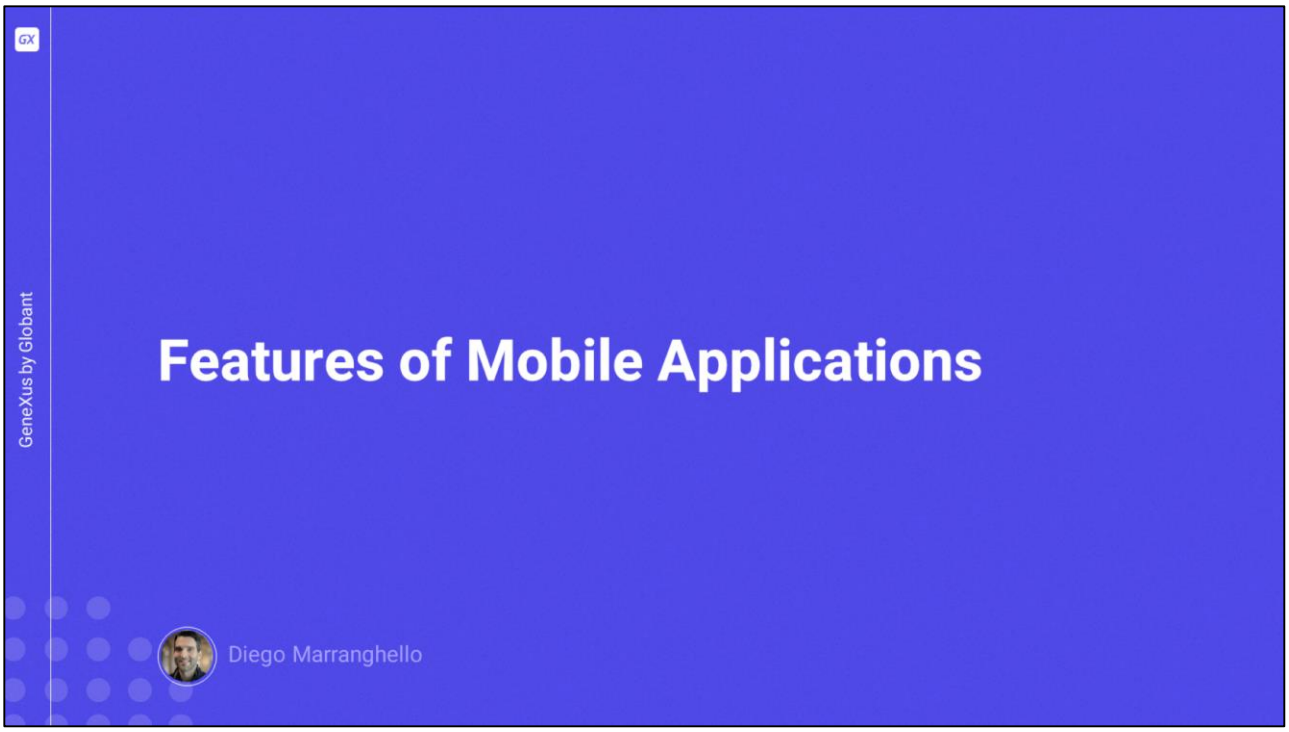
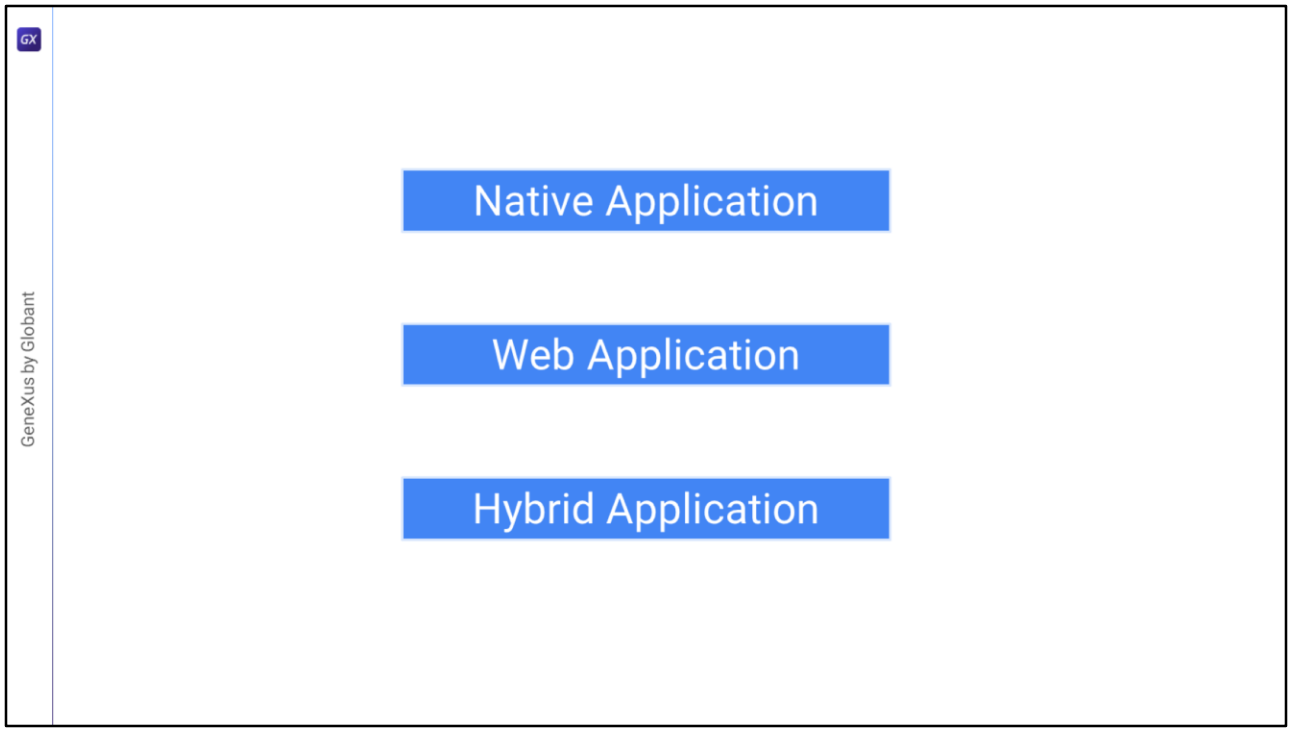
