Visualising Sleep and Activity Data Against Time

Customer

The University of Manchester, UK

Industry

Research, Education

Notes

This implementation has been done as part of SciChart's "Free Educational license" for academic and non-profit projects.

Understanding the effects of lockdown

The University of Manchester Research IT's Mobile Development Service's (MDS) developed a cross-platform mobile app called "The Rest-Activity Pattern app" (RAPapp)

It was developed over the lockdown months in 2020, and used to facilitate a citizen science project around the rest-activity patterns of the general public.

The project was aimed to analyse and quantify the effects of the various lockdown conditions on activity levels.

Realtime Charting to Visualise & Measure Activity Data

The RAPapp visualises activity data against time.

The app allows users to send their sleep and activity data measured by their smart watches or fitness tracker to university researchers.
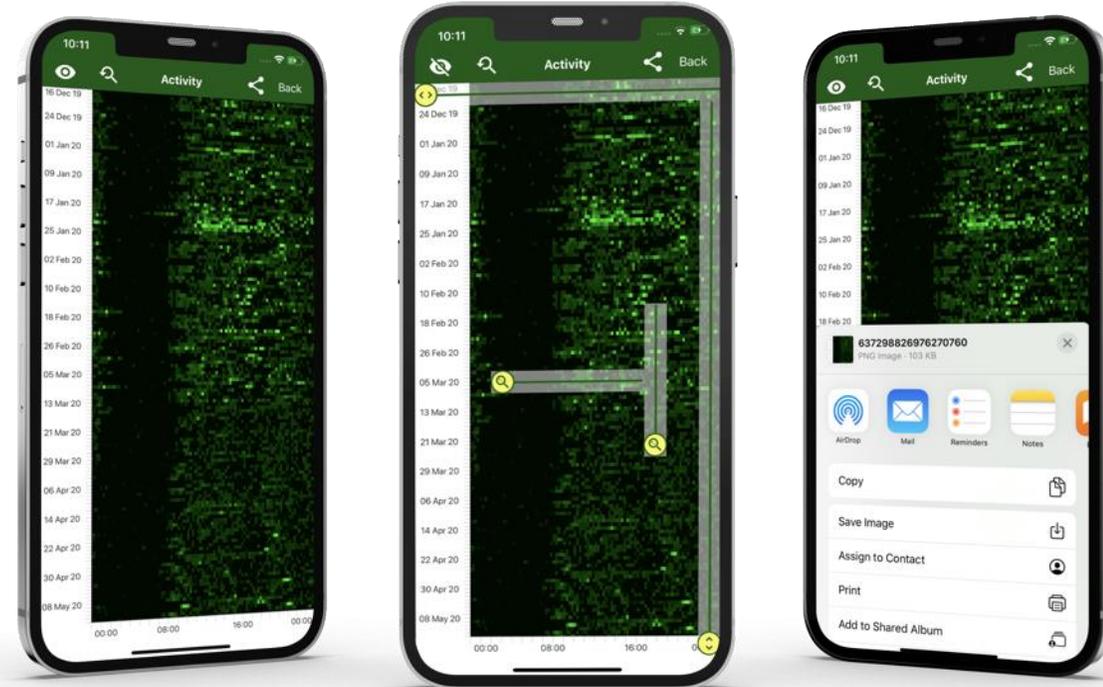

"SciChart was simply fast, and highly customisable SDK for visualising graph in the exact style our researchers have asked for as the visual presentation was important them.
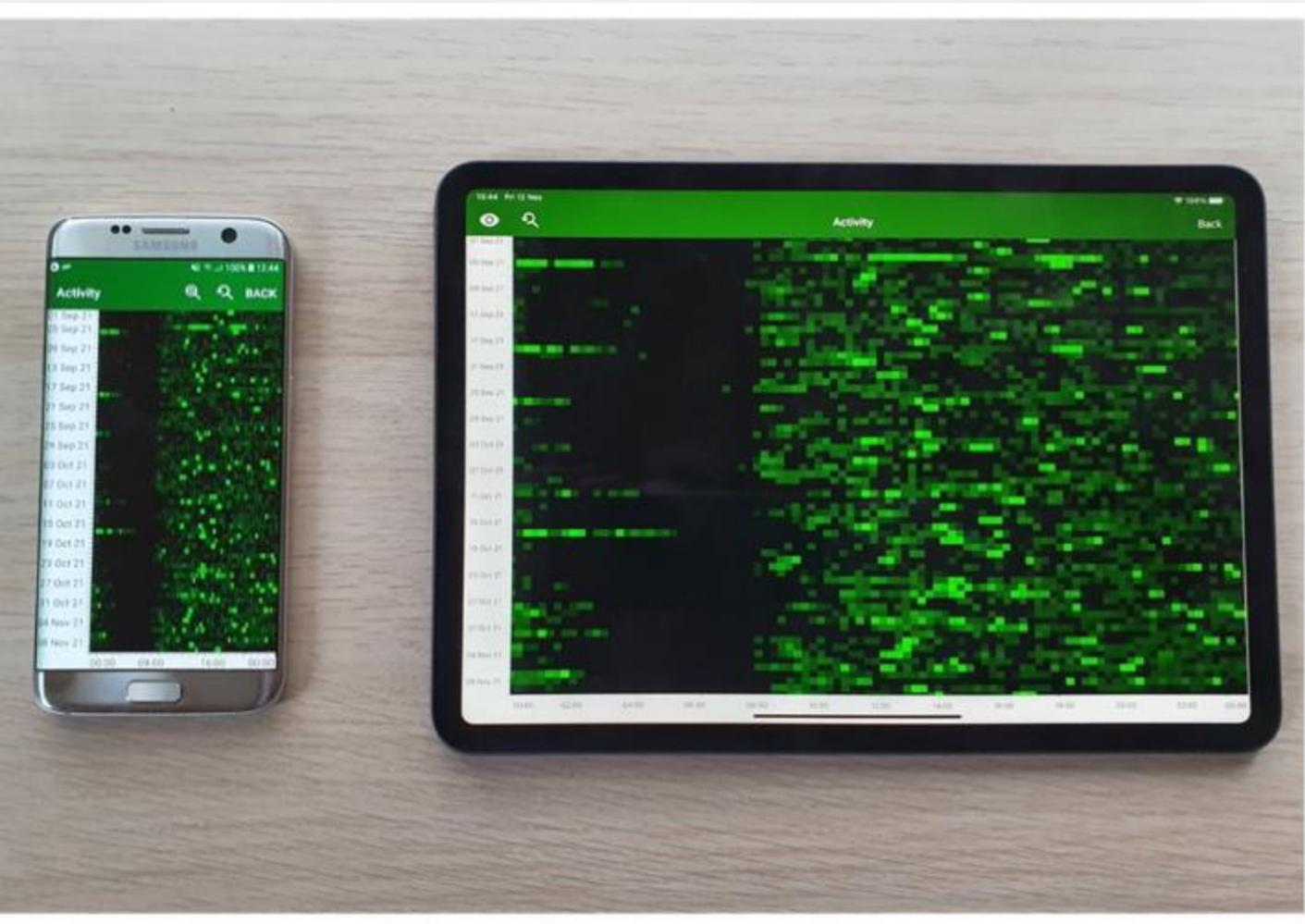
Challenge

