Slide 1

Hello everyone, Thank you for coming to this presentation, my name is Rafal and hopefully you'll have fun.
Today I would like to tell you a few things about Flutter, why it's becoming so popular and why you might consider using it.
Ok, so let's get started.

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Cool, I will start by introducing myself.
I first tried Flutter 5 years ago, I was an Android developer back then. I was looking for new, fast ways to develop applications and one of my friend's recommended Flutter as a good alternative.

I was really surprised how easy and fast you can build UI interfaces and how easy you can iterate on it.
I moved to the UK and got an opportunity to make an app in Flutter. I really liked it so I started contributing more and more to the community, joining meetups and… I never moved back to android.

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I mentioned Flutter a few times already but you may ask.. What exactly is Flutter?

On it's website Google describes it as "UI toolkit for building beautiful, natively compiled applications for mobile, web, desktop and embedded devices from a single codebase".
Adding to that, it is free and open-source, meaning that you can see everything on github, together with sources for Flutter's website.

You can contribute to the project and report bugs or suggest improvements.

We will talk about how it works later, but for now let me just say that it's written in Dart and C++

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Quick history how it came to this point that Canonical partnered with Google and decided to make a new installer in Flutter.

At the beginning Flutter started as a stripped down Chrome runtime. It was an experiment in which developers wanted to check how much faster UI rendering might be and it was targeting 120 fps.
It went through many stages and languages but Dart fit all the boxes to be both interpreted and compiled at the same time. They made their first demo at dart summit in 2015.

After that everything happened fast, Flutter was targeting Android and iOS first but support for Linux, Windows, macOS and web came after that.

Flutter is also very portable. For example Google engineers took Flutter and made it run on a wall within the office, which is, I must say, not a very common place to run UI framework. But a more common thing would be running Flutter on xbox or raspberry pi without xorg or wayland, which is supported by the community.

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So you might think that it sounds interesting but don't we have gtk and qt already?
Well, yes. Those are great too and I'm not saying that you should rewrite all your apps in Flutter (that would be cool exercise though)
I just want to say that Flutter is backed by many companies now, and at first it was only Google who contributed to it but now engineers from many companies do.

As we will see shortly thanks to composition over inheritance and reactive nature of the framework It's easy to code UIs in Flutter.

Like I said before it has great cross platform support but if you want, you can create your own embedder and run it on almost everything

It's fast and compiles down to native binary.

Last but not least, it's also great news for the Linux community that full source code and development is available on github, for both dart and flutter itself.

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I’ve seen a few misconceptions about how it all works so let me quickly explain how Flutter is built.

In short there are two parts: the one that you code in, which is written in Dart, and the engine part written in C++.
The engine uses a library called Skia for drawing pixels on the screen. Skia can draw using opengl, vulkan, metal or software renderer.

Of course some things require calling the underlying platform and for this we have a plugin system, thanks to which we can make native calls. On Android it calls java runtime, on iOS it’s swift. But on linux it’s C++.

It’s also worth noting that lately dart got ffi support, thanks to which you can call C-compatible libraries. There’s also a tool which can scan C headers and create those bindings. If you’re interested check the documentation to find out more.

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Alright, now that everyone has some understanding what Flutter is, let’s jump to the demo. I will go slowly at first but for later parts I will fast forward the demos and talk, so you won’t get bored. This is not a tutorial and I will be writing everything in one file but hopefully you will get the feeling of how to use this framework and how powerful it is.

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Ok, so hopefully it wasn’t that boring, but let’s recap the demo:

We created responsive application very quickly
It was easy to develop UI, even if we didn’t have some functionally, like, highlighting a folder it was quick to implement.
Also, Hot reload and Hot restart are awesome tools to help you iterate on your project.

Animations are built in and easy to use. And by the way, it’s also very easy to create new, custom animations.
We saw libraries made by Canonical, thanks to which, we could integrate flutter more easily with our desktop environment and plugins made by others to open files.

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I think this is a good place to mention Linux specific integrations which we haven’t seen in the demo.

I only showed two libraries but Canonical guys have done other cool stuff for integrating dart with Linux. To name a few, we can use network manager, dbus, gsettings or packagekit, and again, everything is open source and available for you to use or contribute

There are few other integrations done by Google, like native file selector, window size checker or menu bar integration.

And of course many other libraries, done by the community.

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You might ask if we can do everything in Flutter now?

The answer is Yes! But also not quite….
Linux still lacks native view support and texture view support, they are pull requests implementing that so it shouldn’t be too long to see this functionality in the framework.

There’s also no sound plugin for linux but that could be relatively easy to implement

So we still need to wait for a few things but it's a good time to start writing apps now.

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If you liked what you just saw and would like to learn more about Flutter, then check out official documentation.

Also there are many great tutorials on youtube with source code on github.

Flutter Community makes a HumpDay Q&A youtube stream every wednesday (well, almost), where you can ask any questions regarding the framework.

To get a taste of awesome UIs' - search for Flutter challenges in your search engine of choice, you might be surprised how easy people implement applications in Flutter with custom UI.

If you need to talk with other developers, there's also discord channel.

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If you already know Flutter and would like to help with Linux adoption,here are my tips for you.

Write and share your linux programs, you can, for example, use twitter for that. Don't forget to mention flutter and linux accounts.

Write post about your experiences and problems that you've encountered

If you find bugs or have some suggestions how to improve the framework, report issues to Flutter's github page.

Speaking of improvement, take a look at documentation, there's always something to fix.
Last but least, help Canonical to develop their libraries and add support to popular libraries on pub.dev

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That is all I had for you today, hope you had some fun and at least I got your interest in Flutter. Thank you for listening.

Now I think we will have some time for questions.