ARTinoise

re.corder

Owner's Manual
1.0beta February 2021

re.corder   owner's manual

Table of Contents
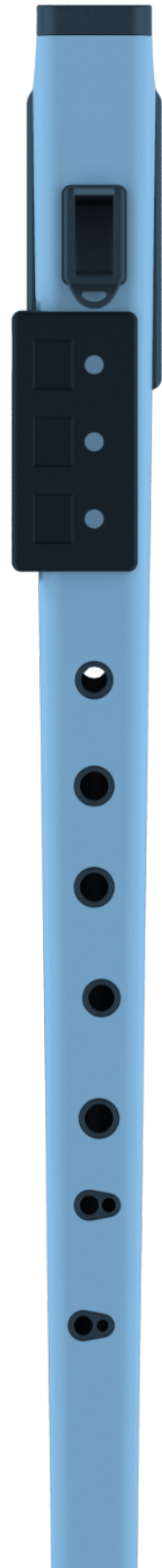
ARTinoise

Description

Congratulations for your new instrument! Artinoise re.corder is a traditional, acoustic soprano recorder which contains a cutting edge streamlined and connected electronic that can open up endless possibilities of playing and composing. You can play it many different modes, starting from the traditional one (acoustic) exactly like a standard soprano (descant) recorder, up to a endless possibilities digital musical instrument when you connect to our app. You can also use the re.corder to play virtual instruments on any BLE-MIDI compatible platform (MAC, PC, Linux). The following pictures describes the most important part of the instrument.
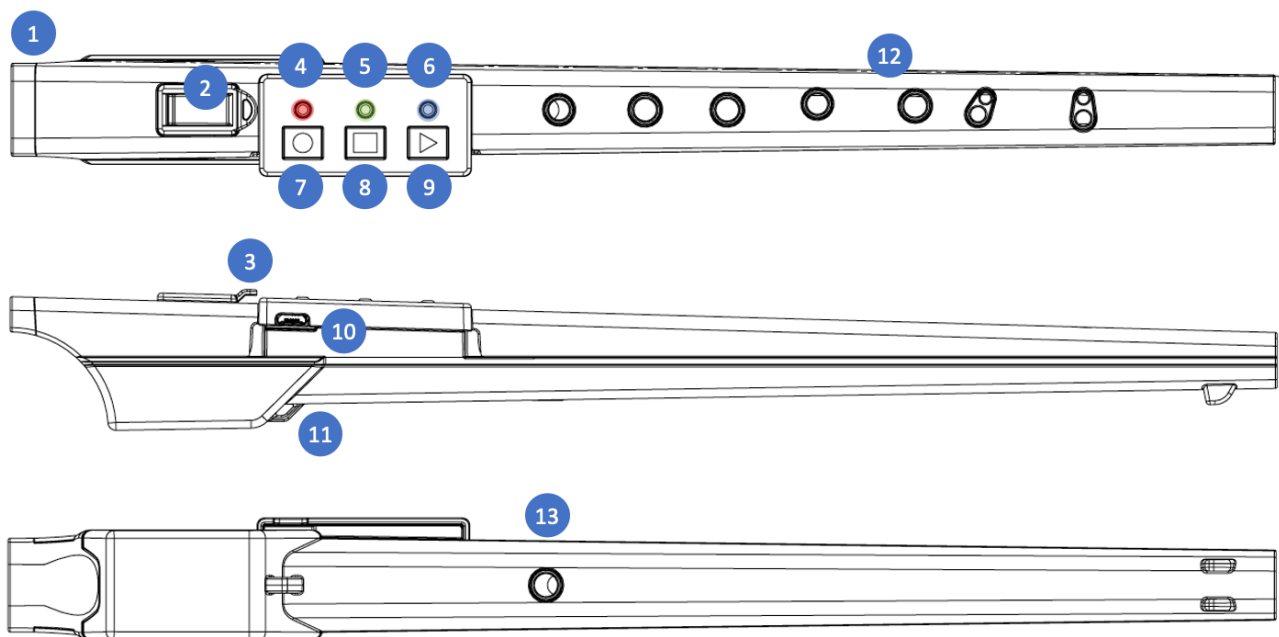
1 Mouthpiece, windway and lip sensor: The mouthpiece, also called embouchure, allows the player to breath into the instrument, generating notes and giving expression to the sound. The windway shapes the air flow to focus on the labium edge. The re.corder electronics detect the presence of your lips to allow continuous calibration and enabling its output. Inside

the windway there is also the heart of your musical expression, the sensor which detects your breath force.

2 Window and Labium: The window and the labium are the heart of the acoustic instrument, here the air starts to vibrate and create sounds which are then tuned by the player's fingers closing the tone holes.

3 Mute with strap ring: When the player wants to use the digital features and/or stopping emitting acoustic sounds, can put the mute into the window to divert the air flow outside of the recorder, making it silent. Obviously you can also play the acoustic and digital tones together! Feel free to experiment!

4 Red Led: Red led indicates the status of the recorder and the charging state of the battery: When the USB cable is connected to a power source (wall plug dc adapter, power bank or any USB port) the led stays ON until the battery is fully charged. In normal use the LED is turned off and starts to blink when the battery is close to exhaustion and it's time to charge it again.

5 Green Led: The green led has different functions depending on the mode of use of the recorder. In general every command that you input with the three buttons will be acknowledged/confirmed by a fast blink of the Green Led.

6 Blue Led: The blue led indicates the status of the wireless connection. When a mobile device or a computer is connected, this led remain solid. Otherwise the LED will blink when the re.corder is turned ON.

7 Circle button: Circle button has the main function of turning on and off the recorder, pair with the device/host and other minor functions, like arming/recording a track in the looper section of the app. To turn on (exiting from stand-by) the re.corder press the CIRCLE button for at least two seconds. The BLUE led will start blinking to indicate that the re.corder is ready for a connection. IMPORTANT NOTE: After 2 minutes of blinking

without connection the re.corder will re-enter the standby state to save power. To let the re.corder turn itself off you have to close the application or disconnect the re.corder from inside the CONFIGURATION/DEVICES page (see relevant chapter).

8 Square button: Square button works (when pushed while holding the CIRCLE button) as an OCTAVE UP button, a STOP button for the upcoming looper function and a few other mode-specific functions.

9 Triangle button: Triangle button works (when pushed while holding the CIRCLE one) as OCTAVE DOWN, PLAY looper tracks and other minor functions when in selected modes.

10 USB recharge port: This is where you plug the recharge cable to recharge the battery. This USB port does not support any communication.

11 Strap ring: You can put a strap to support your instrument and avoid falls, bumps and shocks.

12 Note holes: The classic baroque fingering tone holes. Please keep in mind that, differently from an acoustic recorder, when in digital mode you should avoid to rest your finger in the immediate vicinity of the hole. The sensors could detect the finger even if the hole is not intended to be close. Please see the "Good handling habits" chapter for more information.

13 Thumb hole: The hole which allows to change register/octave. This hole have two sensors to detect the half hole position to change register/octave.

The re.corder uses state of the art sensors and algorithms to understand the player action and react precisely and quickly to any pressure or touch operations. The re.corder also includes a 3D

accelerometer that is used to add expression and nuances to the sound.

The pressure sensor subsystem is capable of continuous self calibration, avoiding problems when sudden barometric pressure (due to weather or air conditioning, for example) changes could lead to modified response.

Good handling habits:

With respect to a standard acoustic recorder, the user should be aware of a couple of differences and observing some (very simple) rules to reach a full experience and create a successful physical bond with this musical instrument. The re.corder interprets the position of the fingers, the lips of the player, and the pressure inside the windway to decide when and which note to play. This happens hundreds of times per second and there are some ways to ease this interpretation and obtaining the maximum performance.

The first difference with an acoustic recorder is that the tone holes sensors are very sensitive and will detect your finger even when you don't fully close the corresponding hole. So, differently from a standard acoustic recorder, you cannot rest your fingers in the immediate vicinity of an open hole. This become an automatic gesture pretty soon and in the first hours of practice you will gain this habit. A distance of few millimeters will allow the instrument to consider the hole 'open'.

The second key point in good handling is that the player should be aware that, everytime she/he retracts her or his mouth/lips from the mouthpiece, the re.corder will recalibrate in exactly one second.
When the execution allows this very short pause, and/or when you feel a change in breath responsivity, just move away your lips from the mouthpiece. Again, try to make this become an automatic gesture so you will be sure that the response of the recorder will be always at its maximum capability!

One last point, the re.corder is a sophisticated electronic musical instrument and while sufficiently robust, it cannot be washed with water, handled roughly, used as a stick, and launched around (like some time a plastic recorder happens to be!). So treat it with care and avoid letting it fall, beating it on hard surfaces or using it as a saber…..

