or Italian at the beginning of the piece, for example, Fast or *Allegro*, Moderate or *Moderado*, or, Slow or *Adagio*. The *time signature* of the piece appears *to the right of the key signature.*

A time signature of 4/4 is also called "*common time*" and is sometimes replaced by a large C, or simply understood to be the timing of the piece when no time signature appears.

In a time signature of 4/4, the top number indicates that there are to be four counts or *beats* to each measure, and the bottom number indicates that a *quarter note* is to receive *one count*. In common time a *whole note* receives four counts, a *half-note* two counts, a *quarter-note* one count, an *eighth-note* one-half count, and a *sixteenth-note* one-fourth count.

Each of the notes in the diagram below has different flag symbol to indicate a different length of time that the musical note is to be played. A whole not typically has four counts and a quarter note has one count. Each of the notes serves the same purpose in relation to the staff lines and spaces: *To act as a tone position marker, higher in the ascending line/space order when the note tone is higher and lower when the note tone is lower*.

Whole Note

Half Note

Quarter Note

Eighth Note

Sixteenth Note

Thirty-Second Note

      The simplest way to maintain the count or beat of the composition is to *tap your foot while counting* the lengths of play required for the various notes, using the up and down movement to follow along with a mental counting of "One and Two and "Three and Four" and repeating this as you proceed through the music. It is better to keep the tempo slow on whatever you are playing until your foot tapping and counting is a natural procedure.

      The length of time that a note is held may also be affected by the placement of a *"dot"* behind the note, or by a *"tie line"* placed between two notes with identical positions. A dotted note or a dotted rest will then have their normal time values *plus one-half* of that time value, that is, in combination as a total length of time for the note to be held. Ties between identical notes *combine two time values* into one length of time for the note position to be held.

      More detailed explanations of musical notation and theory should be obtained through a professional teacher or via self-education as you progress into a further study of music.

Applying Labels to an Unfretted Fingerboard

      You may have noticed on the Jixis web site that there is PDF download for applying the Jixis labels to fretted fingerboard instrument. But there is no equivalent download for unfretted instruments.

      The reason for this is because of the differences in both the structural nature of the respective sets of stringed instruments, and as well in the differing nature of their physical playout. Fretted instruments typically have flat fingerboards, and unfretted instruments typically have curved fingerboards. Fretted instruments have their respective strings depressed over the raised fret wires, whereas unfretted instruments must be played directly on their pitch lines.

      Some of the problematic issues with applying low tack *removable* labels on unfretted instruments are then that labels placed on the pitch lines tend to be quickly worn by string friction against them, and also tend to slide out of place, pop up at the ends, or fall completely away from the curved surface of the fingerboard. Moreover, the slight raise in height at the point of application also tends to detune the pitch at that point. Wraparound removable clear tape will hold the labels in place, but is esthetically and acoustically displeasing.

One partial solution is to offset the labels so that they sit above the actual pitch lines on the fingerboard, but this only works well for the lower register tones. As the spaces between pitch lines diminishes, the label rows tend to run over the adjacent pitch lines. Also, having the labels on the fingerboard can affect the string play against the fingerboard.

Other playout problems also occur with the labels applied. For example, because of the straight ahead view of the fingerboard on a violin, the label symbols are near impossible to decipher, and on a cello, the label symbols are reversed from the required downward view of the fingerboard.
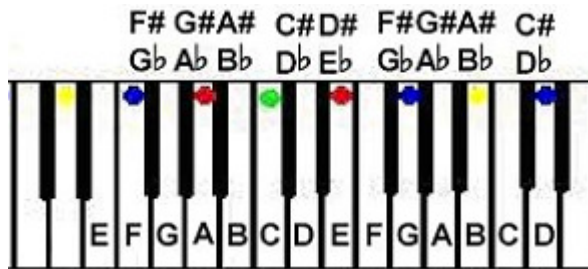
The decision not to include the numbering of the pitch lines on an unfretted instrument, and yet retain the numbering of fret spaces on a fretted instrument, was based on the same playout problem issues. Whereas, it is not that difficult on most unfretted instruments to visually interpret the "simulated fret" pitch line marker system, it is difficult to interpret numbers. Conversely, the physical playing position of most fretted instruments allows applied fret space numbers to be easily seen.

Having said the above, should you still want to apply removable labels across your pitch lines, you can try using the same application methods provided in the download for fretted instruments.

The additional downloadable tools indicated just below are for use with the Jixis system, should you choose to utilize them.

The Note Letter Name Strip

       Once you learn the note letter name sequence within its set cycle of sharps/flats, you can follow that sequence through any string by starting with its open tone note letter name or any other known tone letter name. It is helpful to learn the note letter names by utilizing the sharp/flat sequencing on a piano keyboard, with the five raised black keys representing the sharp/flat triangles on your label set.

       When you understand the precise layout of the sharp/flat pattern in the rising order of the tones down the strings from the open string tones, it will be much simpler to realize the note letter name of the fingering positions on your instrument.

