

Mobile application for tracking the state of the coronavirus pandemic in the world

Done by Student of group 3AKIT-19m

Specialty 151 Automation and computer-integrated technologies

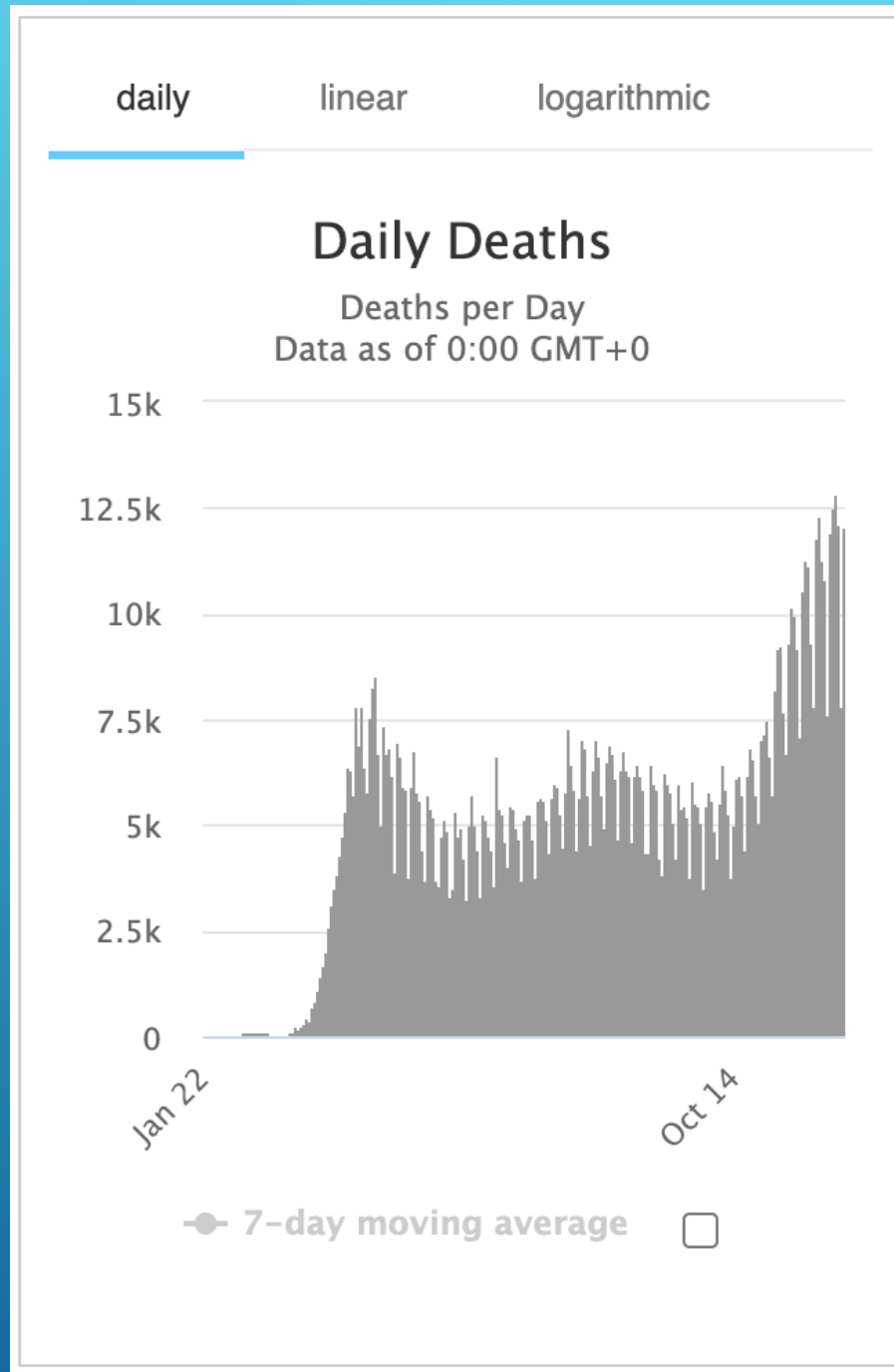
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- ▶ Although it is said that the coronavirus has plunged the world into a "crisis like no other", it does expect global growth to rise to 5.8% next year if the pandemic fades in the second half of 2020. It's obvious that COVID-19's global status strongly aligns with government issues and in the current status we're in, it's expected to continue having this critical effect on general health. Which is exactly why this work emphasises on the importance of keeping the public up-to-date with Covid-related news and statistics as well as other health-reassuring features.