The RAPapp is part of a priority project looking at how the lockdown has affected rest-activity patterns in EEA countries.

The Mobile Development Service team was unable to find a fast, high-performance, flexible, and highly customizable SDK cross-platform mobile charting tool to display heatmaps in the exact style their researchers asked for as the visual presentation was important.

To meet the demands of their customer, The Mobile Development Service team used SciChart's highly customisable accelerated scientific charting library to:

- ✓ Visualise about 2-years worth of steps sorted into 15-minute bins – around 70,000 data points

- ✓ Generate and render heatmap from the bin-package data

- ✓ Wire in a set of controls for panning and zooming the graph

- ✓ Pinch zooming and touch panning

- ✓ Enable users to provide feedback on their graph

- ✓ Share graph via social media

Using the Rest-Activity Pattern app (RAPapp), the Research IT's Mobile Development Service (MDS) team was able to understand users' sleep and activity pattern in real-time and the speed at which it was rendered using SciChart iOS and Android SDK library.

In addition, the Mobile Development Service team utilized numerous SciChart's powerful and flexible charting tools to allow users to view their sleep and activity heatmap as well as pan and pinch-zoom on the heatmap at will. It gave users much more insight into their daily activity during the lockdown.

> " Visual presentation was important to our client and most other libraries do not offer flexibility like SciChart out the box."

Dr. Adrian Harwood

MEng (Hons) PhD CEng MIET FHEA
Mobile Development Service Lead | Research IT | IT Services
The University of Manchester
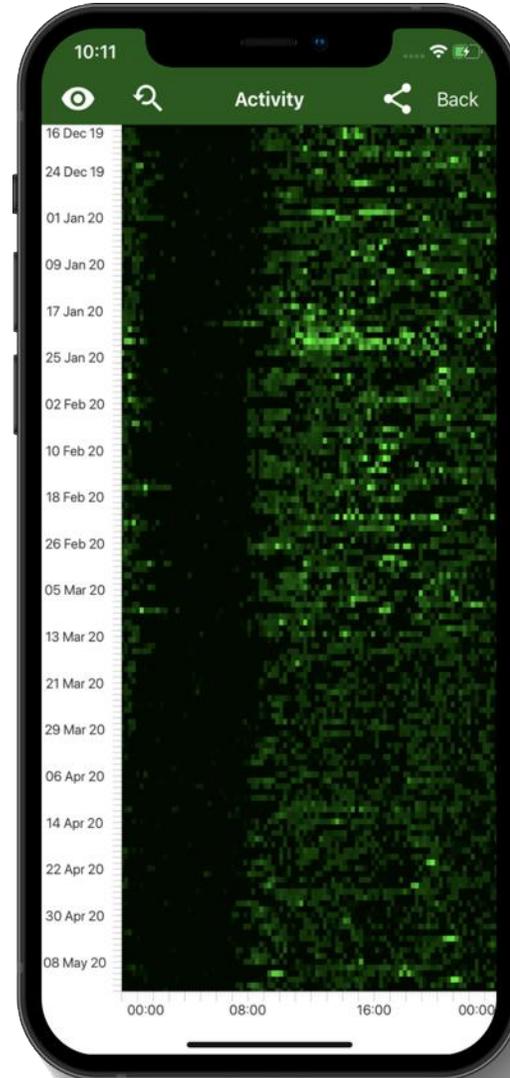
About SciChart

SciChart is a cross-platform WPF, iOS, Android and Xamarin Scientific & Financial Charting Library.

SciChart supports rendering of complex, interactive, real-time charts with many millions of data points for demanding scientific, medical and financial applications and embedded systems that require high performance, rich interaction and smooth updates.

SciChart Ltd
16 Beaufort Court, Admirals Way, Docklands. E14 9XL. London. United Kingdom

Web: https://www.scichart.com
Contact us at: sales@scichart.com