There are no user serviceable parts inside, the opening or tentative to open the re.corder will immediately void any warranty.
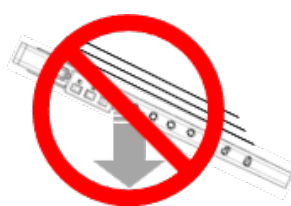
Quickstart

Congratulations! You are now the owner of an Artinoise re.corder, the revolutionary wind instrument that will change the way music is played and composed on the go. The following instructions will let you start enjoying the re.corder:

Important notice:

The re.corder is an electronic musical instrument, in no occasion you have to put it under water or heavy rain, leave it in high-temperature areas (i.e. car dashboard) or wash it with water or any other liquid. If your playing produces a lot of condensation or saliva, please avoid that spreading on the surface of the recorder. You can clean the surface (ABS plastic) with a soft cloth. For no reason you should insert any blunt object in the windway (there is the very sensitive pressure sensor), window, or any other aperture in the body. Avoid the proximity of strong magnets. Use the supplied lanyard to avoid the re.corder fall to the ground!

No water	No poking Inside	Avoid falls!	No strong magnets	Soft Cloth

STEP1. Charge the re.corder: connect the supplied USB cable with a PC/MAC or a USB wall adapter. Depending on the status of the battery, the re.corder will take a maximum of two hours to get

fully charged. The RED led will light up shortly after inserting the supplied USB cable. The LED will indicate that the battery is charging. When the LED turns off, the battery is fully charged.
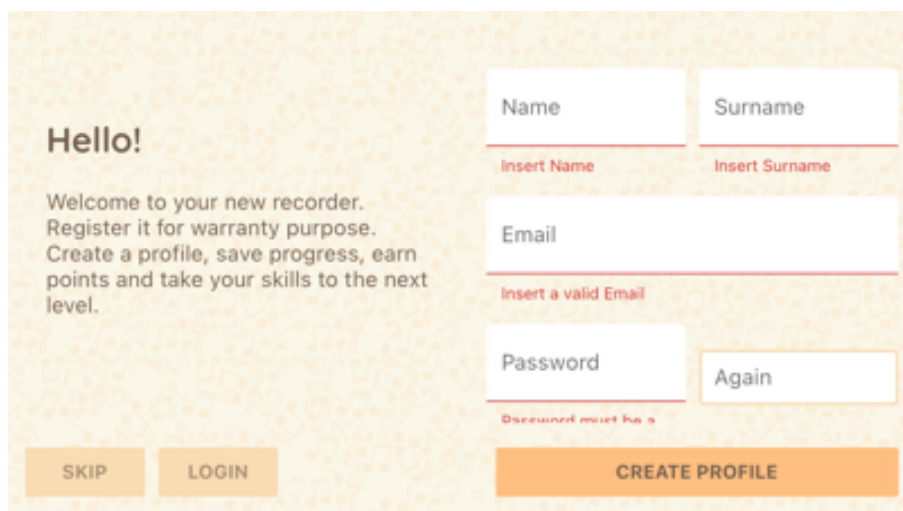

REDGREENBLUE
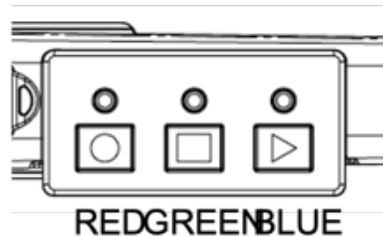
STEP2.While re.corder is recharging, insert the lanyard loops in the back ring (near the thumb hole) and the mute plug. This is important to avoid re.corder fall and loosing the mute plug. Check out the following picture to understand how to use the cord loop.


STEP3. Connection:
Start your app and register your data within the first few screens.

Consider that, in the current version, the registration is LOCAL to the smartphone/tablet so you have to repeat it on any of the devices you intend to use with the app.

Now, by pressing and holding the ROUND button for at least TWO seconds, you turn the re.corder on and ready for connection (BLUE led blinking). Press the connect button on the app and then START. You will see your recorder on the right of the screen:
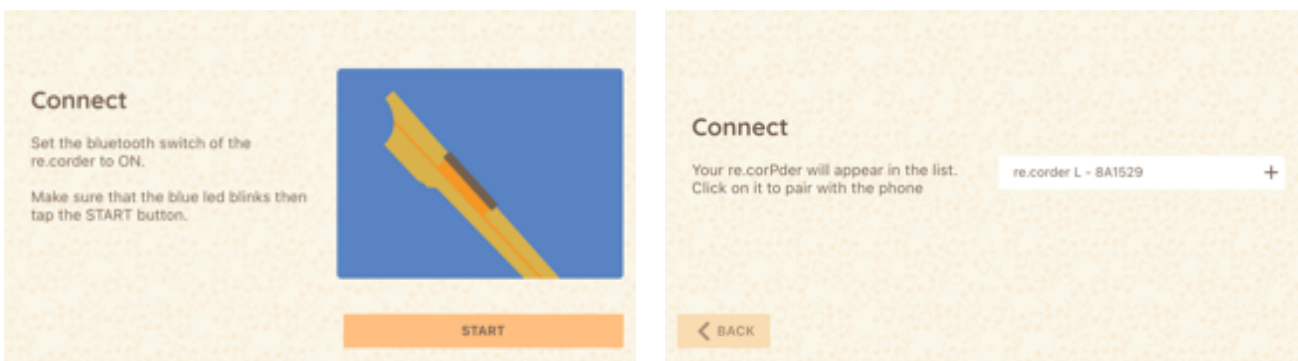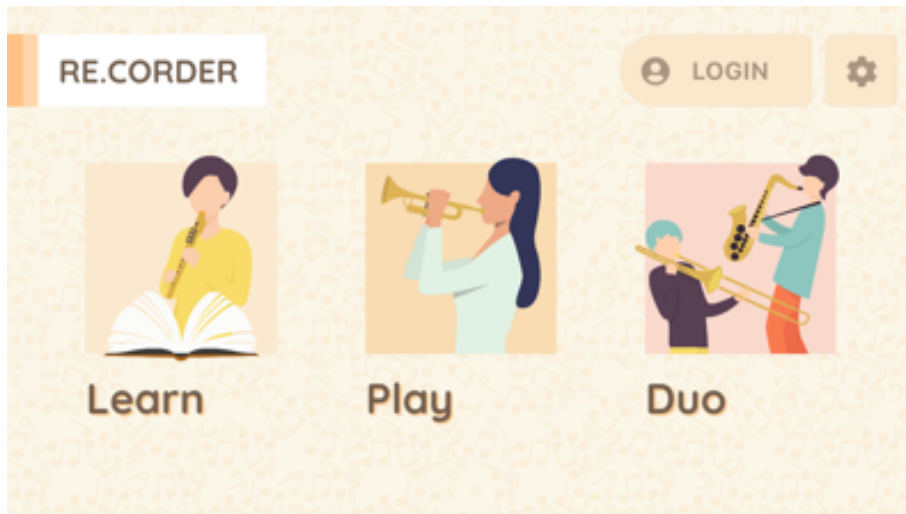

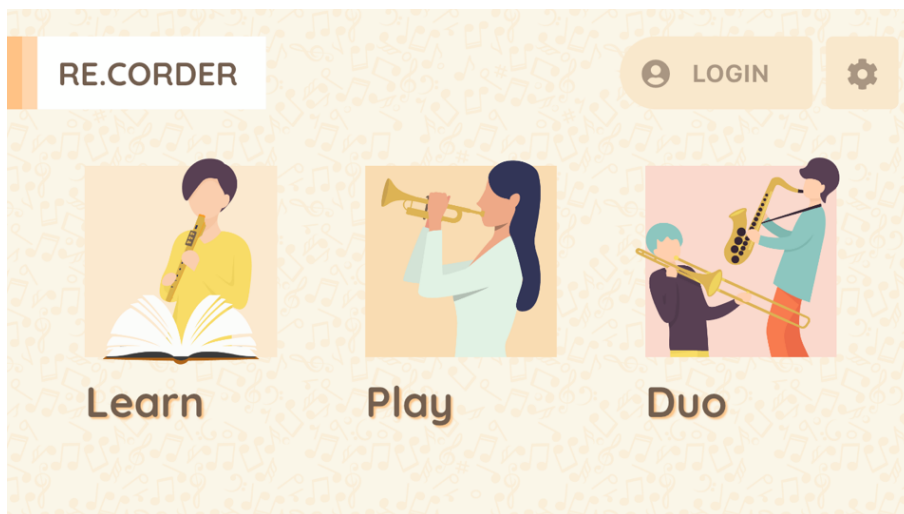Now <u>press and hold the ROUND button and then touch the recorder name on the list</u>.
The BLUE led will stop blinking and turn solid. Now you can release your finger from the ROUND button.
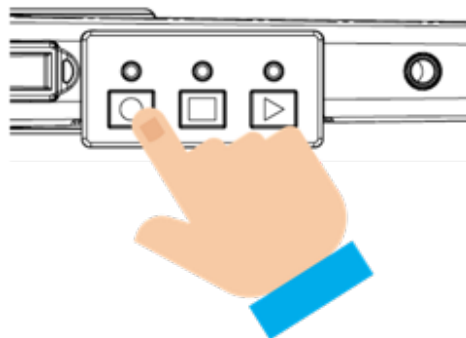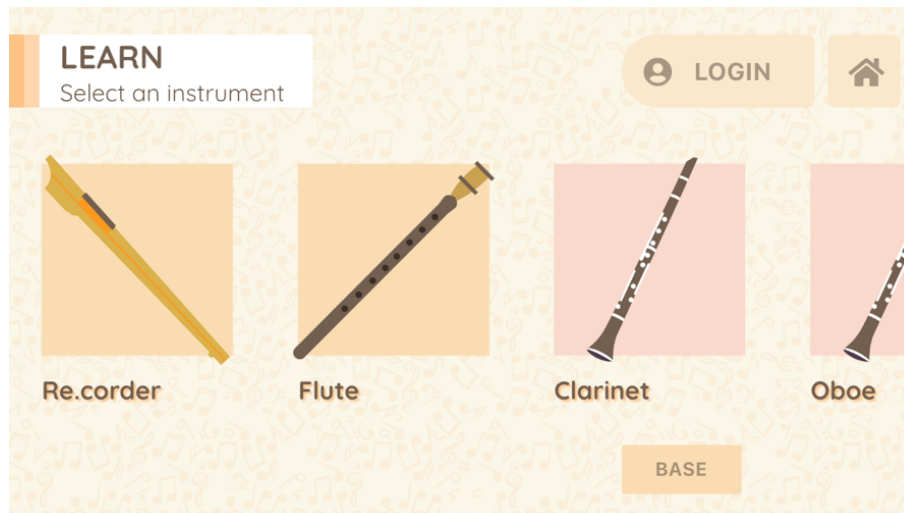