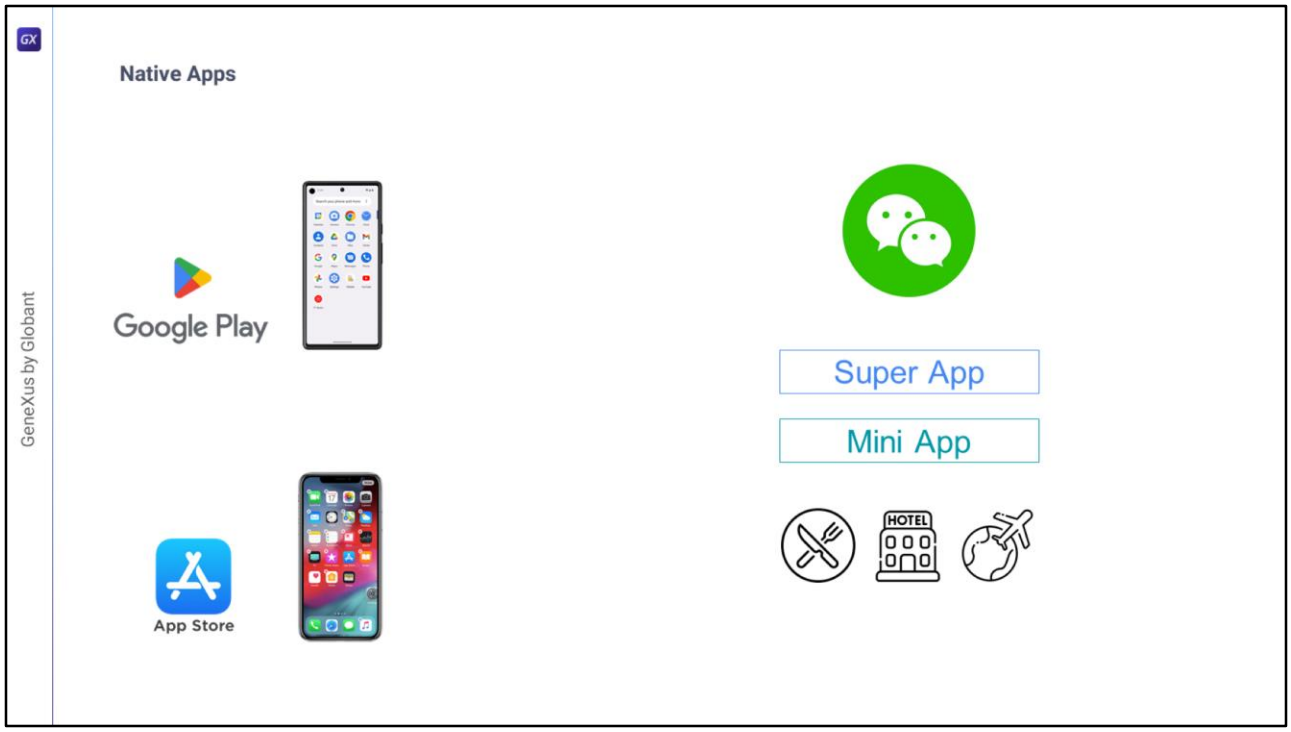



