

Technical University of Cluj-Napoca

Software Engineering Project

COVID Tracker

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Abstract

Our project is a web and mobile application developed using Java and Spring framework and React Native. It is a COVID-19 tracker which allows users to view infection rates and covid cases around the globe, or by country with the help of a map. It also allows users to check for testing locations and covid-19 related news. On top of that, they can receive important notifications about regulatory measures and other important things. All the data is loaded from an online API and the notifications are sent from a server admin.

We organised the classes into packages using the Model View Controller design pattern in the implementation of our system.

The flow of the application is the following: the user opens the app and from there he can see all the information. He can open the map to see all the cases from all the countries and also see the covid-19 testing locations and related news.

Cross-platform React-native

React Native (also known as RN) is a popular JavaScript-based mobile app framework that allows you to build natively-rendered mobile apps for iOS and Android. The framework lets you create an application for various platforms by using the same codebase.

React Native was first released by Facebook as an open-source project in 2015. In just a couple of years, it became one of the top solutions used for mobile development. React Native development is used to power some of the world's leading mobile apps, including Instagram, Facebook, and Skype. We discuss these and other examples of React Native-powered apps further in this post.

There are several reasons behind React Native's global success.

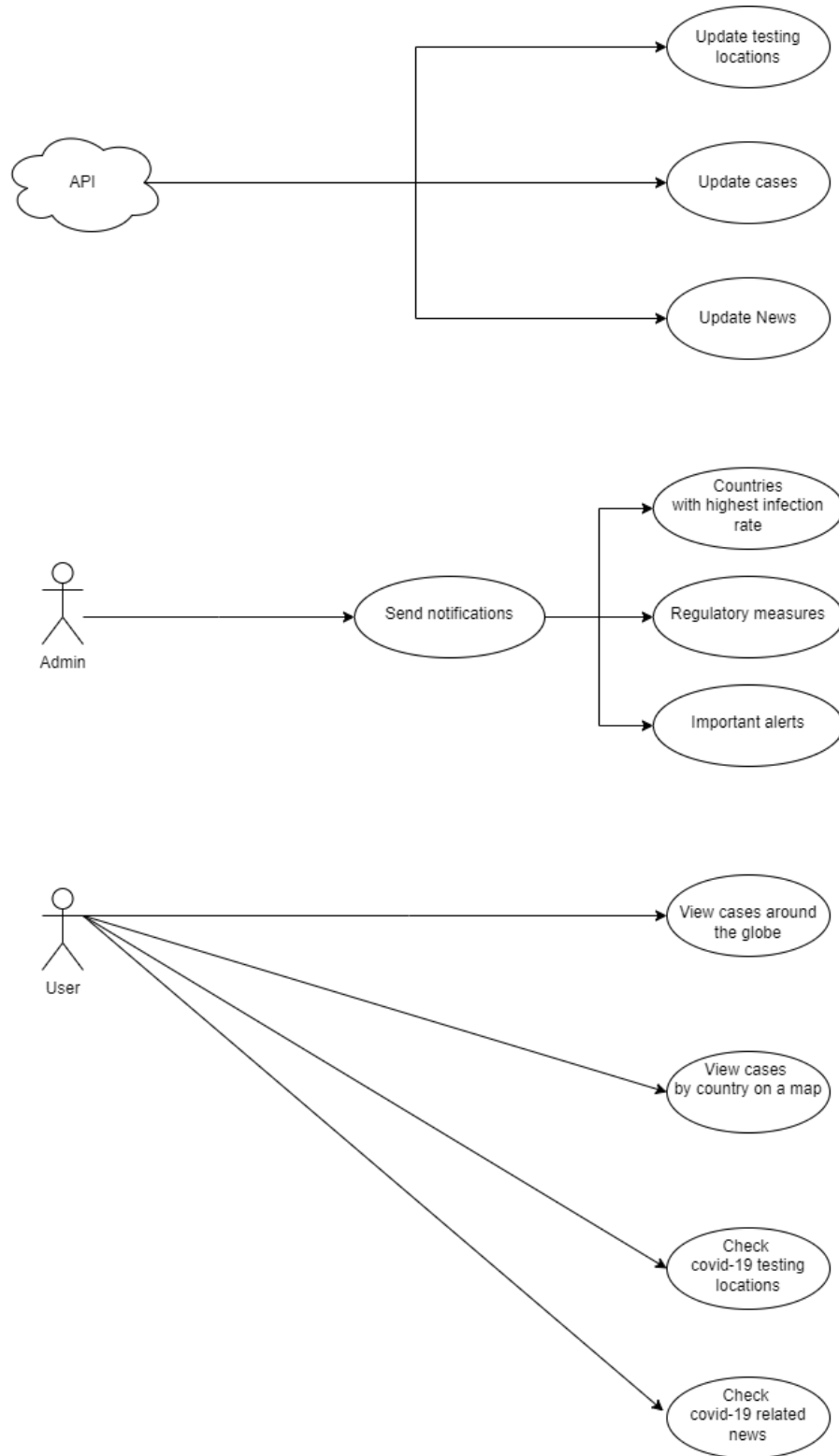
Firstly, by using React Native, companies can create code just once and use it to power both their iOS and Android apps. This translates to huge time and resource savings.

Secondly, React Native was built based on React – a JavaScript library, which was already hugely popular when the mobile framework was released. We discuss the differences between React and React Native in detail further in this section.