<u>Congratulations</u>! Now you can login and your recorder is ready to be played within the Artinoise APP!
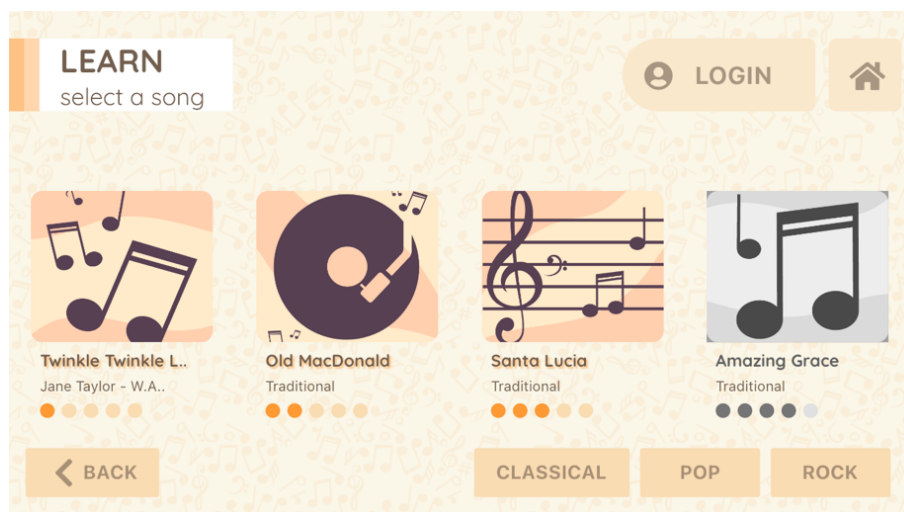
To start from scratch, try the Learn mode.

When you select the Learn mode, you are presented with the choice of instrument and then the song to start with.

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Keep in mind that to access all the songs, you have to rise your ranking by earning points!

Follow closely the notes on the score and check you score go up and unlock the next song! You can try several instruments!

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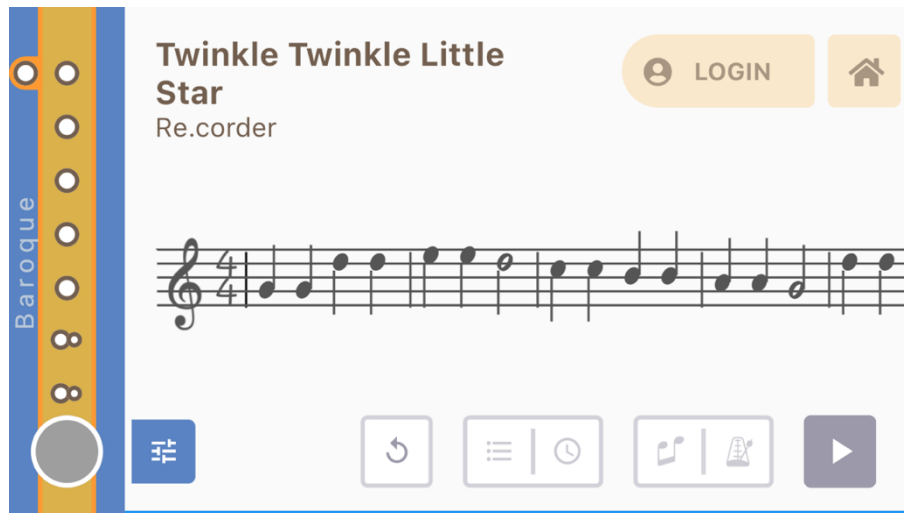
While you are playing you can also change the base octave of the re.corder and hear what a very low cello note can feel! (press together for a brief moment the CIRCLE and SQUARE buttons to go up an octave and CIRCLE and TRIANGLE buttons to go down. With the most part of the instruments, tilting the re.corder UP will impress a vibrato on the sound. Try this cool effect!

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re.corder   owner's manual

Using the re.corder with the app

- Checking and configuring the smart device
- Application startup and registration
- Main application screen
- The LEARN mode
- The PLAY mode
- The DUO mode
- configuration pages

Checking and Configuring the Smart Device

The recorder app is compatible with devices which have at least the following OSes installed:

-Android (smartphones, tablets): OREO (8.0) on Arm platform. It is possible to start and connect to the re.corder with a prior version but audio optimizations are implemented starting from this OS version.

-iOS (iPhone and iPad): iOS 10.0 and iOS devices with BLE support (starting from iPhone 6S and up and iPad 4th generations and iPad minis)

To connect with the re.corder, your device should have BLE (Bluetooth low energy, or Bluetooth Smart) capability. This is almost a default feature on devices manufactured later than 2016/2017.
You should turn Bluetooth communications ON on your device (please check the relevant user's manual). Some operating

systems asks also for positioning devices (i.e. GPS) to be turned ON to make the BLE work. Our app doesn't use positioning data but to have it working you probably have to turn ON this parameter. In some cases the app will try several time to download the soundbank a nd it won't complete the download. In those cases is necessary to allow the use of internal storage from the Android SETTINGS/CONFIGURATION panel.

Avoid using Bluetooth headphones or speakers with the re.corder app. The Bluetooth Audio transmission standard doesn't allow low latency audio. You will experience long delays between the production of a note and the audio that you hear! Use only wired connections to your headset or speaker. Many BT speakers comes with a standard 3,5mm jack audio input.

TECH: Performance Notes:

While under iOS the performance of the app (which needs realtime audio generation and processing, and low latency communication) is quite consistent through the entire range of Apple devices, Android presents a wider variations due to different hardware and driver implementations on different manufacturers and models.

In general, a newer device will perform better, but the optimal performance with relation to delay, sound quality and responsiveness of the instrument is not related to the price range of the device.

Check out this webpage to see how your device scores in the audio department:

https://ntrack.com/android-latency/devices

Application Start Up

After the first execution, the app will download the sound bank from our website. This will take up to a couple of minutes on very slow connections so check out the percentage counter on the top left corner of the screen. During this time the app will work but no sounds will be generated, so we ask you to wait for the download to end and then restart the application again. This double passage will be eliminated in following releases of the app!