       The linear pattern of the A through G note letter sequence will always appear within the same sharp/flat note sequence, irrespective of which string you are playing. If it helps you to more clearly see this order, you may want to download the PDF titled, *The Note Letter Name Strip*. The strip displays the note letter names along with their appropriate sharp/flat positions.

       The strip may also be used along with your label set to assist you in quickly naming any note in the label set. To use the note letter name strip, cut it free from the download sheet and align the order of the black sharp/flat triangles in the note letter strip with the linear order of any vertical row of the color/symbol codings. A display of the strip is shown to the right. The strip should be printed out at the same percentage as your label set printout.

How to Make a Note Letter Name Chart

If you have to make your own Label Set, separate note letter name strips and number columns have been provided in the *Note Letter Name Strip* download for the purpose of generating a *Note Letter Name Chart* (with sharp/flat triangles) for your instrument.
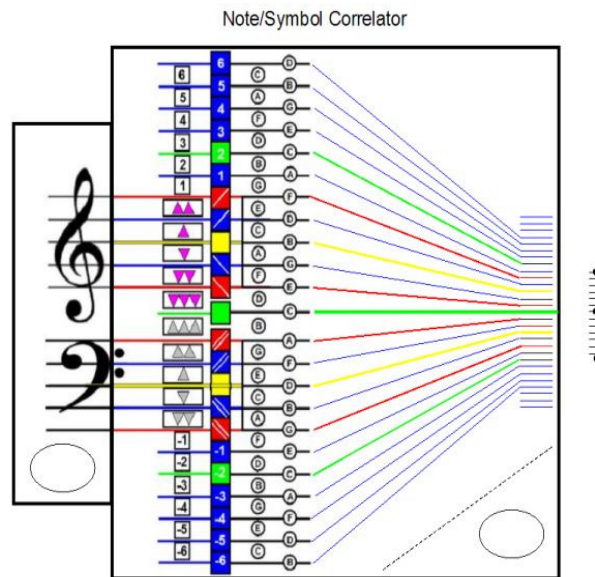
You begin the process by determining the open tones of your instrument strings, and then cutting out the individual strips starting with these open tone letter names.

For example, on a bass, you would have the open tones of EADG. So your first string column would begin with G, your second string column with D, and so on. The strips are then laid down in order and taped to a piece of blank paper to form string columns of note letter names with sharps and flats that will correlate to your label set and to your fingerboard. After adding a side or middle number set, the completed chart should look similar to the one in the reduced diagram to the right.

The Note/Symbol Correlator

If you find yourself having difficulty reading out note positions in the written music and/or converting these positions into the correct color/symbol coding, you might want to download the PDF for a useful device called the *Note/Symbol Correlator*. A reduced depiction of the device is shown below.

Note/Symbol Correlator

Last Thoughts

To properly determine the tonal range of your actual instrument (as opposed to the tonal range shown in the label set), count out the number of pitch lines on your fingerboard. Then look at this number position on the "1" string column of your label set. This is the highest note you can play out. The lowest note you can play out is, of course, the open note of your lowest sounding string.

Since the tonal range of your instrument lies between these two notes, it may be helpful to take a copy of the staff guide and the label set and cut both so that only this range shows, and use these cut copies when you use the Jixis system. You can then do the same thing with the note letter name chart if you wish.

Once you become accustomed to recognizing the color/symbol coding on the staff guide as it applies to your label set, it may help you to learn the note letter names if you place the note letter name chart for your instrument next to your label set for easy reference to the respective note names of the color/symbols in the label set.

There is no simple way to musical proficiency. Expert playing requires disciplined practice efforts over extended periods of time. The Jixis system can only assist you by helping you to locate the proper fingering positions for your written music. Jixis cannot replace the professional music teacher. However, if you limit yourself to the graphical playout of relatively simple scores, there will be no actual need to self-learn more than basic music notation and techniques in order to play such pieces well.

When you have chosen an appropriately written score, that is, one that has a limited amount of musical notation, place it before you and do the following. *Relax*. However briefly, it is advisable to stretch and clench your fingers in alternate cycles, and to stretch and rotate your wrists, arms and shoulders to come to a point of relaxed composure. Assume a straight-backed posture and place your hands in position on your instrument.

Concentrate on the graphical relationship between the color/symbol codings and the written music. And concentrate on the fact that each respective note in the written music represents a specific pitch line on a color/symbol label.

As you learn to play out various pieces of music, bear in mind that you have three main objectives to fulfill in order to be eventually enabled to *"override"* the Jixis system in order to easily play out music on your fingerboard. These objectives are:

To learn the fingerboard and written note names by graphical association and reverse comparison.

To learn to reference yourself along the fingerboard length by using the pitch line markers as guides.

To apply basic music notational understandings to the music as you are playing —

When you have achieved these objectives, and your graphical play has become reflexive and natural, you will have achieved the ultimate purpose of the Jixis system, *which is to be able to play out written music without using the system.*

Have fun, and enjoy the wonder of making music! ♪♫♪♫♪♫♪♫