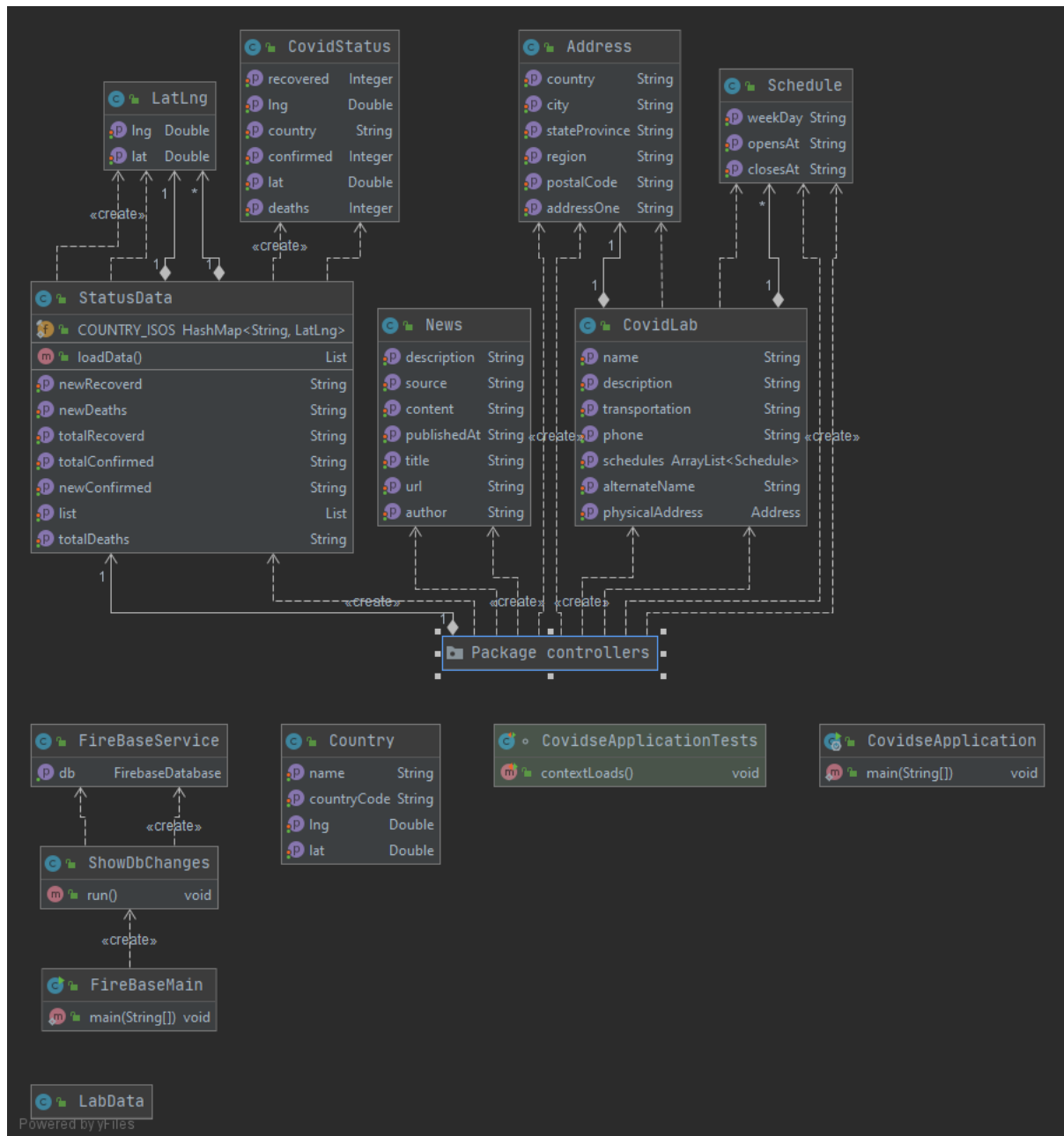
Thirdly, the framework empowered frontend developers, who could previously only work with web-based technologies, to create robust, production-ready apps for mobile platforms.

UML Diagrams

Use Case diagram



Class Diagram



Notifying users

Push notifications are messages or alerts sent by the makers of an application the user has installed. There are two main types of notifications, namely foreground and background notifications.

A foreground notification is a notification type that the user gets when the app is currently open and running, while background notifications are sent whether or not the app is currently open.

Push notifications are popular in the world of mobile app development for a number of reasons, including:

- They enable firms to advertise products and offers at a reduced cost
- They improve overall user experience
- They aid in the sending of transaction receipts faster
- They are used to convert more users
- Users will be notified about different changes that can occur during nowadays pandemic situations such as new regulations, news and countries with most COVID cases in the whole world.

Because we used React-native to design our app in conjunction with java spring, users can notify all other users by sending them push notifications even if they are not using the app at the time!

Task Management

For the documentation we have divided the tasks in the following way:

- Abstract: Both of us
- Use Case Diagram: Giurgiu Razvan
- Class Diagram: Csatlos-Koncz Andrei
- Notifying users: Giurgiu Razvan
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Source Code

Our complete project can be found at the following Github Repository:

Bibliography

- <https://docs.spring.io/spring-framework/docs/current/reference/html/>
- <https://reactnative.dev/docs/getting-started>
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