

Strings? Why not!

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1 Philosophy

The idea of this method is to give you the tools to be creative with music. Concretely this means that instead of saying "The D chord is played using this shape", the following will be said: "A chord is constructed like *this*. So to play a D chord do *this* and you will end up with this shape". Where the "*this*" is some knowledge you will learn.

During the method you will notice that you will see certain constructs/symbols/etc. that you may not know yet and that are not explained directly. This is with intention. The idea is that by exposing you early on to something, while not consciously needing it yet, it is easier to learn the meaning of it later on.

When putting it in steps it looks as follows:

1. Expose you to new concepts so you have seen it, but not necessarily understand it yet.
2. Guided by exercises and songs, explain the previously shown concepts and how they work together.
3. Understand the theory of the concepts and be able to use them in playing.
4. Start at 1. again with new concepts.

2 Getting ready to play

2.1 Tuning

Your Ukulele needs to be in tune. This means that each string has a certain pitch. Even though this is already implied, it is important to note that the relative pitch difference per string is important as well. In Figure 2.1 you see the names (letters) of the string.

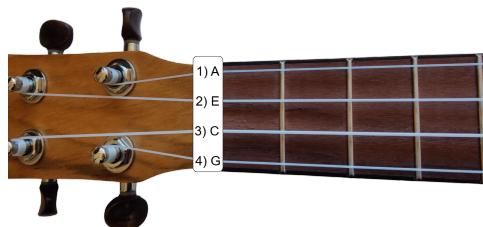


Figure 2.1: Names of the ukulele strings

A mnemonic is (from string 4 to 1):

- 4) **G** ood
- 3) **C** cooks
- 2) **E** eat
- 1) **A** all

You use a tuner to tune (see Figure 2.2). The tuner either gives a note value, and then you have to tune up or down to get the correct note on the screen. Or it shows a string number and you have to get the 'pointer' in the middle.

Be careful with tuning the string up (to a higher pitch). Especially the thinner strings can break if they are too tight.



Figure 2.2: Using a tuner on a ukulele

Another tuning options relies on the previously mentioned difference in pitch between the strings. In Figure 2.3 you see which positions on the neck have the same pitch as the thinner open string.

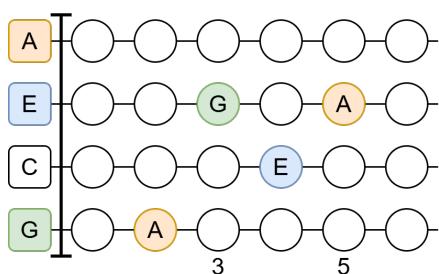


Figure 2.3: Relative tuning

3 First sounds

3.1 Fretboard

Each position on the neck has a different pitch. The metal bars on the neck are called the **frets**. For example, if someone asks to press the 2nd fret on the 3rd string, then you press your finger in the area of the green dot. Right next to the fret. See Figure 3.1.

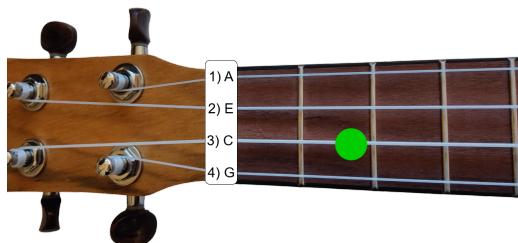


Figure 3.1: The green dot indicates the finer position for the 2nd fret on the 3rd string

In music there are 12 different pitches before coming 'back around'. When you come back at the same note letter you are an octave higher. The 12 different notes are shown below.

A A♯ B C C♯ D D♯ E F F♯ G G♯

You may see that there are only **7** different letters and **5** letters with a **#**. These **#** symbols are called **sharps**. On the fretboard a **#** means you move one fret up (to the body of the guitar).

In Figure 3.2 you see a music staff with underneath it **tablature (TAB)**. In the next section we will learn to read the notes. For now you can try to read the tabs first to play the sequence.

Each line in the TAB section represents a ukulele string, with the 4th (G) string on the bottom. The numbers indicate which fret should be pressed (a 0 means an open string). So the TAB in Figure 3.2 says to first play an open G string, and then play each ascending fret up to the 12th fret.

Figure 3.2: An octave from C to C on the 3rd C string with sharps

Remember the relative tuning? This implies that the same note (and pitch) can be played on different strings. This is demonstrated in Figure 3.3.

Figure 3.3: An octave from C to C on strings 1 to 3 with sharps

Besides sharps there are also flats. A flat (\flat) means to go a halve tone (one fret) down. Rewriting Figure 3.3 with flats would look like Figure 3.4.

In Figure 3.4 also a new symbol is shown. The natural (\natural). This means that the note on which a \flat or \sharp was placed, now is 'normal' again. Whenever a \flat or \sharp is added to a note, it remains valid for this note up to the end of the measure. What a 'measure' is will be explained later. We will also practice more with sharps and flats later.

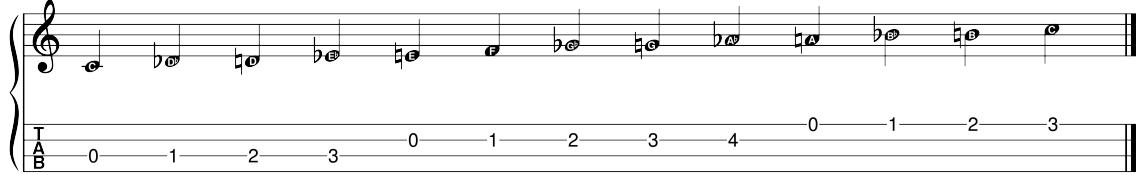


Figure 3.4: An octave from C to C on strings 1 to 3 with flats and naturals

3.2 Finger names

When playing ukulele, your fingers will be given a name. This makes it easier in music notation to indicate which finger should be used. The names are shown in Figure 3.5.



Figure 3.5: Names of the fingers [3]

Figure 3.6 shows how to position your left hand. The most important thing is to have your fingertips almost completely perpendicular on the string. This makes sure that you get a clean sound and don't accidentally touch other strings.



(a)



(b)

Figure 3.6: Left hand position [1]

3.3 Free and rest stroke

With a free stroke you hold your right hand in a relaxed position over the strings (see Figure 3.7). To play a string, move your finger through the string without lifting the upper part of your finger. Your finger should slightly curl into your hand. Once you made the sound, move your finger back to the relaxed position.

The trick now is to not hit the other strings, and to not 'pluck' the string (making a buzzing sound).



(a)



(b)

Figure 3.7: Free stroke position [2]

A rest stroke may sound a bit louder (but with some practicing a free stroke can be as loud). Like the name suggests, a rest stroke means that you move your finger through a string to play it, but now you let your finger rest on the next string.

3.4 Exercises

In the exercises below you see some new symbols above the notes. The numbers with circles around them indicate on which string the note should be played (this can also be seen from the TAB). The *i* and *m* indicate which right-hand finger should be used to play the note.

Play exercise Figure 3.8 first with a rest stroke and then with a free stroke to feel the difference.

Figure 3.8: Exercise: rest and free strokes

This second exercise (Figure 3.9) is similar to Figure 3.8, but a bit more challenging.

Figure 3.9: Exercise: changing strings with *i* and *m* fingers

In Figure 3.10 you will also use your left hand. The numbers above the notes indicate which left-hand finger should be used to press the fret. Play this exercise using alternating *i* and *m* fingers.

Focus on the tabs for now and ignore the other symbols.

