

## Project description



Nowadays, more and more people start to learn music by themselves. However, without music classes, they don't learn how to read a score. Therefore, they only learn how to read tablatures or only play by ear. This lack of knowledge often blocks those people or narrows the number of pieces of music that they can play. Some apps offer to learn the basics but they are incomplete. They are limited in content. So we imagined a mobile app that can teach all the basics of music.

This project called Sonn'ata aims to help the people that want to start the music and to follow them during their apprenticeship. Given the current context, we offer to teach the basics that allow people to read a score as well as some training to improve their listening skills (music notes and rhythm). Even at the end of their formation, our app will still be useful to practice the knowledge learned by the user.

To reach this goal, the user could practice music in three distinct categories: *Lecture de notes*, *Dictée de notes*, and *Rythme*. Each category contains classes to explain the concepts of the category. In the first category, *Lecture de notes*, the user will learn to recognize a note on a score. On one hand, the class will allow him to know at which line corresponds to a note, and then he will be able to read an entire score. On the other hand, the training will allow him to test his new skills in a limited time exercise. He chooses the difficulty level and the game begins. A music note is shown on the screen and multiple propositions are given, the player will have to choose the right one. To have a better score, he needs to recognize the maximum of music notes in the given time.

In the second category, *Dictée de notes*, the user will be able to train his musical ear. Develop a musical ear is vital to recognize music notes when they are played. It allows the musician to replicate a melody just by ear and to know if his instrument is in tune or not. To help the user, the class is composed of a library of music notes that he can listen to as much as he wants in order to memorize them. The training lets the user practice this new knowledge. The phone emits a sound from the sound library and the user has to choose the music note that he thinks he heard among the given propositions. If he did not hear the sound or is not sure of his choice, the user can press a button that replays the music note.

The last capacity that our new musician has to learn is the rhythm. In this category, the class sums up all the notations linked to the reading of rhythm. The rhythm is an important part of the music and it is necessary to listen to it to grasp its concept. We added explications and sounds of major rhythms. This time, two types of exercise are accessible: the first one is based on the recognition of rhythm, the second one trains to gain a stable beat. To train rhythm recognition, the app plays a series of three random rhythms selected among our library of rhythms. Then, the user has to replay the sequence with the buttons at his disposal. Differentiate rhythms can be hard as a beginner, so the user can

choose a level of difficulty. The second exercise trains the user to stay in rhythm. When the user will create music, it is essential to keep the pace of the music. To do that, the user will have to push a button in rhythm. He also can change the speed with a cursor.

When the user thinks he is ready to play an instrument, our application is still useful. We created a mini-piano that can play the 88 notes of a piano keyboard. When he will push one of the keys of the piano, the app will emit the sound and the name corresponding to the music note. It helps the user to memorize the place of each key on a piano. It will help him when he will play on a real piano. It also allows him to have a piano on him at any time. We also created a metronome, a useful tool for any musician.

The training in the app only covers the basics of music. When the user has mastered them, it will be easier for him to tackle the other concepts of music. We implemented additional courses that can enlarge the knowledge of the user. He can learn more about accidentals, major second, bar, rests, dynamics, tempi, tempo variations, articulations, and covers.

At last, every music note that can be heard in the app is made by our group. We created each sound to imitate as closely as possible a real piano. It makes the app more attractive. We also take care of our design. Our app is designed to be pleasant to use and encourage the user in its apprenticeship.