In this video, we will discuss the main features of smart device applications.

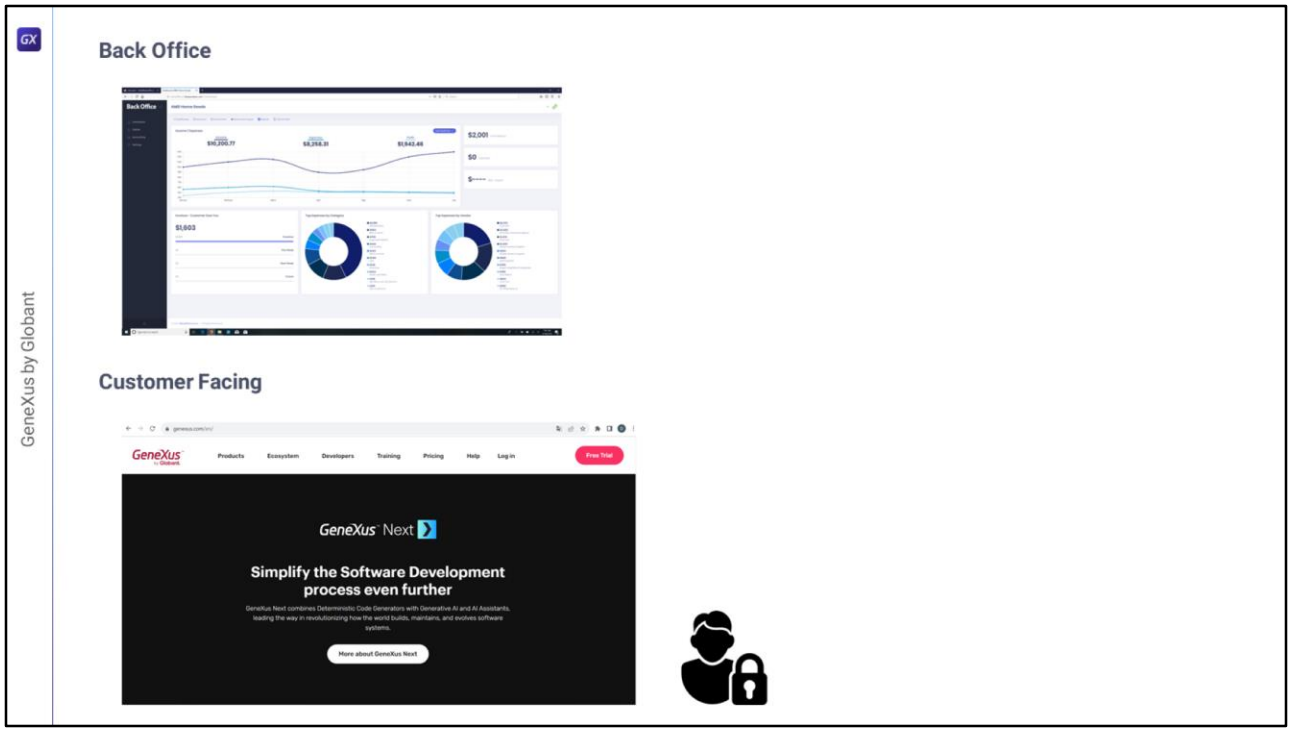



Mainly, there are three types of applications:
Native applications, Web applications, and Hybrid applications.
In this course, we will focus on the development of native applications.