Perfect

Verse 1

Music: Ed Sheeran
Arranged: Enzo Evers

The tablature consists of three staves of guitar notation. The first staff starts with a key signature of A♭ major (two flats) and a tempo of 95 BPM. It features a 12/8 time signature. The lyrics "I found a love for me Darling, just dive right in and follow my" are written below the notes, with corresponding left-hand fingering (4, 4, 4, 4; 1, 1, 1, 1; 1, 1, 1, 1). The second staff begins with an E♭ chord (fingering 3), followed by an A♭ chord (fingering 4), an Fm chord (open circle on 3rd string), and a D♭ chord (fingering 1). The lyrics "lead Well, I found a girl beauti-ful and sweet I never knew you were the someone waiting for" are provided, with left-hand fingering (3, 3, 3; 4, 4, 4, 4; 1, 1, 1, 1; 1, 1, 1, 1). The third staff starts with an E♭ chord (fingering 3) and ends with a vertical bar line. The lyrics "me" are written below the notes, with left-hand fingering (3, 3, 3, 3).

Figure 3.10: Finger exercise using Perfect - Ed Sheeran

If you want a challenge, you can try to play the chords. The vertical fretboards above the notes have dots in the frets that you need to press for the chord. The left string in the symbol is the 4th string. The open circle on the 3rd string for the Fm chord means to play the open 3rd string.

4 Getting familiar with the fretboard

4.1 Can I already play the that song that I like?

The answer is, "kinda". So far you've made your first sounds and played along with a known song.

By just reading tabs or chord charts you can get quite far. But you will most likely be stuck with playing along with songs without really knowing what is going on. And if that is your goal, that is completely fine!

However, by getting familiar with the fretboard (which frets are which notes, and how to check this), you can be a lot more creative with music.

Later on you will also learn about scales, which allow to you improvise over songs. To know which frets (or chords) to play, you will need to know which notes belong to the frets.

In the following pages we will play some tunes that help you to learn the fretboard. After that we will focus on chords.

4.2 Music staff

You have already seen the music staff from ?? in the previous exercises. But the meaning of it was not explained yet.

- The letters A-G on the staff show which line on the staff has which note name. Note names go from A to G as shown in an earlier chapter.
- The notes go up alphabetically (starting again with A after G).
- Notes in between the lines nicely spell out "**FACE**", making it easy to remember.
- Note on the lines can be remembered with the mnemonic "**Every Good Boy Does Fine**".
- The most left symbol (G clef) is called the G clef. Note that the curl of the G clef is on the line of the G note (second line from the bottom).
- The vertical line in the middle indicates the start/end of a measure.
- The thicker vertical line in at the end indicates the end of the piece.

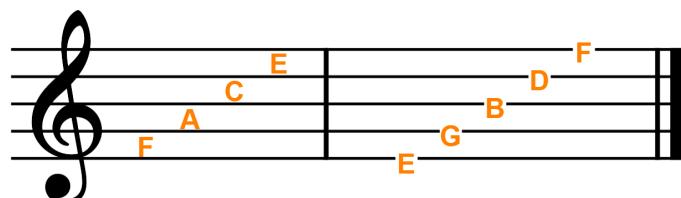


Figure 4.1: Note names on the staff in two measures

4.3 Counting

So far we have also only seen one type of note. The quarter note. However, there are more. See Figure 4.2. The $\frac{4}{4}$ time signature means that there can fit 4 (top number) quarter notes (bottom number) in a measure.



Figure 4.2: Note duration

Important: A whole note (o) equal 4 quarter notes (♩). It does **not** equal a whole measure.

There are also other time signatures. The top value indicates how many notes of the bottom number's duration fit in a measure. So a $\frac{3}{4}$ time signature can fit 3 quarter notes per measure. And a $\frac{6}{8}$ time signature can fit 6 eighth notes per measure. Note that $\frac{3}{4}$ and $\frac{6}{8}$ indicate the same duration per measure, but they give a different feel. This is demonstrated in Figure 4.3.

In Figure 4.3 you also see a new duration notation. In the first measure with $\frac{6}{8}$ timing, there are dots next to the notes (•). This means that the note has a duration of 1.5x its original duration.

The ">" symbol means that this note should be played with a more powerful accent. The **bold** numbers above the notes indicate the counting of the notes. A bold number means to put an accent on it, but played less accented than the ones where there is also an ">" symbol.

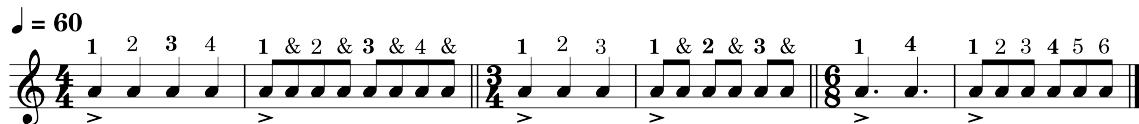


Figure 4.3: Time signatures

Where notes indicate when to play a sound, rests indicate when to be silent. In Figure 4.4 the most common rest durations are shown.

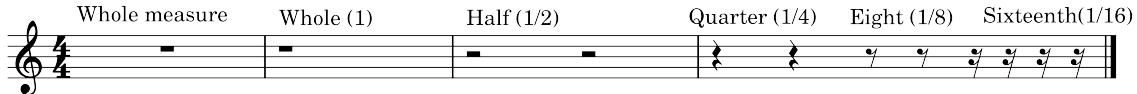


Figure 4.4: Rest notations of different duration

In Figure 4.5 an exercise is provided to count the rests. Remember to take this slow and to be conscious about the counts. As a help the tempo is set to the 60 quarter notes per minutes (BPM). This way each quarter note is 1 second. But feel free to play it slower.

It can also be helpful to use a metronome.



Figure 4.5: Rest notations of different duration

4.4 Learning the main notes

To learn the notes we will first start with the well known "Jingle bells". This song uses all non-sharp/flat notes on the 3rd and 2nd string of the ukulele up to the 3rd frets. See Figure 4.6 for the tabs of these notes.

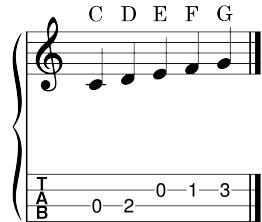


Figure 4.6: Notes used for Jingle bells

Above the notes you see the left-hand fingers to be used. Use alternating *i* and *m* fingers.

Jingle bells

Music: James Lord Pierpont
Arranged: Enzo Evers

Figure 4.7: Jingle bells

In preparation to play the "Tetris" tune, the notes from Figure 4.8 should be learned. Note that only the A note is new compared to the notes in Jingle Bells (Figure 4.6). The full tune requires learning about playing sharp notes. Therefore the full tune will be learned in the next section.

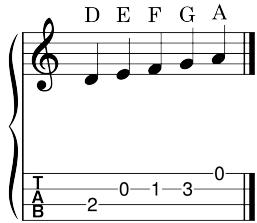


Figure 4.8: Notes used for the first part of the Tetris tune

Above the notes you see the left-hand fingers to be used. Use alternating *i* and *m* fingers.

Tetris (first part)

Music: Hirokazu Tanaka
Arranged: Enzo Evers

Figure 4.9: First part of the Tetris tune



The "Tetris" tune is derived from a Russian folk song called "Korobeiniki", which is based on a similar named poem written by Nikolay Nekrasov. [6]

In the next song you will learn the remaining non-sharp/flat notes on the first string. The B and the C.

