Forms WWDC24

Tell us about the features and technologies you used

The main feature of my Playground App is a tool to practice polyrhythm intuitively, while allowing users to customize the desired speed and rhythms. With that in mind, my first choice to achieve this goal was to use SwiftUI. Fortunately, I found all the resources I needed within this framework to make the idea successful.

To generate the polygons needed for the tool, I used a mathematical formula that creates a Shape based on the number of sides passed as a parameter. Along with the polygons, there is a circle that loops around them based on a Timer created at the moment the user starts playing. Timers were also used in other parts of the project, especially to play sounds at the appropriate moments. During development, I noticed some delay when practicing with high BPM's, probably because of the numerous calculations performed in a short time.

The introduction of the app consists in a set of images related to the text created using the collage technique, which consists of the combination of many different elements. To perform this, I gathered some public domain images and cut them in Figma. All transitions and animations were brought to life by using withAnimation.

Beyond the Swift Student Challenge

> If you've used your coding skills to support your community or an organization in your area, let us know.

Since I was a child, I have always loved sharing what I learned with others. When I started studying Computer Science, I discovered that my passion extended to the field of programming and computing. In the last two years, I have learned a lot about these subjects, and I enjoy helping my classmates when they get lost in the midst of codes and algorithms. It is very rewarding to see their progress and know that I contributed to their success.

In the last Swift Student Challenge, I submitted another music app, which explained many basic music concepts through user interaction. After submitting, I showed the app to my former music teacher and he ended up using it to teach his children students, which made me feel very proud for developing something actually useful.

During college, I also developed a simple game in C, which was used at the career fair to encourage high school students to choose Computer Science for their future studies. It was really cool to have showcased one of my projects and know that other people may have been inspired and chosen to follow the same path as me because of it.

Apps on the App Store (optional)

> If you have one or more apps on the App Store created entirely by you as an individual, tell us about them. This won‘t influence the judging process.

I have an app on the App Store created entirely by me called GymQuiz, which is basically a small quiz about gym exercises. The gym became a part of my life two years ago when I started adopting a healthier routine, and since then, it has become a topic of interest for creating apps. This quiz was one of my first experiences using SwiftUI, and many of the concepts I learned while creating this app have been reused in the project I am submitting.

Recently, I also began developing an app for the Apple Watch that automatically detects when you finish a set of an exercise in the gym and starts a timer with the desired rest time. Making it precise has been incredibly challenging, but it's one of my coding projects that I'm most engaged at right now.

Comments (optional)

> Is there anything else you‘d like us to know?

The idea of my app came all of a sudden during my piano studies. My piano journey began in 2019 when I received the instrument and decided to start learning. Since then, I've developed a keen interest in classical music, particularly from the Romantic period. Polyrhythm is a prevalent concept from this era, especially in the works of Chopin, one of my favorite composers. The piece I'm learning right now features polyrhythms everywhere. I have been struggling a lot to learn it and that's where the idea for creating a tool to practice polyrhythms originated.

In addition to providing a means to practice polyrhythm, my app should explain the concept. To achieve this, I turned to another interest of mine – birds. This interest arose through my brother, who is a geographer and photographer. Interestingly, the bird photos used in the project were taken by him. At the same time, I took the opportunity to shed some light on the Atlantic Forest, the biome where I live. Today, only 24% of the original forest remains. As the forest was gradually devastated, species that existed exclusively here slowly disappeared, including various birds for which there are few records nowadays.