Native applications are those we download from the app stores such as Play Store for Android or App Store for iOS. We will see their benefits and advantages, and the ability provided by GeneXus to code only once and then generate for different operating systems.

Among native applications, with GeneXus we can also generate the so-called Super Apps and Mini Apps.
Super apps are mobile applications that go beyond their main function and also offer various services and features. For example, in the case of an app that allows you to send messages to different contacts, as well as to order food, book a trip, pay your bills, etc.
An example of this type of application is the WeChat application from China. In addition to the main chat function, it also allows you to make mobile payments, buy tickets, book hotels, etc. All these additional functions are called Mini Apps.
Mini Apps are lighter and more specific applications that run inside a Super App. Instead of downloading a standalone application, users can access these Mini Apps from the main Super App.
Mini Apps are ideal when you only need to perform a specific task and don't want to clutter your device with standalone apps. They are quick to load and use less storage space.

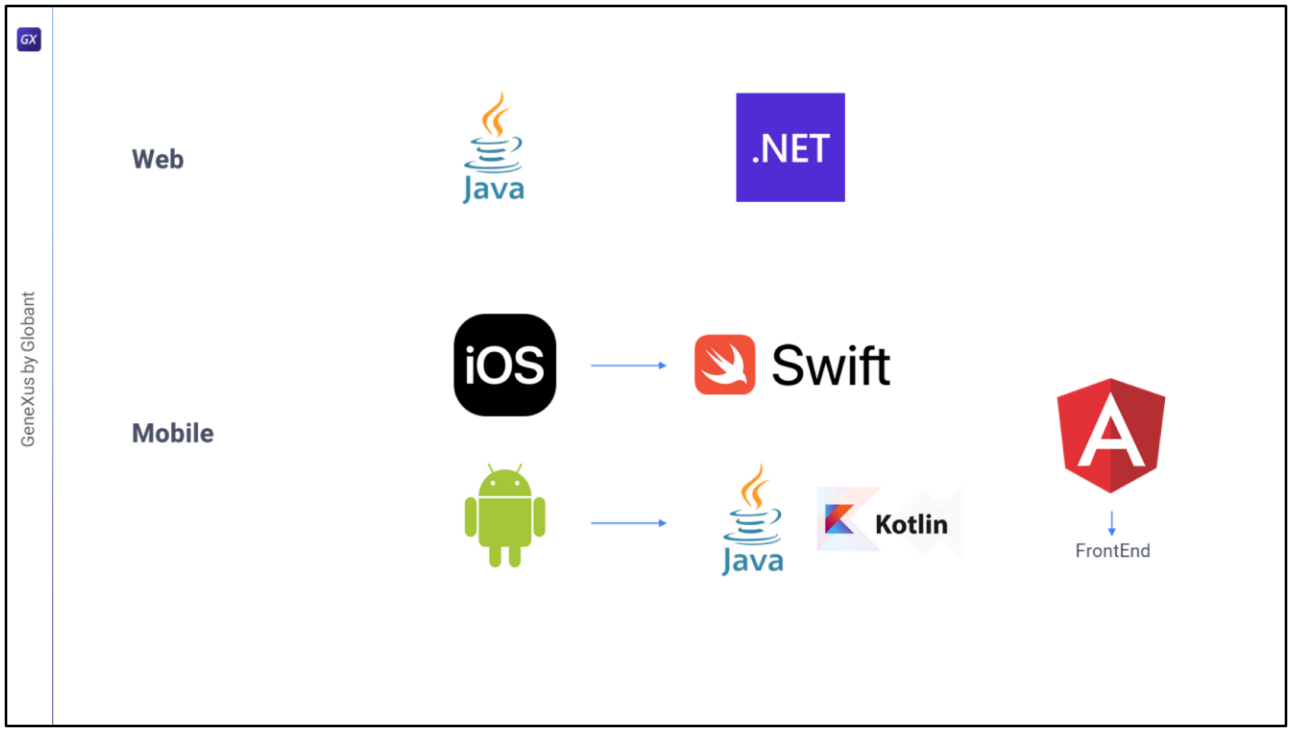



In GeneXus, we will be able to build Back-office and Customer-facing applications.

Customer-facing applications: They are designed to interact directly with end users. Their main objective is to provide services, information, or products to users in an efficient and satisfactory way. These applications focus on user experience.