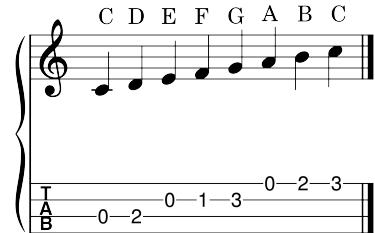


Figure 4.10: Notes used for the song "De Vogeltjesdans"



In Figure 4.10 you not only see the notes used in the song, but you also see the C major scale. Later on we will talk more about scales.

De vogeltjesdans

Music: De Electronica's
Arranged: Enzo Evers

Figure 4.11: De vogeltjesdans - De Electronica's



While most people know this as the Dutch titled "De vogeltjesdans", it is based on the original song called "Der Ententanz" composed by Werner Thomas. [5]

No new notes to learn for "Seven Nation Army" (Figure 4.12). Note, because of the limited low notes on the ukulele, Figure 4.12 is played slightly higher compared to the original recording.

Play this song again with alternative *i* and *m* fingers. But this time play the last D note with your thumb *p*.

Seven Nation Army

The White Stripes

Music: Jack White, Meg White
Arranged: Enzo Evers

The musical notation for "Seven Nation Army" is presented in two staves. The first staff begins with a tempo marking of $\text{♩} = 125$. The notes are primarily eighth notes, with fingerings such as 0, 3, 0, 3 indicating the specific frets being played. The second staff continues the pattern and ends with a dynamic marking *p* above a single note.

Figure 4.12: Seven Nation Army - The White Stripes

4.5 Sharps and flats

In the beginning on this method it was already mentioned that sharps \sharp increase the note by a half step and flats \flat decrease the note by a half step. It has also been mentioned that sharps and flats are valid for the duration of a measure. If a note should get its 'normal' sound back, a natural \natural symbol is placed in front of it. This undoes the sharp/flat for the rest of the measure (until another sharp/flat is placed).

What has not been mentioned yet, is that a sharp/flat placed on a note is valid only for that pitch of the note (position on the staff). See for example Figure 4.13a. Here you see that the first C (open third string) got a sharp, and is therefore now played a half tone (1 fret) higher on the 1st fret. The C that is played one octave higher on the first string is still a C. When the C note then gets a natural sign, it becomes the normal C note again which is played on the open third string. The same example can be given for flats (Figure 4.13b).

(a) Usage of sharps and naturals

(b) Usage of flats and naturals

Figure 4.13: Sharps, flats and naturals

Sometimes a song uses a note with a flat or sharp a lot of times. It can then be considered to be in a certain key (we will come back to that later). It is then not desired to add sharps/flats all over the sheet music. That could get messy. Instead, the sharps/flats used for the song are shown at the beginning of the piece and apply to all pitches of the notes (unless natural symbols are used). Note that this is different compared to adding sharps inside a measure, there it is only applied to that specific pitch.

See for example Figure 4.14 and Figure 4.15.

Figure 4.14: Example of adding sharps at the beginning of the music

Figure 4.15: Example of adding flats at the beginning of the music

Before playing some pieces to learn the sharps and flats, let's first show the sharps and flats on the fretboard again:

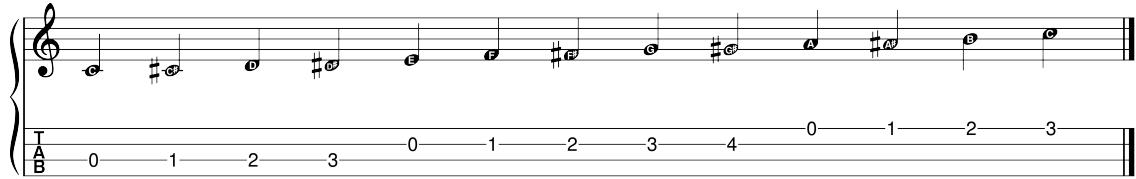


Figure 4.16: An octave from C to C on strings 1 to 3 with sharps

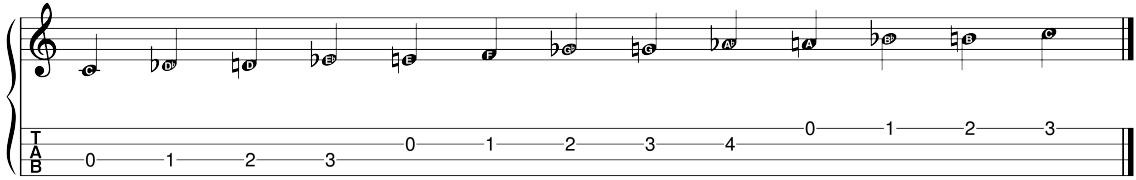


Figure 4.17: An octave from C to C on strings 1 to 3 with flats and naturals

Also remember that between each note, except for B-C and E-F, there are two half steps. Between B-C and E-F there is only one half step.

A	A [#]	B	C	C [#]	D	D [#]	E	F	F [#]	G	G [#]
A	B _b	B	C	D _b	D	E _b	E	F	G _b	G	A _b

Table 4.1: Sharp and flat intervals

Remember that a sharp and flat simply move the note a half step up or down respectively. So what would happen when the E note gets a [#]? It would become an F. And what does an F_b resolve to? An E indeed. The same holds for the B-C interval. B[#] is the same as a C and a C_b is the same as a B.

The music shown in Figure 4.18 doesn't show any symbols in the notes. But it does show two flat symbols at the beginning of the music. In this case it shows a B_b and an E_b. Note that these apply to any pitch of the B and E notes in the music.

There are two tricky parts in this song. The first is at the end of measure 4. There a B_b, played on the 1st string, is followed by an F played on the 2nd string. Both notes are played on the 1st fret. So here a technique called a **finger-roll** will be used. This means to smoothly 'roll' your finger from the 1st fret on the 1st string to the 1st fret on the 2nd string. This in such a way that your finger mutes the 1st string once it presses the 1st fret on the 2nd string.

Another tricky thing is the E_b in this 6th (second to last) measure. We have learned that a flat means to go one fret down. But the E is an open string. So what you have to remember is that the 4th fret on the 3rd string is the same E as the open 2nd string. So the E_b is played on the 3rd fret on the 3rd string in this case.

An empty tablature staff has been added. You can fill this in yourself to help learn the position of the (flat) notes on the fretboard.

Memory
Cats (musical)

Music: Andrew Lloyd Webber
Arranged: Enzo Evers

♩ = 80

B♭ B♭ Gm Dm

Figure 4.18: Memory from the Cats musical

Happy birthday uses a music-wide F#[#]. It also introduces one new note. The high D note (in measure 6). This note has not been played in earlier songs yet. But try to see if you can figure out the position based on your knowledge of the note intervals (Table 4.1) and how that relates to the frets on the fretboard. If you want to know the answer, have a look at Figure 4.13b.

Happy birthday

Music: Patty Hill, Mildred J. Hill
Arranged: Enzo Evers

Figure 4.19: Happy birthday

Earlier it was promised to play the full Tetris tune after we learned about sharps. So here it is.

This also introduces the repeat sign and the **D.C. al Fine** term.

The repeat symbol is shown in Figure 4.20. This means that if you see the right side of the repeat section, you go back to the left side of the repeat section and play the measures like normal. But when you come to the right side of the repeat section again, you ignore it. So the repeat symbol only repeats once.



Figure 4.20: The repeat symbol

The "D.C. al Fine" term means to go back to the beginning of the music piece and play until you see the "Fine" text. Then the music is finished. Here "D.C." means "Da Capo" and is Italian for "from the beginning".