After the splash and welcome screens, the first time you open the re.corder app, you will be presented with the connection page, asking you to bind the instrument with the app.
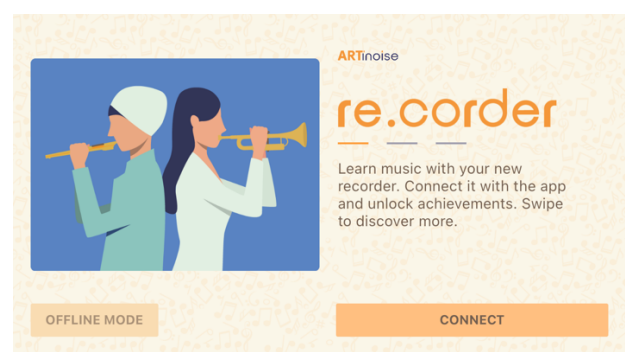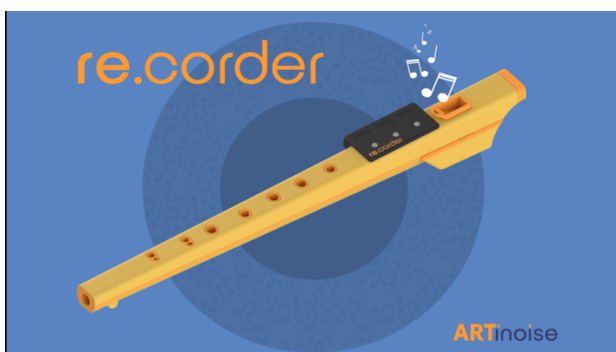
As already described in the QuickStart chapter, after having turned on the recorder, press the ROUND button and click on the name of the recorder that appears in the right part of the screen (see pic below)

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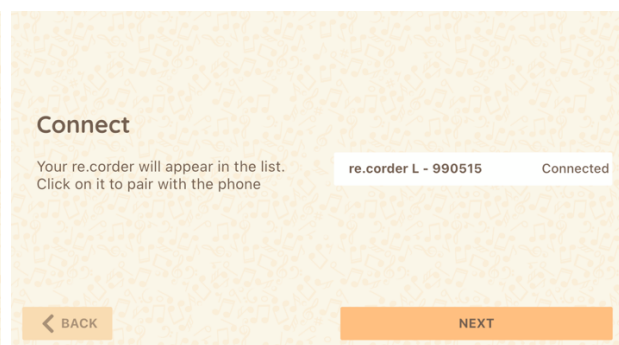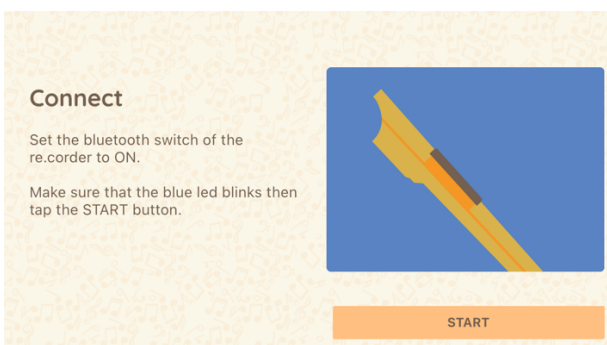
Now the app prompts you with the registration. This is mandatory for the warranty to take place and for having a user account on the app that will track your points, badges and advancements.

See the picture below for an example. Please input a valid email.

We suggest to check both 'Remember Me' and 'Stay logged in' boxes to jump directly to the app main screen the next time you start.

Now, after pressing the LOGIN button, you will be prompted with the main application screen. From here you can choose the activity, but before, let's see how to customize your profile. Click on the Player Icon on the upper right.
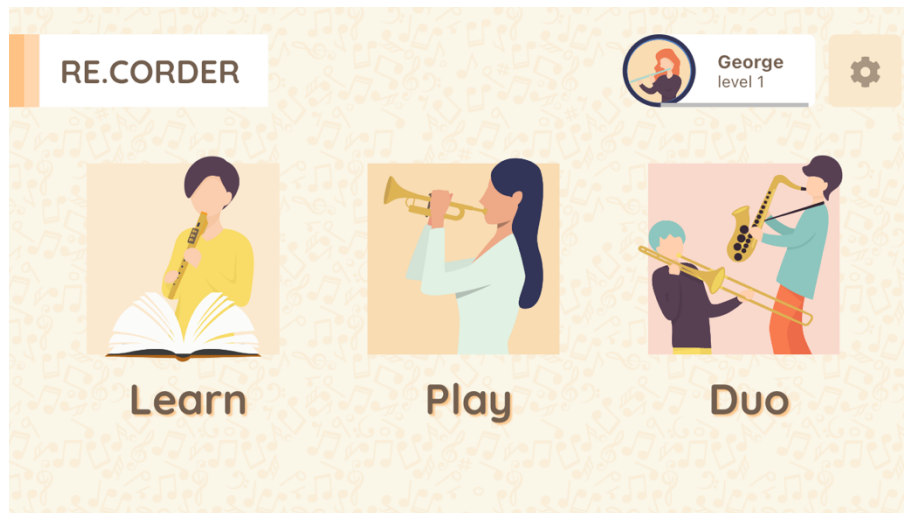
In your profile section, you can see a summary of your information and status. In the main PROFILE screen you see your email, you points and badges and, if you click on your picture, you can jump to a screen that allows you to take a picture of you, select a character or choose from your photo album.
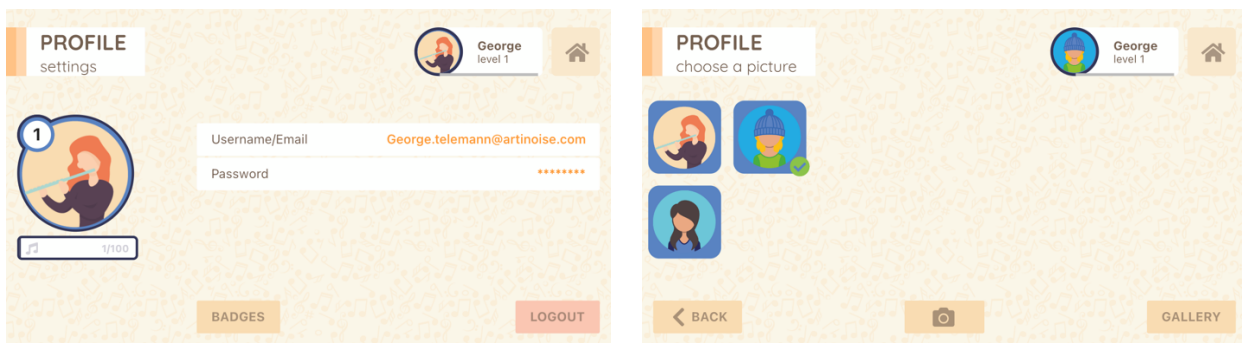
The operating system will ask for permission to use your camera or photo album, confirm this if you want to use this personalization function.

Main application screen:

This is the main operating window of the application, from here you can choose which way you want to play and, described in following chapters, how to customize your re.corder.

The LEARN mode:
Here you can start learning to play the recorder by approaching a series of increasing complexity musical scores that you need to learn to unlock the following one. The progresses you make rises your points and lets you earn some badges! This will also allow, in future versions, to compete with your friends or schoolmates in re.corder competitions all over the world!
The first thing you will see after clicking the Learn button is the instrument choice screen. Here you have a scrolling list of musical instruments to choose from. The default instrument sound is a mellow tenor recorder. You can choose not only between wind instrumenta, but also keyboard and even percussive ones! It's up to you to decide how to experiment with those!
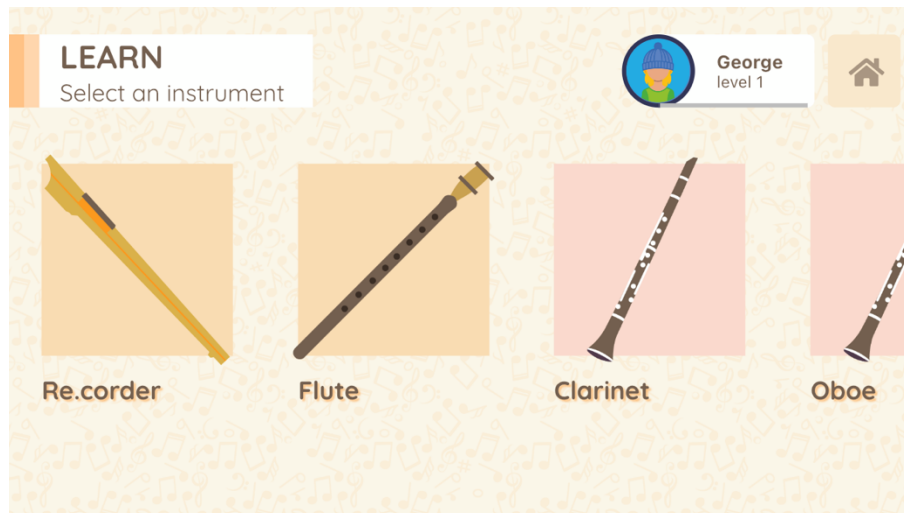
The instrument list will evolve and widen with subsequent app releases, giving you inspiration and great exploration grounds!