RELEVANCE OF THE TOPIC

CORONAVIRUS MORTALITY STATISTICS



- ▶ My solution to help raise awareness as well as comfort users is called Co-19 which provides updated statistics from a reliable API, allows users to submit their symptoms and get personalized responses and more..
- ▶ Built using the Flutter framework and backed with some Firebase services. Mainly targeting mobile users because this has the furthest reach.

MY SOLUTION

	Worldwide	Italy	Spain	France	Germany	China	United States
Smartphone/mobile phone	70%	72%	64%	41%	33%	86%	40%
Laptop	40%	47%	47%	37%	29%	45%	37%
PC/desktop	32%	26%	28%	30%	23%	35%	23%
Smart TV/media streaming service	30%	29%	35%	13%	18%	32%	29%
Tablet	22%	22%	23%	11%	12%	27%	20%
Games console	14%	14%	12%	15%	10%	14%	13%
Smart speaker	9%	5%	4%	3%	4%	13%	8%
None of these	8%	2%	2%	21%	34%	1%	22%
Smartwatch	6%	4%	4%	1%	3%	8%	4%
Other	1%	2%	2%	2%	2%	1%	1%

STATISTICS SHOWING THE RISE IN USE OF GADGETS DURING THE OUTBREAK OF THE VIRUS IN PERCENTAGES.

- Flutter is an open-source and quick to learn framework that uses Dart as its programming language.
- It has great IDE integrations and is easy to setup in all of them such as Android Studio, IntelliJ, VSCode, or Emacs.
- Provides with a large set of material components straight out of the box to use and make an app from the get-go.
- Hot Reload is an amazing feature that allows you to update the state of the app without having to recompile the whole thing, which really speeds up the development process.
- Another great advantage over other frameworks is performance. Flutter compiles directly to native code avoiding bridging through another language to compile (such is done by ReactNative).
- Regular updates and optimization.

WHY FLUTTER?

- Firebase provides ready and secure recipes for authentication, storage, cloud functions, analytics and much more.
- It is well documented and not too difficult to get into.
- The Firebase SDK for Flutter is well wrapped making it simple for developers to easily access Firestore (database) data.
- Additionally mentioning dynamic linking and cloud storage as great Firebase services to use in any project.
- Time saving: Being able to design and wrap up a startup without the need for a full-fledged back-end is a great advantage for a quick start in the industry.
- Fast NoSQL-based database

WHY FIREBASE?

- ▶ During the process of brainstorming, i wrapped the whole idea around a simple Covid stats and a news page for an MVP and scale on to support users and eventually even integrate a machine learning face-mask scanning feature using Tensorflow for potential employee scans or other applicable cases.



BRAINSTORMING AND PROTOTYPING

- ▶ After assessing the idea and the concept i went and got the app designed and into a development process

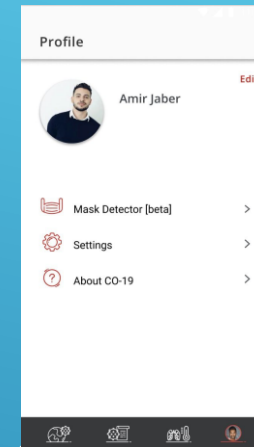


Health details

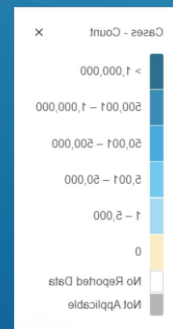
The coronavirus infection COVID-19 affects different groups of people to varying degrees. Most infected people have mild to moderate illness and do not need hospitalization.

Check the symptoms you have and send us, we will tell you what you should do next