Tetris

Music: Hirokazu Tanaka
Arranged: Enzo Evers

Figure 4.21: Full Tetris tune

In Hedwig's Theme (see the next page) you will see the usage of sharps, flats, naturals and music-wide sharps. It uses the same music-wide F♯ as Happy birthday.

To better help learn the position of these notes there is an empty tablature staff added. You can fill this staff with the correct tabs to help you learn.

After that there is the song "He's a pirate" from the "Pirates of the Caribbean" movies. This song doesn't introduce any new notes and is here purely for review.

Hedwig's Theme

Harry Potter movies

Music: John Williams
Arranged: Enzo Evers

$\text{♩} = 180$

A B

11

A B

21

A B

31

A

He's a pirate

Pirates of the Caribbean

Music: Klaus Badelt, Hans Zimmer

Arranged: Enzo Evers

$\text{♩} = 210$ Start quiet and build up volume

7

14

21

28

35

43

51

59

67

The orchestra's sound goes up in pitch.
We stay stay the same pitch.

2**84**

The following song introduces two new high notes. The high E and F (see Figure 4.22). Note that in Figure 4.23 all F notes become an F♯ due to the sharps at the start of the song.



Figure 4.22: Position of the high E, F, and F♯notes

The notes here play the singing/melody line. Therefore the chords are placed above the notes to make it easier for two people to play together. One plays the chords, the other the melody. But don't worry about the chords yet. We come to that in the next chapter. The complete song will be learned later on in the book.

Just like with the other songs. Feel free to fill in the tabs to help you learn the notes.

C'est La Vie (intro + chorus melody)

Chef'Special

Music: Chef'Special
Arranged: Enzo Evers

Figure 4.23: C'est La Vie - Chef'Special

5 Scaled and chords

5.1 Scales

A scale is a collection of notes in ascending order between a note and its octave. The two main scales are the major (happy sound) and minor (sad sound) scale.

When describing scales, often the terms "whole" (w) and "half" (h) steps are used. Sometimes you will also see the terms "tone" (T) and "semitone" (S). Moving up a half step on the ukulele means moving to the next fret (towards the body). Moving up a whole step is the same as two half steps.

Lets look at the intervals again (Table 5.1). Going one step to the left or to the right is a half step interval. To take a whole step, simply take two half steps.

A	A♯	B	C	C♯	D	D♯	E	F	F♯	G	G♯
A	B♭	B	C	D♭	D	E♭	E	F	G♭	G	A♭

Table 5.1: Sharp and flat intervals. Each step to the left or right is a half step.

5.1.1 The major scale

As mentioned. The most common scales are the major and minor scales. A lot of music theory is based on the major diatonic scale. A diatonic scale means that it has 7 different notes in the scale where each letter only occurs once. So the major diatonic scale is the first one we will learn.

Each scale has a formula. For the major diatonic scale the formula is shown in (Table 5.2). On the top you see the steps between each note (the formula itself). The numbers indicate the index of the note in the scale. Index 1 and 8 are the same note. But index 8 is one octave higher than index 1.

W	W	H	W	W	W	H	
1	2	3	4	5	6	7	8

Table 5.2: Major scale intervals

Note that Table 5.1 has 12 different notes/pitches. Now count the total amount of half steps that are shown in Table 5.2 (a whole step is two half steps). Indeed, there are 12 half steps to go from the note at index 1 to the same note one octave higher (index 8).

To create the C major scale we will start on the C and then simply follow the formula.

W	W	H	W	W	W	H	
1	2	3	4	5	6	7	8

Table 5.3: C major scale

The G major scale is shown below in (Table 5.4).

	W	W	H	W	W	W	H	
1	2	3	4	5	6	7	8	
G	A	B	C	D	E	F♯	G	

Table 5.4: G major scale

In Table 5.5 you see the major scales of all the natural notes. You don't need to remember these by heart at the moment. You do need to learn the formula of the major scale by heart. There are three things to note:

1. Each scale only has unique letters. Therefore the 4th note in the F major scale is a B♭ and not an A♯.
2. The 5th note in the scale is the start of the scale on the next row. Of course, this is because they are listed as such now. But it is the basis of the "circle of fifths" which we will learn more about later.
3. Each scale below another in this list has one more ♯ than the previous. And the notes that have a sharp in one scale, also have a sharp in the scales below it. Again, this has to do with the "circle of fifths".

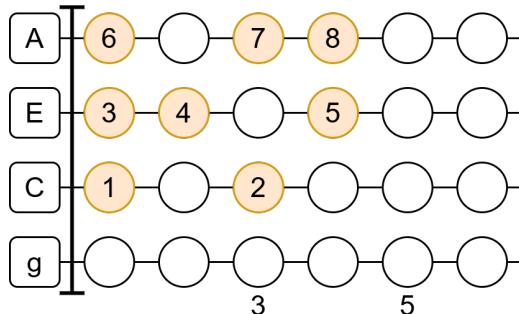
	W	W	H	W	W	W	H	
1	2	3	4	5	6	7	8	
F	G	A	B♭	C	D	E	F	
C	D	E	F	G	A	B	C	
G	A	B	C	D	E	F♯	G	
D	E	F♯	G	A	B	C♯	D	
A	B	C♯	D	E	F♯	G♯	A	
E	F♯	G♯	A	B	C♯	D♯	E	
B	C♯	D♯	E	F♯	G♯	A♯	B	

Table 5.5: Major scales of all natural notes

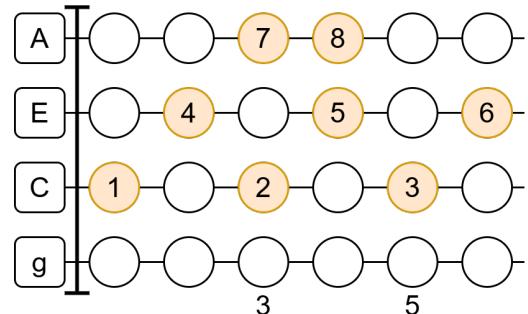
In Figure 5.1 different shapes are shown on how the major scale can be played. These shapes can be moved up and down the fretboard, as long as the distance between the frets stay the same. Shape Figure 5.1c can even be moved up and down the strings. By moving the shape, you will play a different major scale. The scale that you are playing is determined by the root note (the "1" note). In this example we are therefore playing the C# major scale.

There are other "shapes" to play the major scale as well, but these shapes don't start or the root (1) note. We will come back to those later.

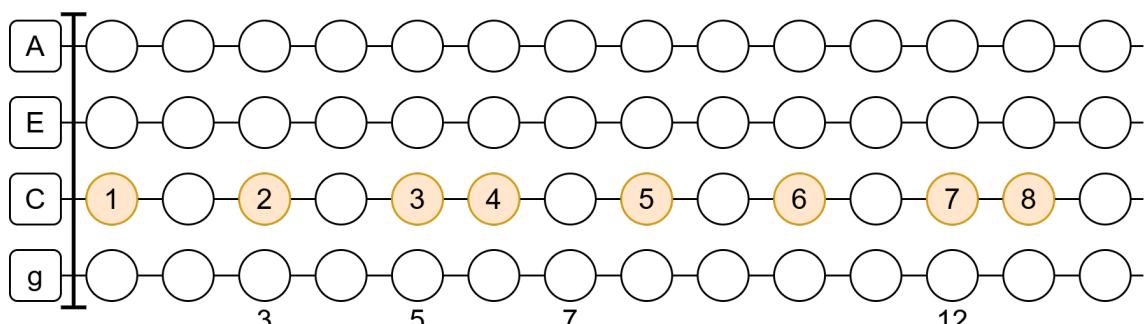
Learning these shapes by heart makes it easy to improvise over a song. But more important is to see how these shapes relate to the intervals of the major scale. The easiest shape for this is Figure 5.1c. With this shape you can easily recognize the major diatonic scale formula (w-w-h-w-w-w-h). All shapes have the same notes, just played on a different position on the fretboard.