After choosing the instrument, the app presents you with the choice of the song:
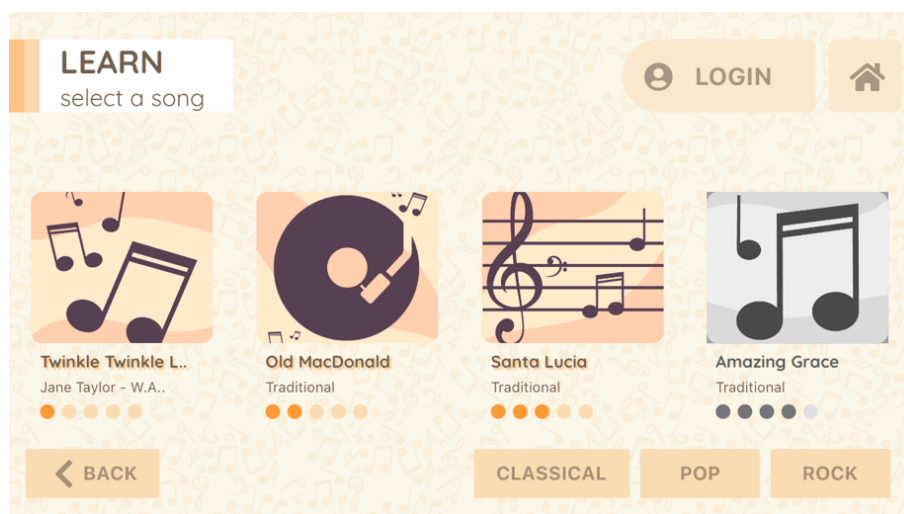
As already said, in LEARN mode you will have to earn points to unlock the next song, to allow you to learn to play the instrument little by little. If you reach some kind of outstanding performance you will also receive badges. Let them happen!

In the song window there are a few buttons that allows you to customize the tempo and even some audio effects that are applied to the sound you choose.

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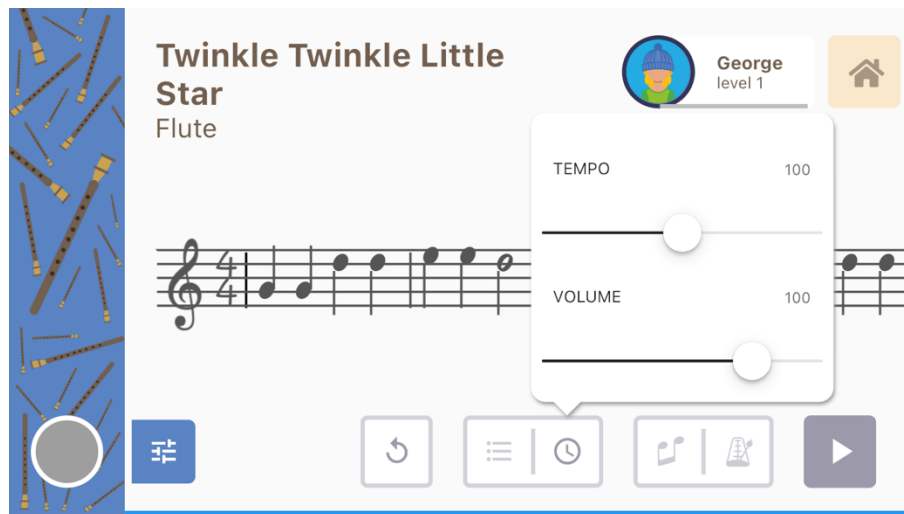
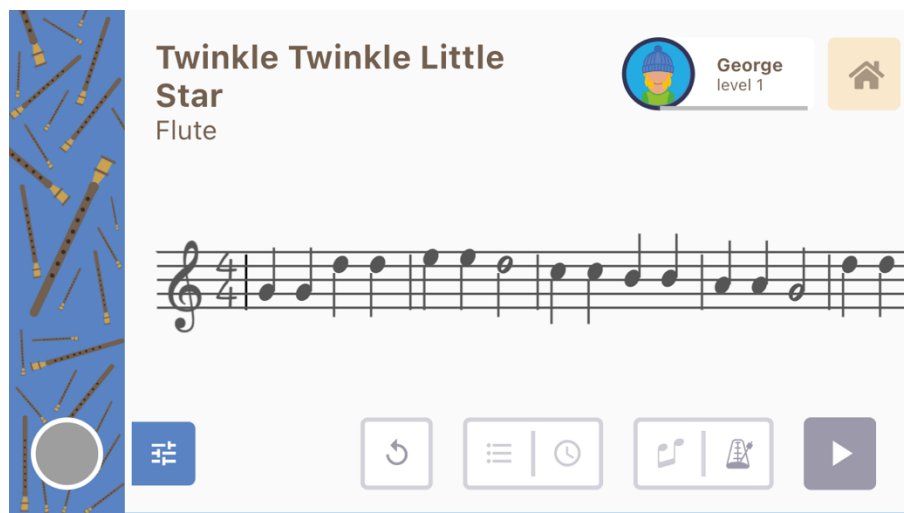Clicking on the watch button you can set the tempo of the song (in BPM) and the volume of the backing/accompaniment track You can also enable the metronome by pressing the metronome icon button (see picture below).

By clicking the sound configuration button (the letftmost one) you can change the volume and the effects of the instrument. You can add a reverberation effect to simulate a concert hall or a church. See the below picture.
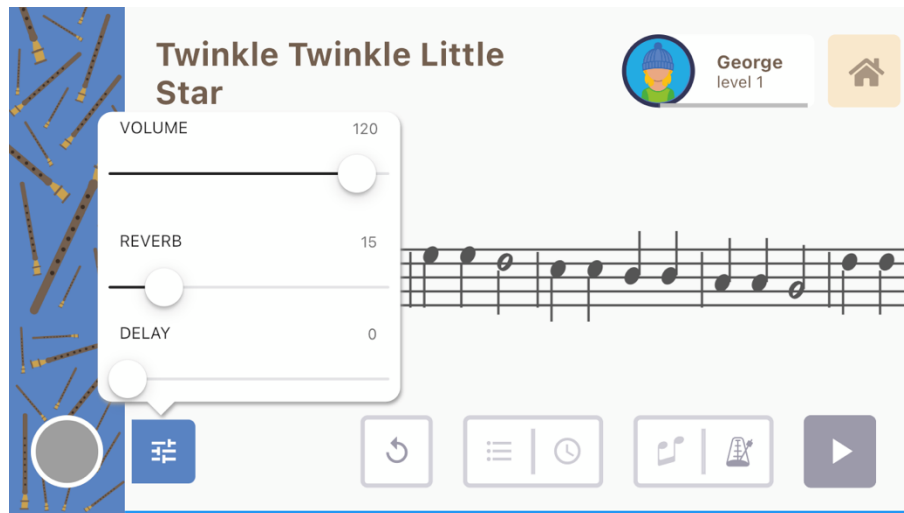
Now you can start exercising! When you press the PLAY button on the bottom right part of the screen, the song will start and you can hear the piano accompaniment and (if turned it on) the metronome. If you selected the re.corder instrument, on the left panel you can also see the actual fingering you are operating on the instrument in real time.
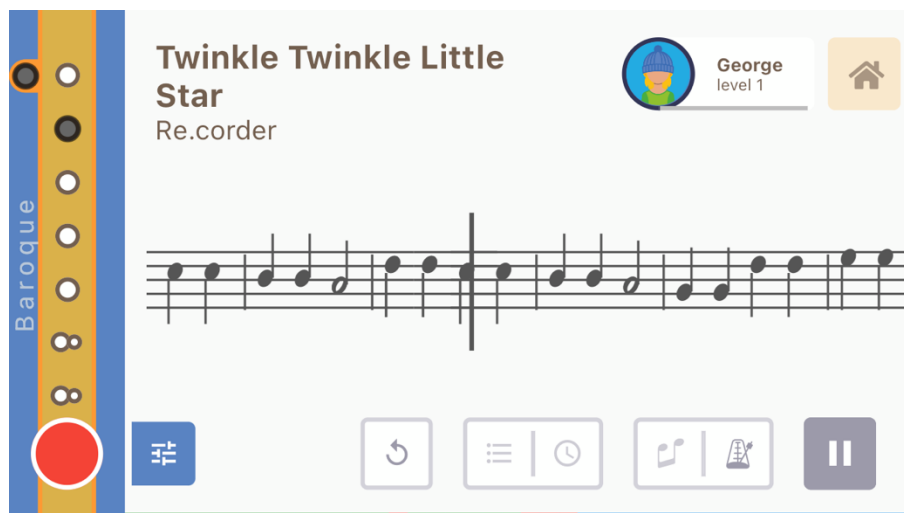
While you are playing following the score, the blue bar on the bottom of the screen indicates the good (green) and bad (red) notes you got. This is information is also visibile in the circle on the left part of the screen where the exact note you are playing is shown, in GREEN when it is the right one, in RED when It's not. When the song is finished, you will be presented with the

following screen, which tells you how good (or bad!!) you played the music.
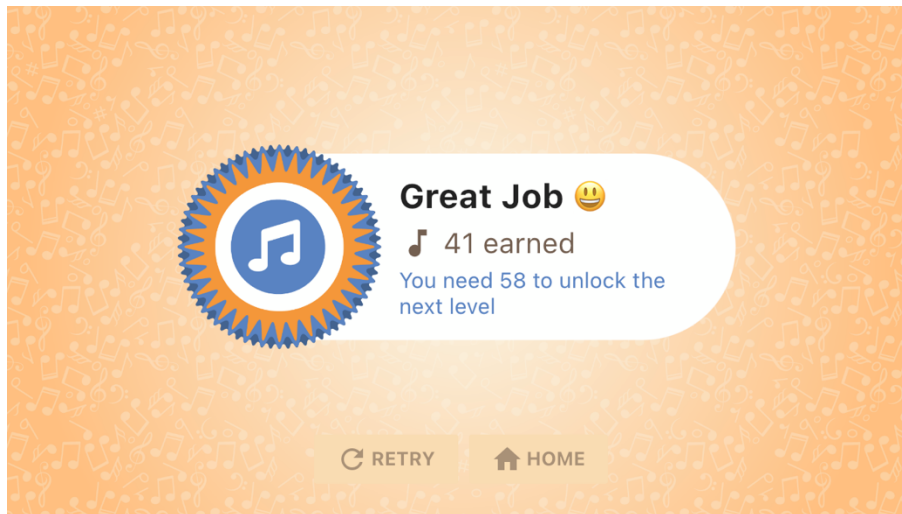
The final screen tells you also how many points you have and what are the remaining points that allows you to go to the next song.