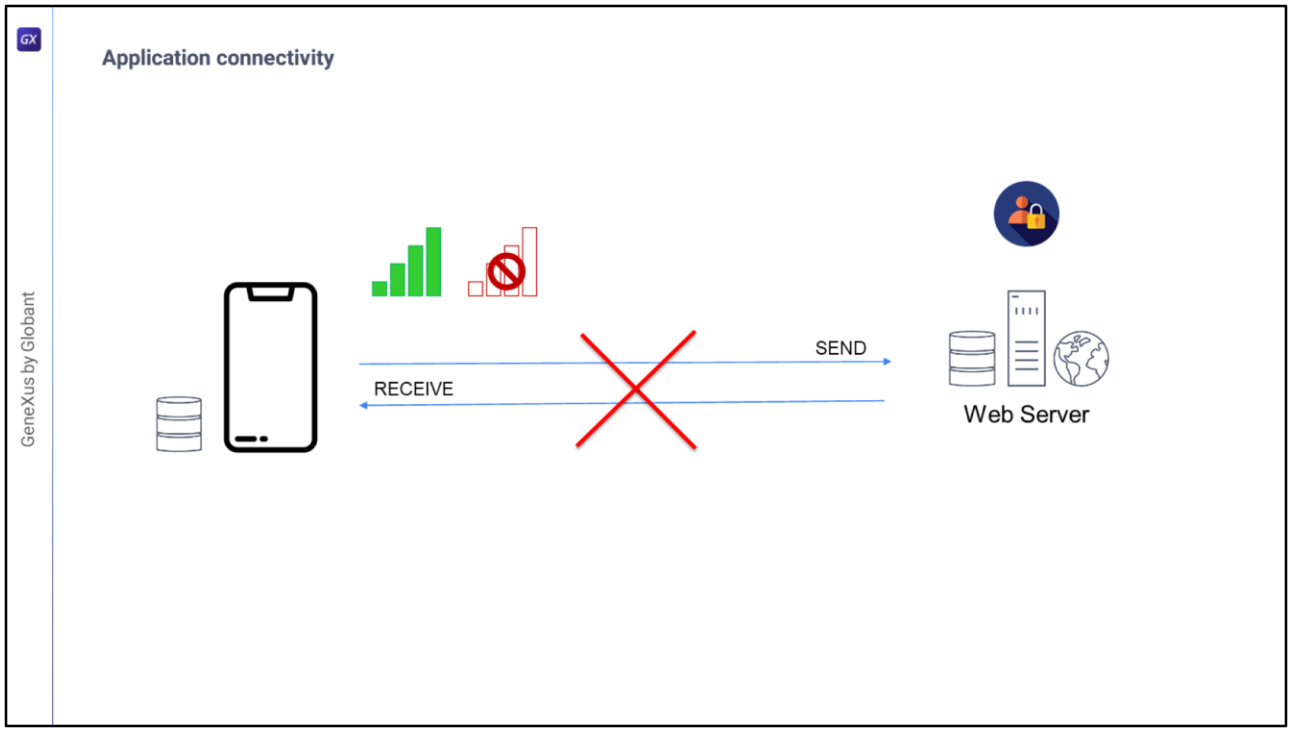
Back-office applications: They are intended for an organization's internal staff to manage internal processes, track data, and perform administrative tasks. These applications are not created or oriented to end users.

An important aspect in the case of back-office applications has to do with security. Of course, not any user is going to be authorized to make modifications to the application data, which will be centralized on a server. For this, we will also have to incorporate security modules in the applications for mobile devices that can then restrict the authorized users, and even restrict what actions they can perform on the different modules of the application.




Besides developing applications in Java or .Net for web, GeneXus also allows us to develop applications for Apple devices running on iOS in Swift, or Java for Android devices (Also Kotlin). GeneXus also allows generating the frontend in Angular, as well as for the web.

In GeneXus, we can generate the same application regardless of the platform we choose; we will only program or design for specific platform characteristics, when necessary.




One important aspect to consider when developing mobile applications will be their connectivity status; that is, whether the application will work online, offline, or with a mix of both.

Online applications require an active Internet connection to work properly. They rely on real-time communication with remote servers.
Examples of this type of application are social networking or messaging applications. These applications need to constantly send and receive data over the network.