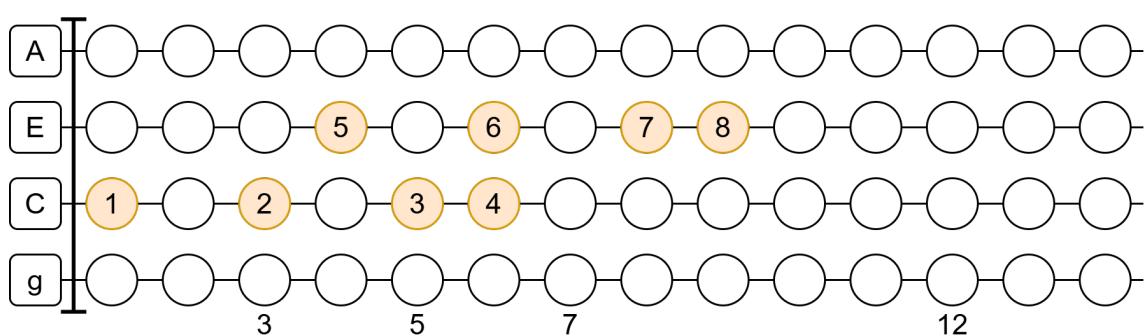
(a) Major scale on the fretboard (shape 1)



(b) Major scale on the fretboard (shape 2)



(c) Major scale on the fretboard on a single string



(d) Major scale on the fretboard on two strings starting from the C string

Figure 5.1: Major scale on the fretboard

Of course, you don't have to start on the C string. You can also start on the E string. Then the two-string shape would look like Figure 5.2. Here we are playing an F major scale.

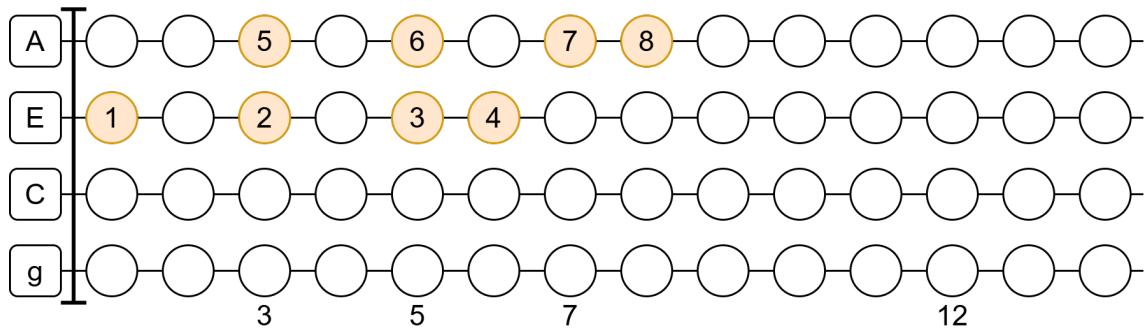


Figure 5.2: Major scale on the fretboard on two strings starting from the E string

Now that we've seen a lot of different ways to play the major scale, we will start focusing on the most compact shape. The shape shown in Figure 5.1a.

Exercise

In Appendix A you see some empty ukulele fretboards. Try to fill these with the different major scales (A, B, C, D, E, F, G) that we've seen in Table 5.5. Write the note names instead of the numbers 1-8. Use the shape from Figure 5.1a. You can of course print out the empty ukulele fretboard diagram as often as you want.

While doing this exercise, don't forget to play the scales on the ukulele as well.

5.1.2 The minor scale

The minor diatonic scale has the formula shown in Table 5.6.

	W	H	W	W	H	W	W
1	2	3	4	5	6	7	8

Table 5.6: Minor scale intervals

To create the A minor scale we will start on the A and then simply follow the formula.

	W	H	W	W	H	W	W
1	2	3	4	5	6	7	8
A	B	C	D	E	F	G	A

Table 5.7: A minor scale

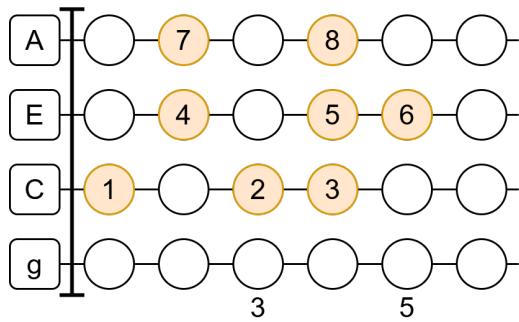
Similar to example for the major scales of the natural notes, Table 5.8 shows the minor scales of the natural notes.

1. Each scale only has unique letters. Therefore the 6th note in the D minor scale is a $B\flat$ and not an $A\sharp$.
2. The 4th note in the scale is the start of the scale on the next row. Of course, this is because they are listed as such now. But it is the basis of the "circle of fourths" which we will learn more about later. Note that for the major scale this was the fifth note. Therefore the earlier mentioned "circle of fifth" applies to major scale, while the term "circle of fourths" applies to minor scale.
3. Each scale below another in this list has one more \flat than the previous. And the notes that have a flat in one scale, also have a flat in the scales below it. Again, this has to do with the "circle of fourths".

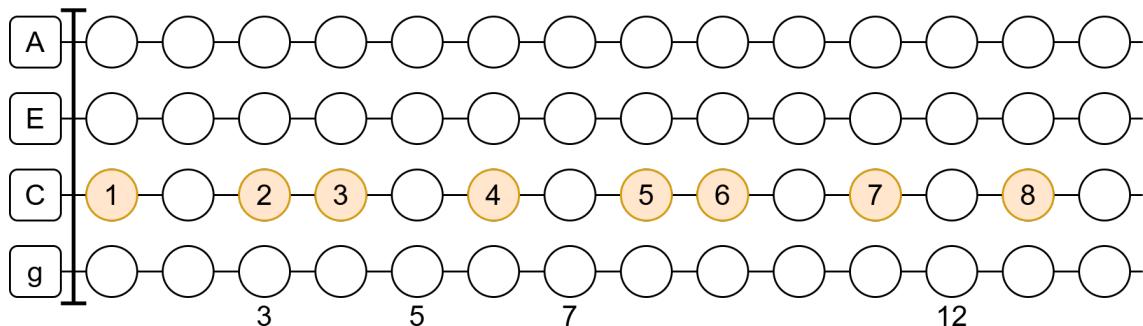
	W	H	W	W	H	W	W
1	2	3	4	5	6	7	8
B	$C\sharp$	D	E	$F\sharp$	G	A	B
E	$F\sharp$	G	A	B	C	D	E
A	B	C	D	E	F	G	A
D	E	F	G	A	$B\flat$	C	D
G	A	$B\flat$	C	D	$E\flat$	F	G
C	D	$E\flat$	F	G	$A\flat$	$B\flat$	C
F	G	$A\flat$	$B\flat$	C	$D\flat$	$E\flat$	F