The PLAY mode:

The re.corder app includes many songs, traditional, classic or pop, that can be played directly with the re.corder!
In the play mode you are free to play whatever song you want, following the score of the available song. The set of song will grow as new versions of the app come out.
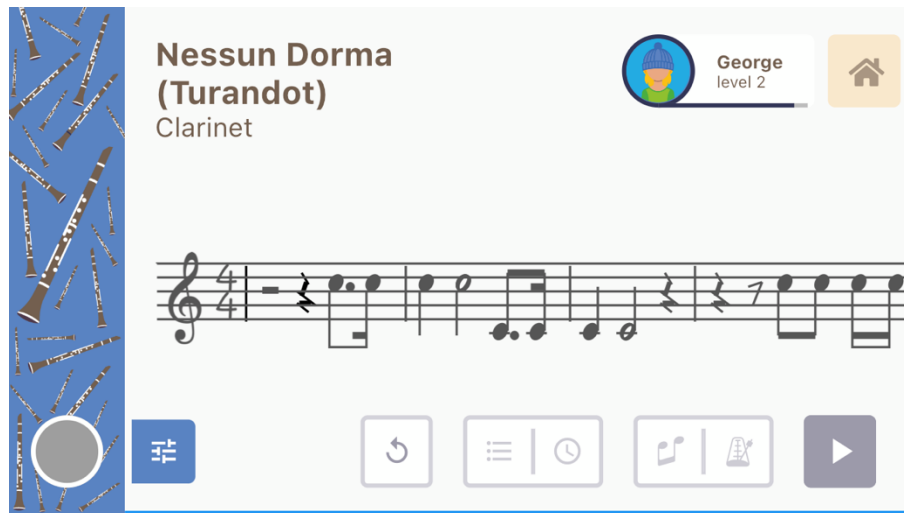
The PLAY mode is extremely similar to the LEARN mode, with the notable exception that all the songs are ready to be played without any particular order. In the same way as the LEARN mode, your playing will be evaluated and points will be added to your overall score.

Power TIP: The re.corder app runs also in the background, this means that, after setting up the instrument, you can switch to other applications, like Youtube and play along the music from the videos!!!! This mode is CPU intensive so the overall audio quality may vary depending on the performance of your smartphone/tablet.

The DUO mode:

The DUO mode allows to add a friend with its re.corder and play together on a single smartphone or tablet, with different instrument sounds!! Press the DUO icon to start!

You will see the following screen appear:
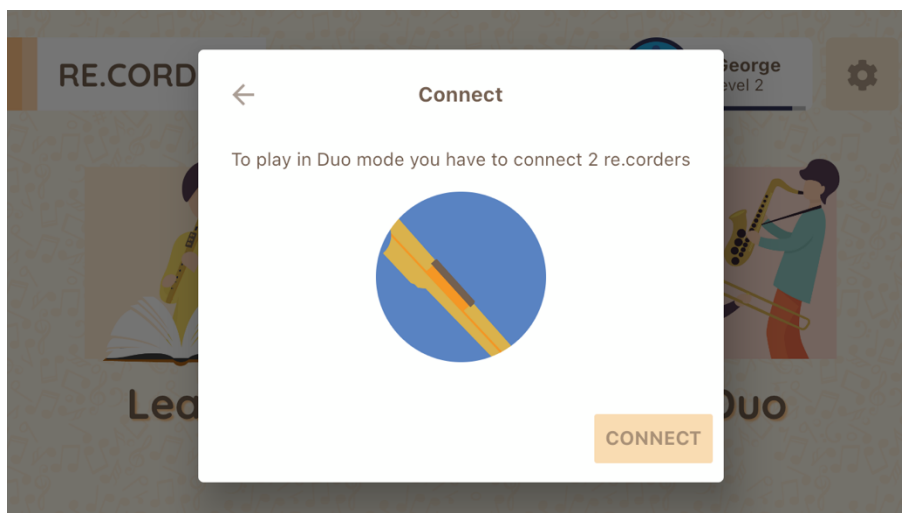
After pressing the 'CONNECT' button you will see the codename of your friend's re.corder on the list, connect with it exactly with the same procedure of your instrument: Press the ROUND button while clicking the name of the recorder, then release the ROUND button when the BLUE led stays ON.

Now the app allows you to create a new user: the following pictures shows how to do that:

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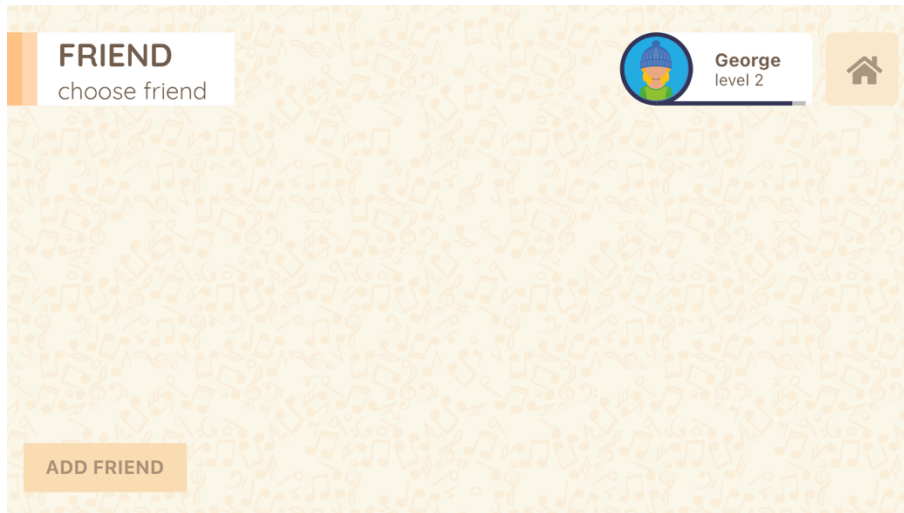
In the page shown above, press ADD FRIEND, the app will ask you to enter its name and choose a picture. We take on board Johann Sebastian Bach himself!
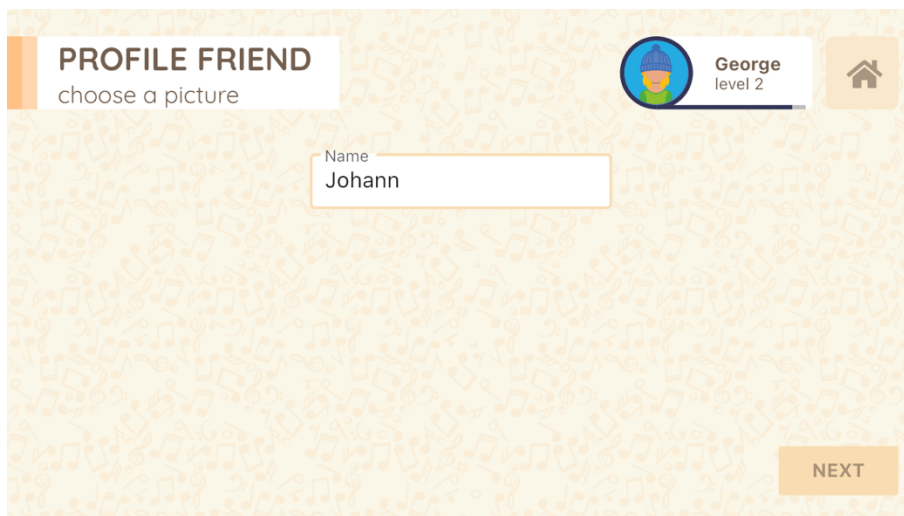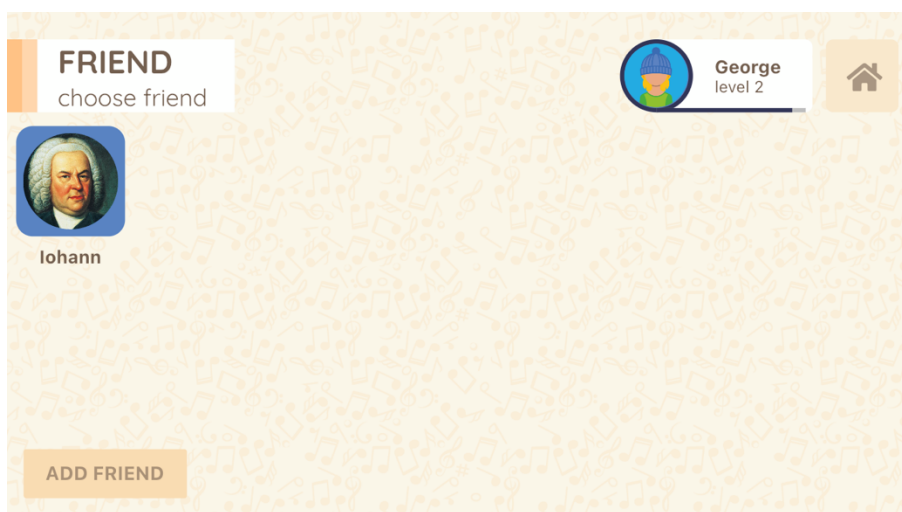
After the creation of your friend's profile, you can click on its profile picture and the app will show you the instrument section: Now you can choose (and try) the instrument for you and your friend, you can obviously choose also the same instrument if y ou want to do, for example, a Cello duet.
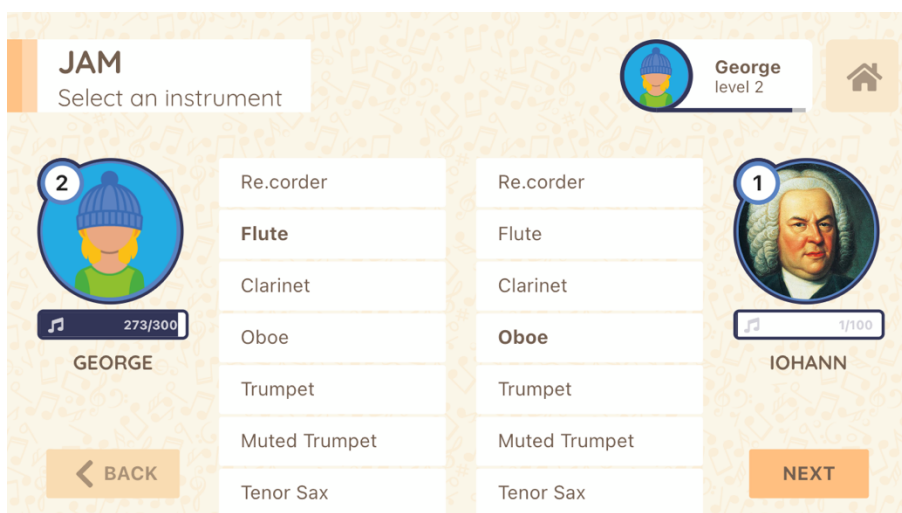
After this setup phase you can simply start playing in JAM mode (no song, you see the score being populated with notes as you go), AGAINST and TOGETHER, where you have to follow the score to battle for points with or against your friend! Experiment with this mode, where you have some songs with music score for a duet!