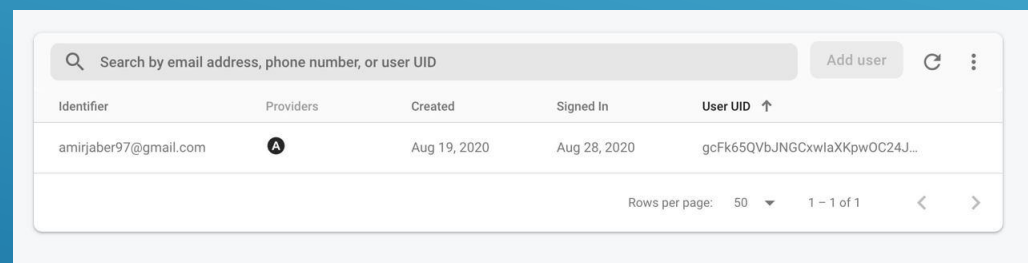
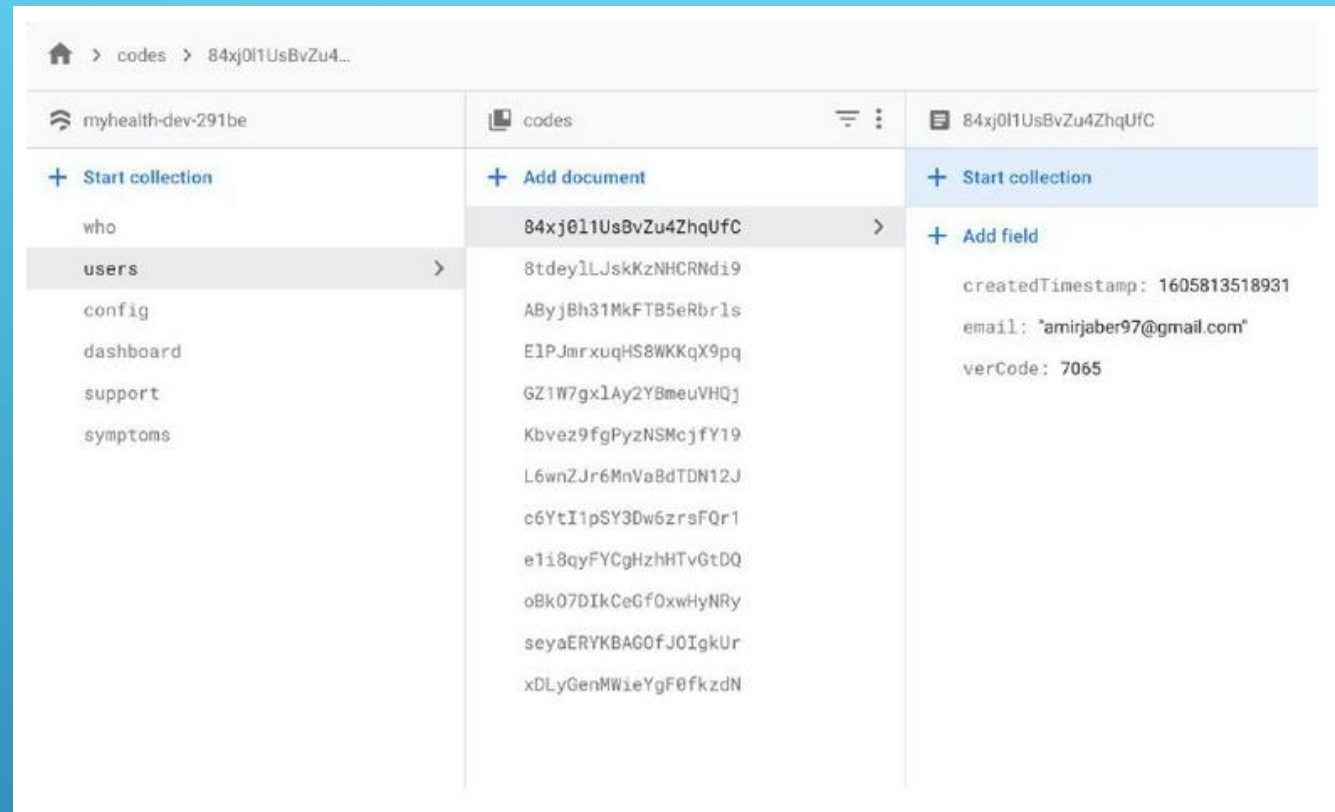
- increased body temperature
- dry cough
- fatigue
- a sore throat
- diarrhea
- conjunctivitis
- headache