Table 5.8: Minor scales of all natural notes

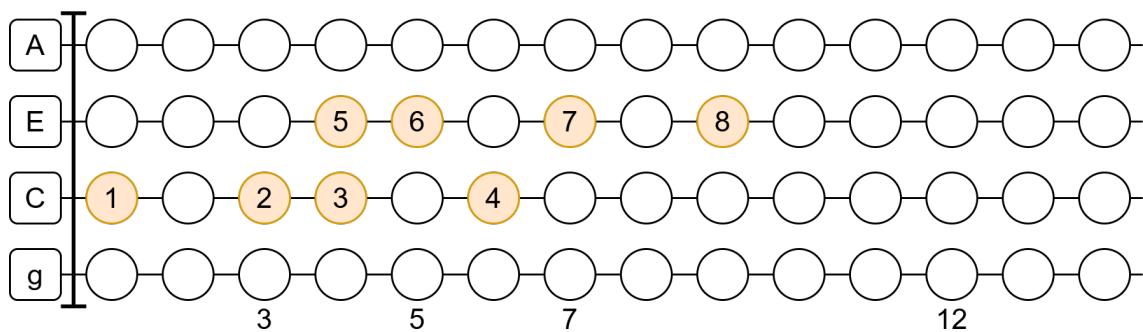
Just as for the major scale, there are also patterns for the minor scale



(a) Minor scale on the fretboard on three strings



(b) Minor scale on the fretboard on a single string



(c) Minor scale on the fretboard on two strings starting from the C string

Figure 5.3: Minor scale on the fretboard

Of course, you don't have to start on the C string. You can also start on the E string. Then the two-string shape would look like Figure 5.4. Here we are playing an F major scale.

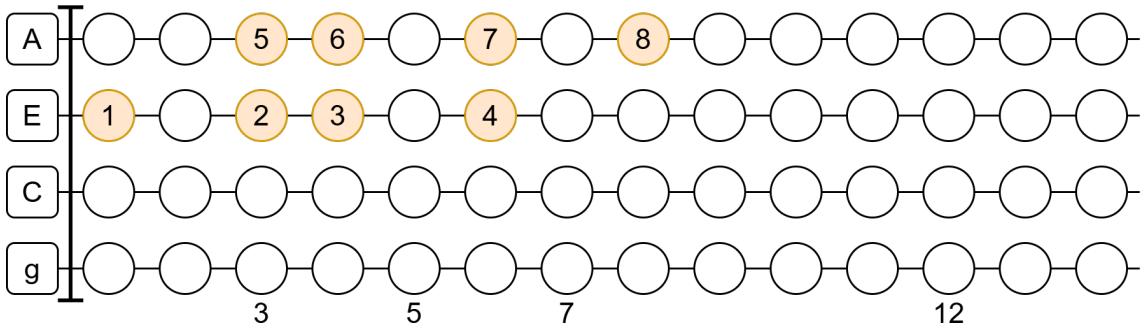


Figure 5.4: Minor scale on the fretboard on two strings starting from the E string

Now that we've seen a lot of different ways to play the minor scale, we will start focusing on the most compact shape. The shape shown in Figure 5.3a.

Exercise

In Appendix A you see some empty ukulele fretboards. Try to fill these with the different minor scales (A, B, C, D, E, F, G) that we've seen in Table 5.8. Write the note names instead of the numbers 1-8. Use the shape from Figure 5.3a. You can of course print out the empty ukulele fretboard diagram as often as you want.

While doing this exercise, don't forget to play the scales on the ukulele as well.

5.2 Chords

5.2.1 Building chords

In the previous sections we have learned about the major and minor scales. This information can be used to finally start to learn about chords.

A major or minor chord is constructed by playing the 1st, 3rd and 5th note of a scale at the same time. That's it.

5.2.2 Open and barre chords

When a chords is played that contains open strings, it is called an "open chord". When a chord is played without open strings, it is called a "barre chord".

The nice thing about barre chords is that you can move them up and down the neck. At that point the barre chord becomes more of a shape than a chord per se. Depending on what the root note is at a certain position, the barre chord will get a different name. We will see this later in the **CAGFD system**.

On the next page in Figure 5.5 you will see all the major and minor chords listed. The chord **C** is a major chord and the chord **Cm** is a minor chords. The same holds for the other chords. Below each chords there are the 1st, 3rd and 5th notes from the respective scale (see Table 5.5 and Table 5.8).

The green dots indicate the root note. This is the note with the same name as the chord.

A couple things to note:

- All chords, except the B and Bm chords, can be played as an open chord.
- The root and the 5th note of a scale are same for both the major and minor variant.
- The 3rd note of minor chord is always a half step / 1 semitone lower than it is in the major chord.

In most places on the internet you will see the E (and Em) chord be played as the barre variant. But you see here that it can also be played as an open variant.

The barre variant of the E chord is a good example of what was mentioned in the beginning. The thing about barre chords to become more like a shape that can become different chords. Compare the shape of the D and Dm chords with the E and Em chord shapes. Note how the shape is the same and there are no open strings in the E and Em. By just moving the D chord shape a whole step (two frets) to the right, the root note has changed and it is therefore now an E chord.