The CONFIGURATION page

You can access the configuration menu by clicking on the COG icon (upper right corner) while you are in the HOME menu. The first important information that you see on the page is the release version. We suggest that you turn on automatic updates for the application. In any other case, check frequently the version you have installed against the last one available on Apple Store, Play Store or AppGallery.

The configuration menu includes items for both the re.corder and the app itself. You can see its divided in four main tabs: General, Midi, Fingering and Devices.
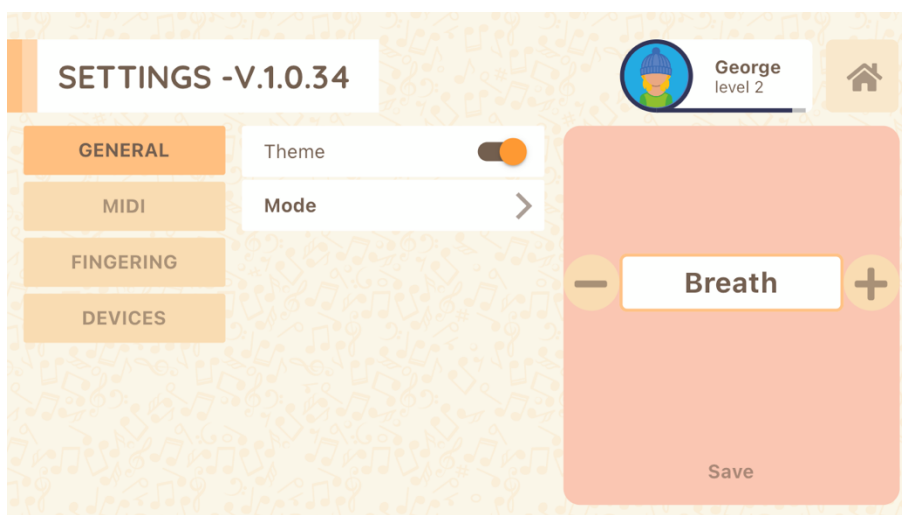
The first tab (**GENERAL**) allows you to choose the theme and the playing mode. The app includes two themes (skins) from which you can choose the one that suits your taste!

The second tab sets the overall mode of working of the instruments, you can choose between:

- BREATH: the note is generated (in presence of a correct fingering configuration) when you breath in the mouthpiece, exactly like a traditional instrument. This is the DEFAULT choice of the re.corder.

- LIP SENSOR: the note is generated (when a correct fingering is set) everytime you put your mouth and lips on the mouthpiece. This allows several features like 'continuous playing', drones, and an aid to reduced lung capacity individuals that still wants to play an wind instrument!

- KEYBOARD: in this mode, your recorder becomes a POLYPHONIC midi controller, which can be used as a keyboard or a percussion pad controller! Set the relevant fingering (see in the next paragraphs) according to the instrument you want to play. Experiment with the major, minor and drum fingerings with the DRUM soundbank and create a BAND with your friends!

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To ENABLE a MODE on the re.corder, you need to keep the CIRCLE button pressed on the recorder panel before pressing the SEND button on the screen.

In the second tab, named **MIDI**, you can configure many parameters. Keep in mind that, for a basic use of the re.corder with the app, you won't need to change many parameters. This section of the app, on the other hand, is particularly useful when you want or need to use the re.corder as a standard midi wind controller with every other software and VSTs.
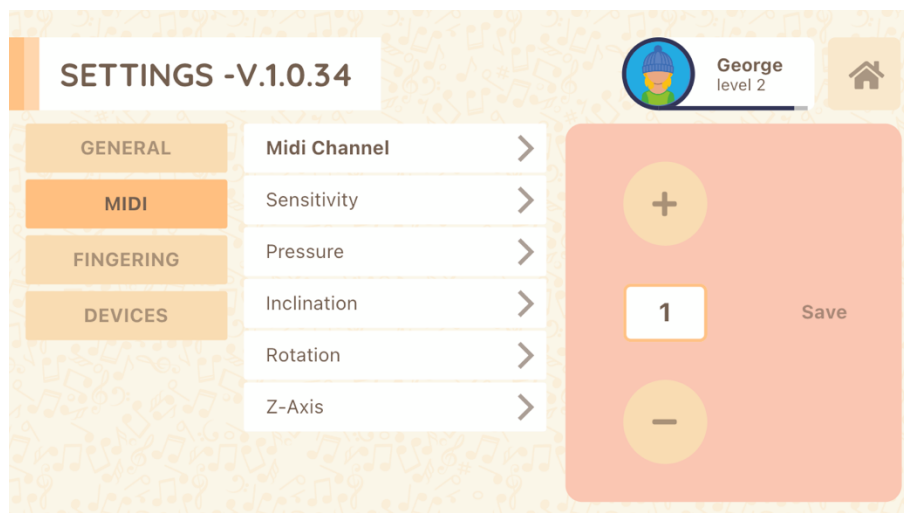

- MIDI CHANNEL: You can change the MIDI CHANNEL if you need to connect to non-flexible external hosts (old programs on PC/MAC, etc..). For the usage with the app and the majority of third-party applications, you don't need to modify this. We strongly suggest to avoid tinkering with this parameter!!