DESIGN

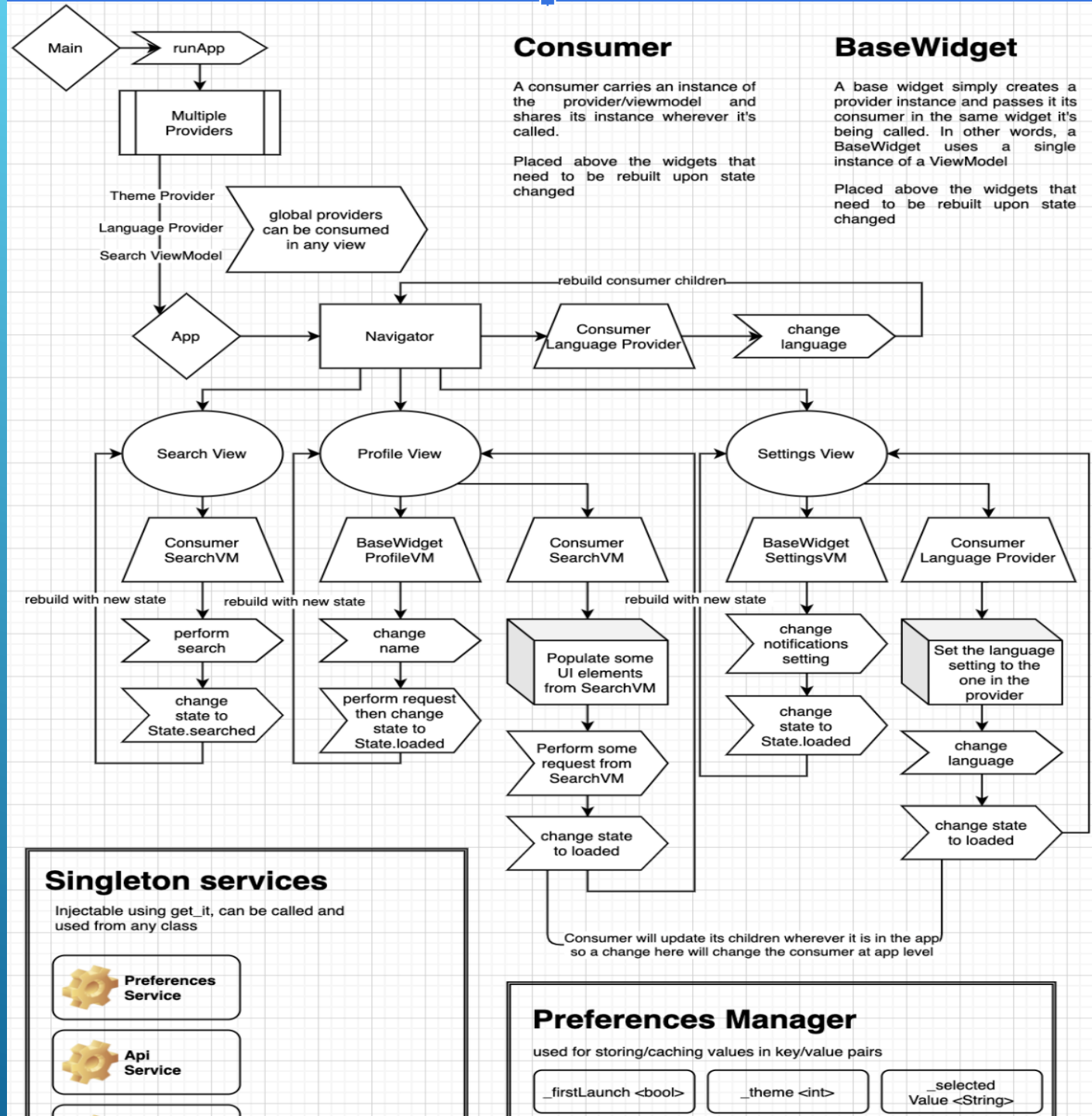


- ▶ With Firebase setup, Authentication and data collection goes into place. After registration the user will have his own data collection in Firestore connected to his authentication ID. As well as other data submitted by this user will generate separate collections linked to the user's ID. Firebase cloud functions are currently being utilized for personalizing responses based on symptoms submitted by the user. As well as other Firebase services in play but still in early touch ups, such as Analytics and sharing via dynamic linking.