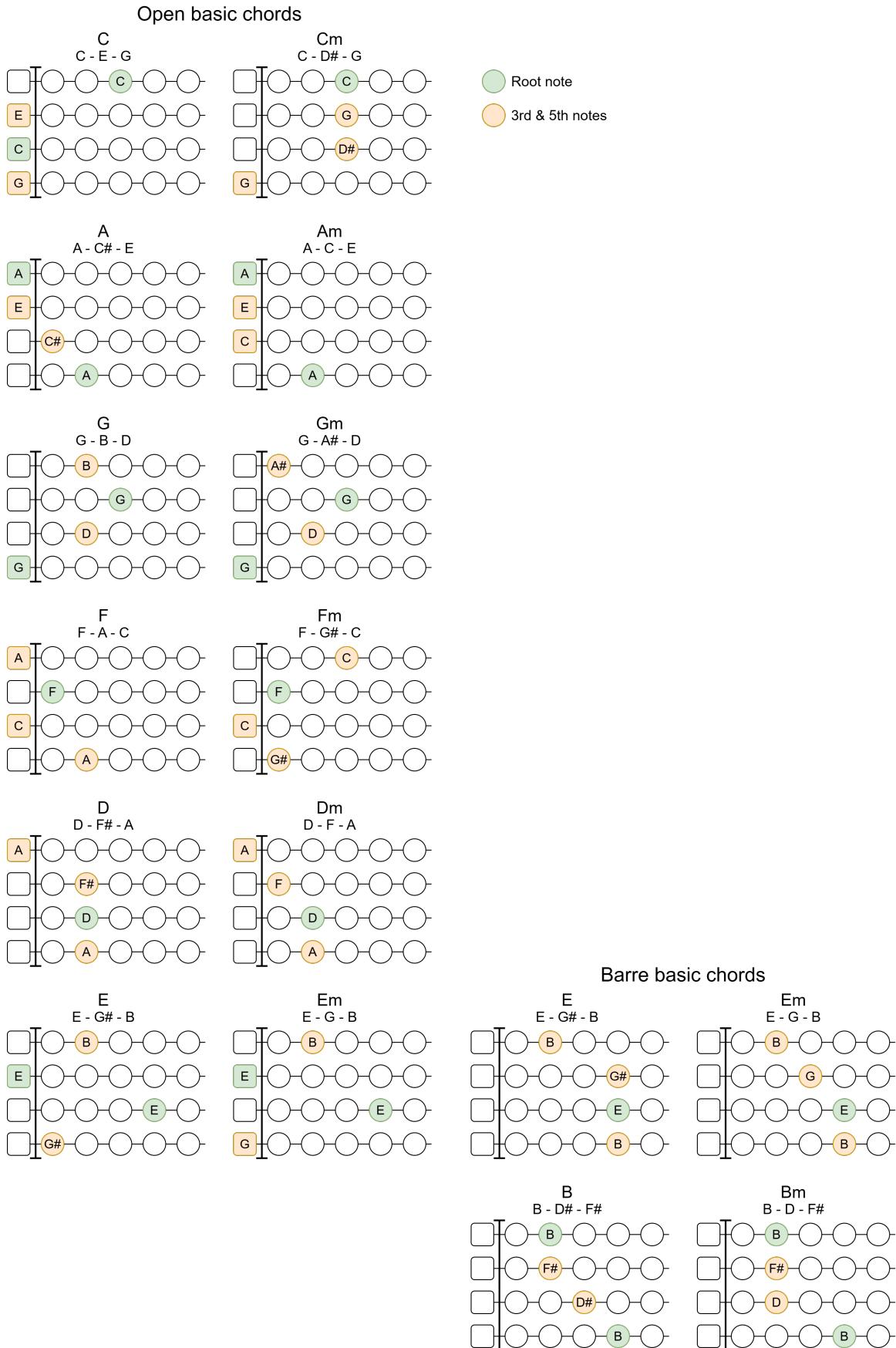


Figure 5.5: Major and minor chords

Lets play some chords. The theme song (Figure 5.6) of the Adventure Time series is a good start. The notes on the staff here are replaced by rhythm notation. The duration of the note shapes is still the same. But now it only indicates the strumming rhythm.

Adventure Time Theme

Music: Pendleton Ward
Arranged: Enzo Evers

The tablature shows three staves of music. The first staff starts at measure 1 with a tempo of $\text{♩} = 180$. It features four chords: G (two vertical strokes), D (one vertical stroke), C (three vertical strokes), and D (one vertical stroke). The lyrics below are: "Adventure time, come on grab your friends. We're going to very distant lands." The second staff begins at measure 5 and continues the pattern of G, D, C, D chords. The lyrics are: "With Jake the dog, and Finn the human. The fun will never end, it's adventure". The third staff starts at measure 9 with a G chord. The lyrics are: "time!".

Figure 5.6: Adventure Time Theme Song

In the song "Knockin' On Heaven's Door" By Bob Dylan, the same chords are used as in the Adventure Time theme, plus one extra chord. The **Am**.

Knockin' On Heaven's Door - Bob Dylan

G D Am G D C
 Intro: Oo oo-oo oo
 G D Am G D C
 Oo oo-oo oo Oo oo-oo oo

G D Am
 1. Mama, take this badge off of me
 G D C
 I can't use it anymore
 G D Am
 It's gettin' dark, too dark for me to see
 G D C
 I feel like I'm knockin' on heaven's door

G D Am
 Chorus: Knock, knock, knockin' on heaven's door
 G D C
 Knock, knock, knockin' on heaven's door
 G D Am
 Knock, knock, knockin' on heaven's door
 G D C
 Knock, knock, knockin' on heaven's door

G D Am
 2. Mama, put my guns in the ground
 G D C
 I can't shoot them anymore
 G D Am
 That long black cloud is comin' down
 G D C
 I feel like I'm knockin' on heaven's door

G D Am
 Chorus: Knock, knock, knockin' on heaven's door
 G D C
 Knock, knock, knockin' on heaven's door
 G D Am
 Knock, knock, knockin' on heaven's door
 G D C
 Knock, knock, knockin' on heaven's door

Another song to practice chord changes with can be "Hey Ya!" from Outkast. This only uses four chords, and the order of the chords is the same throughout the whole song.

To give a feeling for the chords, the first part of the song is shown here. You can listen to the song and play these chords for the rest of the song.

Hey Ya! - Outkast

Intro: One, two, three, uh!

G C
1. My baby don't mess around

D E
Because she loves me so, and this I know for sure (Uh)

G C
But does she really wanna

D E
But can't stand to see me walk out the door? (Ah)

So far you have played the songs using the 'standard' shapes. However, not all songs can or should be played with those chords. Instead you will want to learn about the barre shapes. Two examples are shown in Figure 5.5 as the E and B chords. For these chords you place your index finger over (all) the strings, and use the remaining fingers to press the remaining notes of the chord. Figure 5.7 shows how the B major chord can be played with a barre shape.



Figure 5.7: Hand position for a barre chords [4]

The song "Perfect" by Ed Sheeran is a good song to practice the barre chords.

The song uses 4 chords: Ab, Fm, Db, and Eb.

Only the first verse is shown here to focus on the barre chords themselves. The barre chords to use are shown in Figure 5.8. Note the numbers below the shapes. These are the fret numbers.

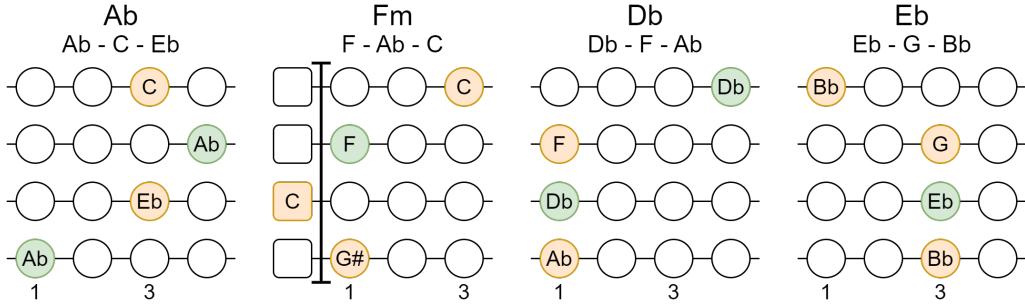


Figure 5.8: Barre chords used in "Perfect - Ed Sheeran"

The chords shown in Figure 5.8 are not displayed in Figure 5.5 directly (except for the Fm).

Look at the Ab chord. The A chord is shown as an open chord in Figure 5.5 instead of a barre chord. Making it difficult to move it one fret down to make it an Ab. You may remember that Ab is the same as G#. The G chord was shown as an open chord as well. But moving it up by one fret (to make it a G#) only requires one extra finger on the first fret of the 4th string. This shape is shown in the Ab chord in Figure 5.8.

The same relation can be made between the Db and the C#, and between the Eb and the D#.

Using this relation of the # and b, and knowing your basic chord shapes, allows you to play basically any chord.

Perfect - Ed Sheeran

Ab Fm
 1. I found a love for me
 Db Eb
 Oh, darling, just dive right in and follow my lead
 Ab Fm
 Well, I found a girl, beautiful and sweet
 Db Eb
 Oh, I never knew you were the someone waitin' for me

5.2.3 Your turn

We've played all kind of different chords now. It's up to you to see which song you want to play, look up the chords on the internet, and practice the chord transitions. Feel free to play the chords in different ways. Each option gives a different sound, or maybe one option is easier to play than another. Just experiment!

5.3 Chord progression

5.3.1 Chords in a scale

A chord progression of chords. For example, if you would play the chords C and G repeatedly for (part of) a song then the chord progression would be C - G. However, assuming that we are in the key of C major and therefore the C would be the root note/chord, this chord progression isn't universal. For that reason chord progressions are often referred to with numbers (notated with roman numerals).