- SENSITIVITY: This menu allows you to change the way the re.corder reacts to your breath. Mainly you can modify the Threshold, to allow for three different 'forces' or 'hardness'. We suggest to use the default that is a good compromise between a recorder and other wind instruments. For musician already playing instruments like saxophones or clarinets, used to put more force in their breath, it's possible to select a High threshold. On the contrary, if you want to have a softer starting pressure, try the 'low' threshold. You can then select the VELOCITY, that is the MIDI parameter that tells the sound generator how 'hard' you hit the key of the piano keyboard or you did the initial blow on the mouthpiece. We suggest to use a fixed velocity around 80 or 90. You can raise or lower this parameter to hear the modifications in the sound. Keep in mind that the overall 'intensity' or 'volume' of the sound is directly linked to this parameter. If you select a very high velocity you will have a higher volume sound BUT you will loose a part of the expression range when you modulate your breath pressure! There is also an AUTO mode (set the velocity to 0 - ZERO) which manages to detect the initial pressure transient and

sets the velocity dynamically. This is quite complex to calculate because the processor has basically very little time to detect the initial pressure without introducing some kind of delay in the MIDI message! The consistency of the AUTO setting may or may not satisfy the player! Give it a try!!! You just have to press the SEND button to configure the re.corder.
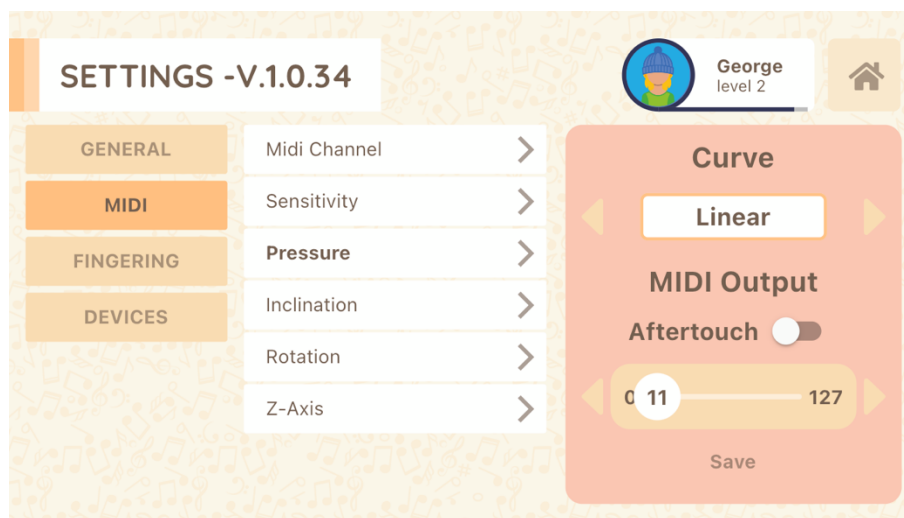
- PRESSURE: This is where you choose the curve which generates the MIDI message that is used to use the dynamic pressure that you are using during your playing. There are many different curves (a complete version with curve pictures of this manual will come soon) which adapts to different playing style and response expectation. We suggest to keep the linear one because is, possibly, the most natural for many recorder player. In the lower part of the widget you can decide WHERE to send this information. The re.corder app responds to pressure through the CC#11 (EXPRESSION). If you want to change the CC number or sending the pressure information to the Channel Aftertouch MIDI message, you can do it here! Also in this case, to transfer the config to the re.corder, just press SEND.

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- INCLINATION, ROTATION, Z-AXIS:
  This is the place where you setup the MIDI messages regarding the response to internal accelerometer. In the re.corder app only the INCLINATION is used, as a MODWHEEL midi message, which is then interpreted as a VIBRATO command. We suggest to keep the curve and CC numbers as is. Regarding ROTATION and Z-AXIS you can choose the same attributes. Remember that, if you DON'T want to send out the MIDI messages, you have to select NONE as the curve. As default, the Z-AXIS is disabled while the ROTATION is sent to MIDI CC# 52. Also in this case, to send the config to the re.corder, just press the SEND button.

The third tab, **FINGERING**, is where you can select and customize the fingering of the re.corder.

The DEFAULT fingering is an extended baroque/german hybrid, invented by Prof. Marco Agostinelli, wich includes THREE full octaves of range, letting the user playing scores made for basically any wind instruments without having to adapt to the

recorder. The first two octaves are the same as a standard BAROQUE (but also with GERMAN variation) recorder. Please take your time to explore the fingering because it has MANY alternate fingering for several notes, allowing fast trills and note passages and jumps! You can see this by going up and down with the + and − button. If you have the Lightning edition of the re.corder, you will see the selected configuration LIGHT UP on the tone holes of your instruments!!!!

The small blue circle at the upper right corner of the fingering window contains the number of variations for that particular note. You can navigate the variations with the right and left arrows. Some notes have up to 4 alternate fingering!

If you want to create a custom fingering, select the CUSTOM and make the adjustments you want! You can change the fingering just by touching the holes, which will toggle between closed, open and half closed (for the C,D and the thumb hole). The CUSTOM fingering starts out as an exact copy of the BAROQUE fingering.

The three KEYBOARD fingering are an initial example of KEYBOARD MODE dedicated fingering. We have included a Major and a Minor scale. Remember that in this mode the C# and D# holes are regarded as individual notes! And, most importantly, the KAYBOARD mode is POLYPHONIC. We also included a DRUM map for the KEYBOARD mode which allows you to play the most used drum pieces in the classic STANDARD DRUM soundset. Have fun by selecting KEYBOARD mode, then DRUM fingering and then STANDARD DRUM in PLAY mode!!! When you press on the recorder figure on the right, you will be prompted with this window:
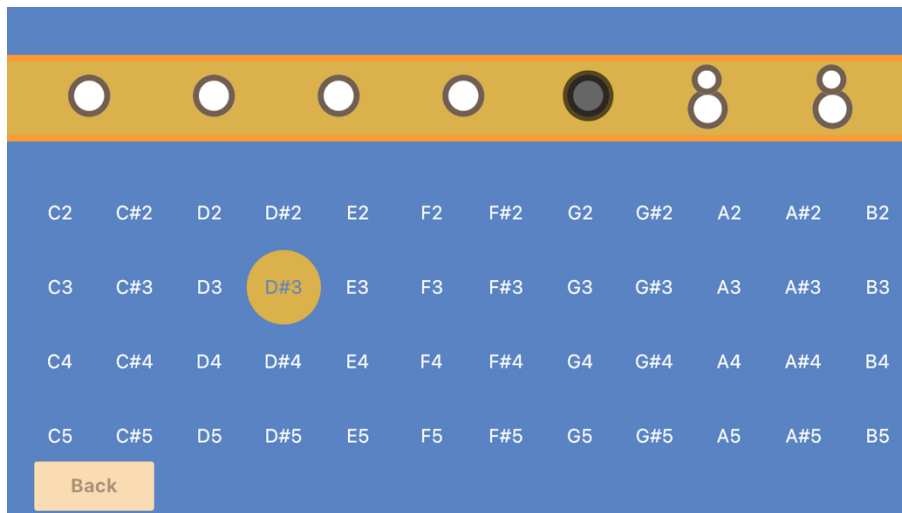
From here, you can choose also very sparse and distant notes, spanning the whole MIDI range (10 octaves). This is particularly useful to play the DRUM sounds. By pressing on the tone holes you will see the highlighted MIDI note, which you can change suiting your needs.

You can then upload the fingering to the re.corder by pressing the SEND button.

The fourth tab, **DEVICES**, allows you to connect or disconnect the re.corder without having to start the app again and do it in the first CONNECT screen.

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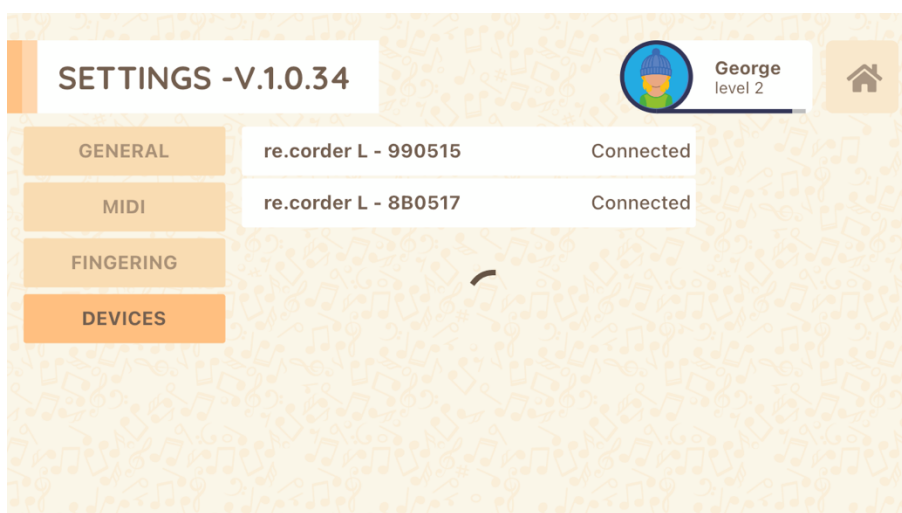
The usage is very simple, to connect to a recorder, after turned it on, and pressing the CIRCLE button while you touch the re.corder codename. To disconnect, just touch on the recorder codename (that, when connected, is displayed in BOLD character.

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re.corder   owner's manual

Certification statements, markings and Patents

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