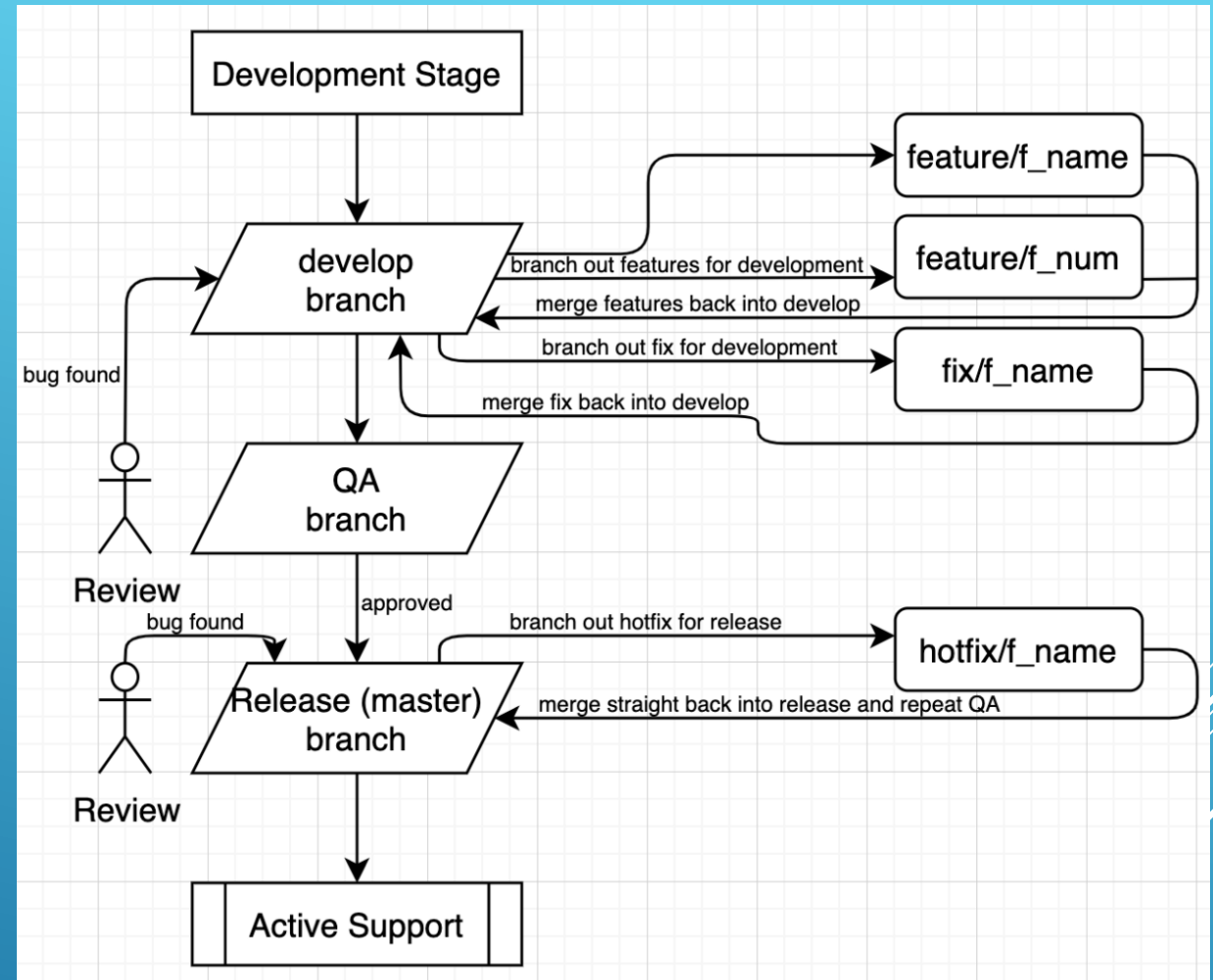


FIREBASE SERVICES AND FLOW IN ACTION

APPLICATION ARCHITECTURE



- ▶ I personally rolled out managing this project with a small team with respect to an Agile methodology heading towards the release of an MVP, a standard gitflow and a board for task tracking (Trello).
- ▶ For CI/CD we will be utilizing a platform called Codemagic which supports Flutter out of the box and automates all processes (signing, building, configuring, publishing..).
- ▶ The delivery will be a word of mouth for a start as we get beta users and roll out test features and fixes.



PROJECT MANAGEMENT AND DELIVERY

- ▶ This work was published at:

XLIX Scientific and technical conference of the Faculty of Computer Systems and Automation - 2020.
as “Жабep A.X. Mobile App for tracking Coronavirus status worldwide / Jaber A.H.”

SCIENTIFIC PUBLICATIONS



- ▶ The scientific and practical result of this program is the development technique using a new framework for cross-platform development and delivery of tools that raise awareness, as well as the concept use of machine learning to detect face masks.

THE SCIENTIFIC AND PRACTICAL RESULT

- ▶ In the process of working on this Master's, I developed(ing) a mobile application that tracks the statistics of the spread of the current virus and potentially raises awareness, as well as other health-focused features that are targeted to help people be aware of their current condition and more. Also using a new framework and modern services. As a result I was able to roll out an MVP in a short frame of time and produce an application that performs its required task mentioned in the beginning.

CONCLUSION

THIS CONCLUDES MY PRESENTATION
THANK YOU