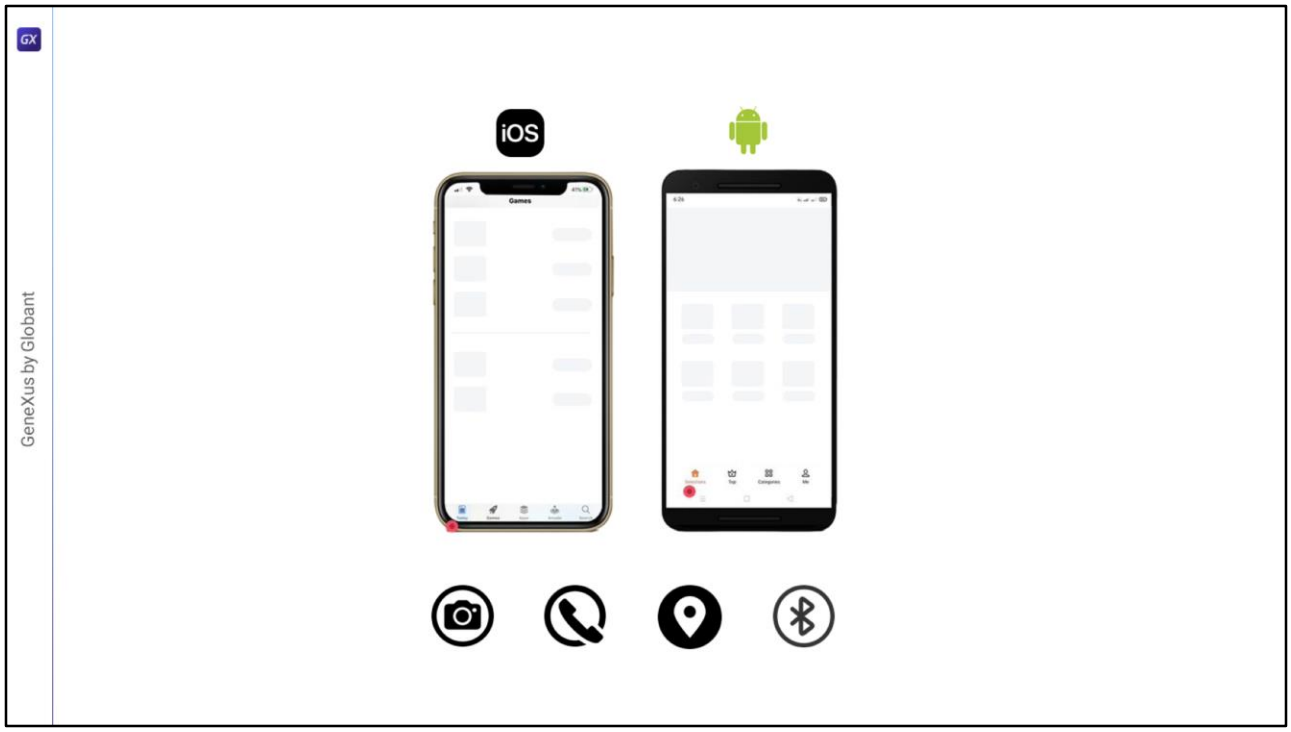
On the other hand, offline applications are designed to work without a constant connection to the Internet. These applications store data locally on the user's device, in a local database, and can operate independently. This is different from Online applications, which don't have a local database.

Some applications use a hybrid approach, combining both online and offline features. This allows users to enjoy the core functionality of the application even when they are offline, but they can also access additional features online.
For example, an email application may allow you to read emails offline, or even write a new email, but you will need to be connected to send new emails and/or sync your inbox.
For these types of applications, we will want the user to continue viewing all the information that doesn't require them to be online, even when they lose connection. Then, when the connection is reestablished, the application will automatically update its local data by synchronizing with the data from the centralized server. This synchronization is carried out by sending and receiving information in a bidirectional way and these operations will be known

as Send and Receive.

However, some tasks will require access to the web server, either because of their sensitivity or how fast the data changes. All these tasks must be executed online. For example, we might need an application login to be a task that is only performed online, and once logged in we can use the application while offline. In GeneXus, we can select which objects of the application will be executed offline and which won't.