Using numbers the chord progression C - G would become 1 - 5, or with roman numerals I - V. The indexes in the major scale can be shown using the roman numerals as well. See Table 5.9. The chord and the 7th index (vii°) is called a diminished chord, but we will ignore this for now. The 8th index is not assigned a chord because it's the same as index 1.

Two things to note:

- **Capitalized** roman numerals correspond to **major** chords
- **Non-capitalized** roman numerals correspond to **minor** chords

	W	W	H	W	W	W	H
1	2	3	4	5	6	7	8
I	ii	iii	IV	V	vi	vii $^\circ$	

Table 5.9: Chords in the major scale

The same can be done for the minor scale (Table 5.10).

	W	H	W	W	H	W	W
1	2	3	4	5	6	7	8
i	ii $^\circ$	III	iv	v	VI	VII	

Table 5.10: Chords in the minor scale

How and why some chords are major and others are minor will be explained later. Lets first see how these can be used.

5.3.2 Analyzing "Knockin' On Heaven's Door - Bob Dylan"

In the previous section you played "Knockin' On Heaven's Door" using the G, D, C, and Am chords. There were two alternating sequences:

- G - D - Am
- G - D - C

The song is in the G major key. The G major scale is shown again in Table 5.11. The bold notes are the chords from "Knockin' On Heaven's Door".

	W	W	H	W	W	W	H
1	2	3	4	5	6	7	8
I	ii	iii	IV	V	vi	vii $^\circ$	
G	A	B	C	D	E	F#	G

Table 5.11: G major scale with chords

With this knowledge, the chords sequences can be described in terms of roman numerals instead of chords.

- G - D - Am: I - V - ii
- G - D - C: I - V - IV

Changing key

Lets say that your singer is more comfortable in a different key, or you just want to play the song in a different key for whatever reason. Then you can change the key of the song.

As an example, "Knockin' On Heaven's Door" will be changed to the D major key. By using the intervals that we've seen, and applying them to the D major key, we get a new sequence of chords.

- D - A - Em: I - V - ii
- D - A - G: I - V - IV

	W	W	H	W	W	W	H
1	2	3	4	5	6	7	8
I	ii	iii	IV	V	vi	vii ^o	
D	E	F#	G	A	B	C#	D

Table 5.12: D major scale with chords

5.3.3 Analyzing "Perfect - Ed Sheeran"

This song is in the key of Ab (Table 5.13). The reason that Ab is used instead of G# is because Ab uses more natural notes.

	W	W	H	W	W	W	H
1	2	3	4	5	6	7	8
I	ii	iii	IV	V	vi	vii ^o	
Ab	Bb	C	Db	Eb	F	G	Ab

Table 5.13: Ab major scale with chords

In the first verse of this song (shown in the previously) the following chord progression is used:

- Ab - Fm - Db - Eb: I - vi - IV - V

5.3.4 Deviating from the scale chords

Of course, the things described so far are a good starting point, but music is a creative endeavor after all. So feel free to experiment.

The song "Hey Ya!" from Outkast did that a bit as well. The song is in the key of G major. The chords sequence played through the whole song is:

- G - C - D - E

Strictly speaking this doesn't fit in the chords of the G major scale. You would expect an Em chord instead of an E (see Table 5.11).

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- [1] Bradford Werner (This is classical guitar). *Left Hand Position Lesson for Classical Guitar*. 2013. URL: <https://www.thisisclassicalguitar.com/left-hand-technique-and-position/>.
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Appendices

A Empty ukulele fretboard

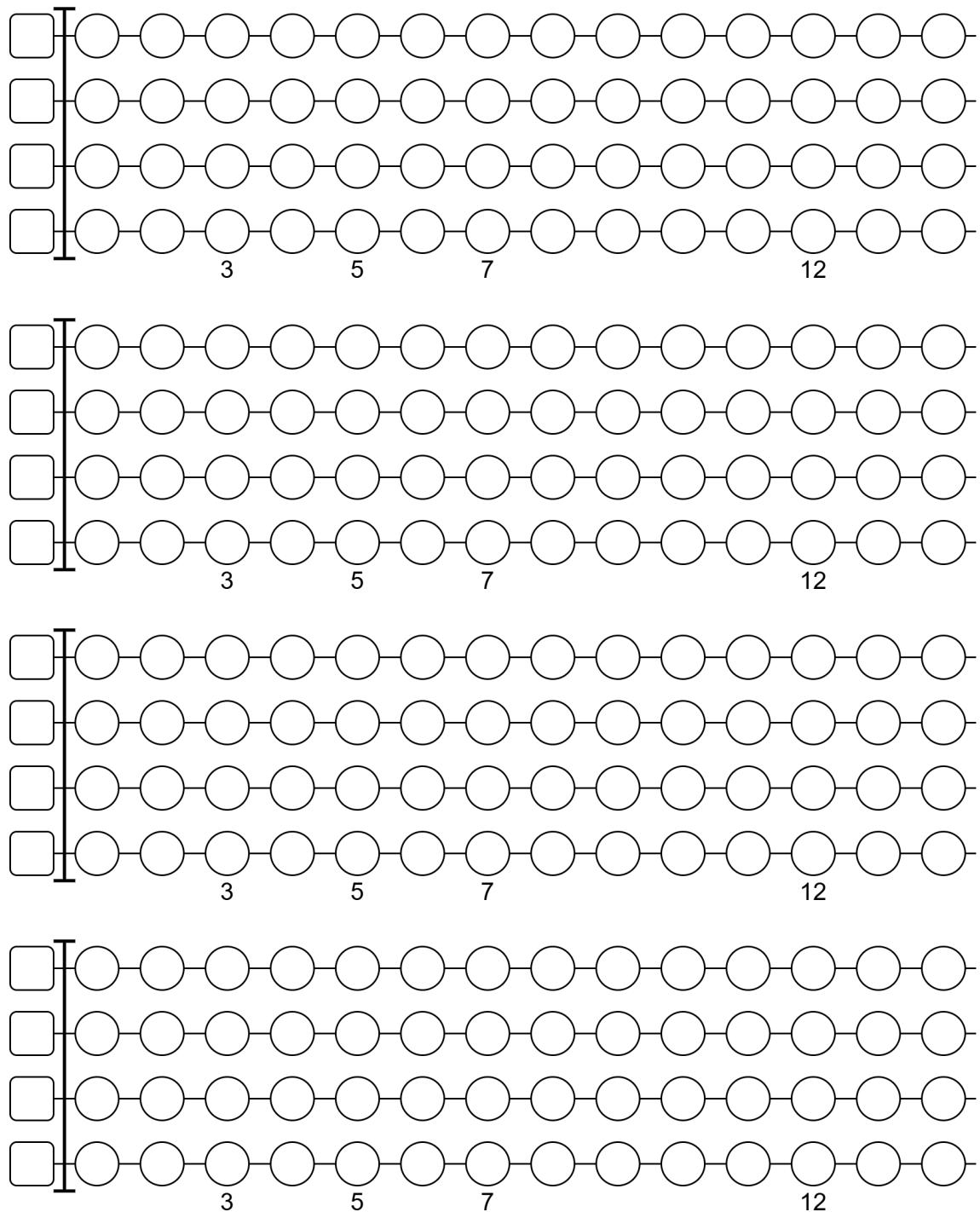


Figure A.1: Empty ukulele fretboard