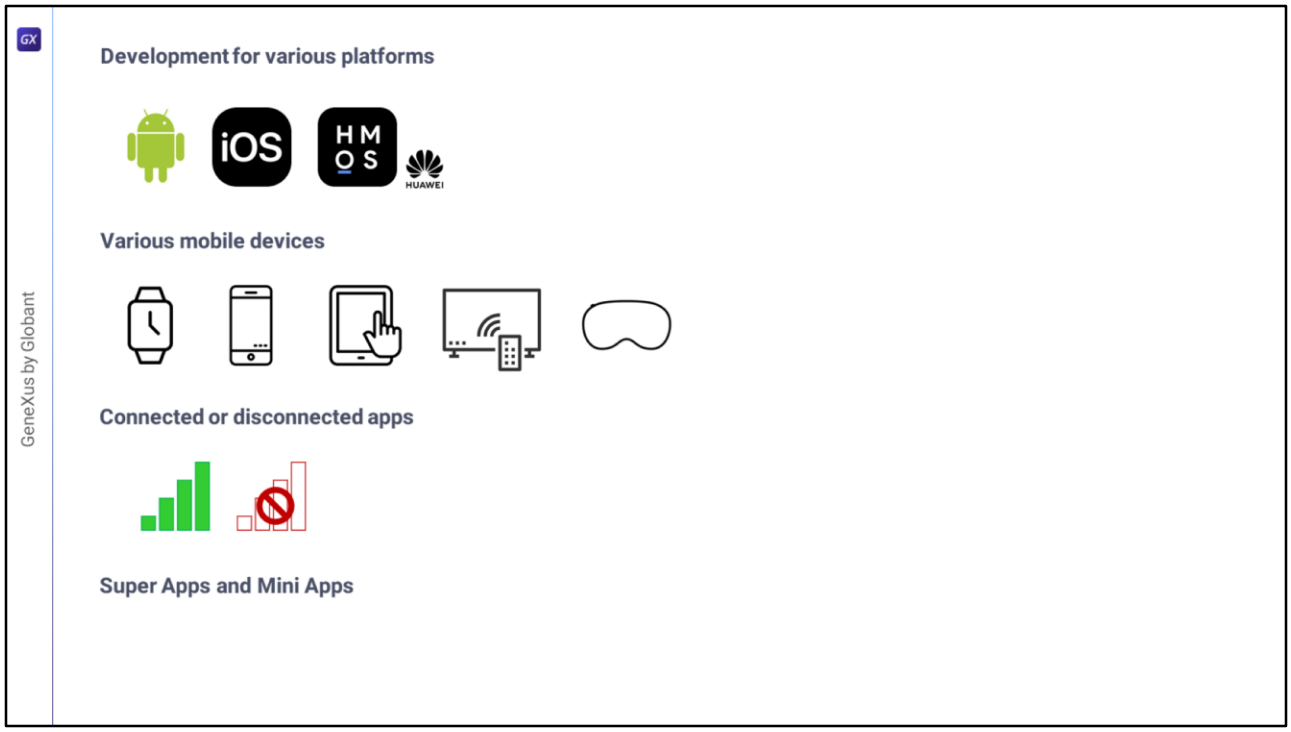
It is important to keep in mind that online applications will not have a local database and will always be connected to the web server to get the information.




As for the characteristics of native applications for mobile devices, we know that the user experience is fundamental.

Each platform has different guidelines regarding the look & feel of the application; that is, how the application should look, how the actions should look, and other matters that we will see later.
In addition, we will also want them to integrate with the native functionalities of the device, both in terms of software and hardware. For example, that they integrate with the device's camera, with the program for making phone calls, with GPS, Bluetooth, etc.
Users will demand that their experience using the applications we develop is consistent with the rest of the applications they use on their device.

This is why, for mobile devices, we generally consider native applications as the best option for an optimal user experience.




Therefore, as we've seen, GeneXus offers a wide range of possibilities for the applications you can build. You can develop applications for all major mobile platforms, such as Android, iOS, and HarmonyOS, the operating system of Huawei devices. As a result, you can reach a global audience.

As for the user interface, GeneXus gives you the flexibility to design applications that adapt to different types of devices: smart watches, cell phones, tablets, TV sets. This allows you to provide an optimal user experience regardless of the device used.

GeneXus also allows you to develop applications in both online and offline mode, with the ability to access the data and functionality of the application even when you have no Internet connection.
In addition, as mentioned above, GeneXus allows creating Super Apps and Mini Apps.

With GeneXus, we will be able to develop applications that look the same or very similar on different devices, while at the same time taking advantage of the specific features of each platform. As usual, all this will be done mostly in an automatic and transparent way for the developer.

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