

PRO KDE

EVERYTHING YOU NEED TO
KNOW ABOUT KDE

PAUL MCQUADE

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Table of Contents

Licence	1
Preface by Paul McQuade	2
Acknowledgements	2
Developers	3
Source Code	3
Issues	3
Merge Requests	3
Thank You	3
Getting Started	4
About KDE	4
Software Development Life Cycle	5
Setup an KDE Account	5
Development	7
Projects	7
The QT Framework	8
Advantages of QT	8
Tools	9
Testing	11
Bugs	11
Appendix A: Getting Help	12
KDE IRC Channels	12
KDE Mailing Lists	14

Licence

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Preface by Paul McQuade

I began writing this book as a way to escape from the nightmare of Covid-19. As i write i wondered what can i do to make developing software easier on people. I realise that sharing my information about coding was to way to go.

I never wrote a book before and i had very little practical knowledge about KDE Plasma and KDE Frameworks. Writing a book would force me to think.

Acknowledgements

Dedications

I would like to thank my family - Peter, Breda, Caitriona and Caroline for their support down through the years especially when i was sick in hospital.

Developers

Source Code

This book is hosted on Gitlab.com under the following link:

<https://gitlab.com/paulmcquad/prokde>

Issues

If you have an issue about the book you want to raise it on gitlab.com Issues can be errata and content changes.

Merge Requests

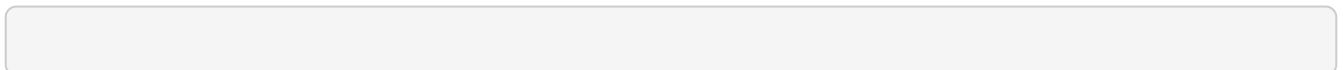
Pro KDE is always looking for developers. Feel free to submit patches through Gitlab Merge Requests.

In Gitlab go to: Left side Panel > Merge Requests > New merge request

Thank You

Since this is an Open Source book, I want to say a big thank you to the developers who have send in several errata and content changes. Here are all the people who have contributed to the English version of Pro KDE as an open source project.

Thank you everyone for helping make this a better book for everyone.



Getting Started

About KDE

KDE is an international team co-operating on development and distribution of Free, Open Source Software for desktop and portable computing. Their community has developed a wide variety of applications for communication, work, education and entertainment. They have a strong focus on finding innovative solutions to old and new problems, creating a vibrant, open atmosphere for experimentation.

KDE Projects

KDE Projects consists of three parts:

- KDE Plasma - A User Interface
- KDE Frameworks - A Collection of libraries and software frameworks
- KDE Applications - A list of Programs like Kate and Konsole

Development of KDE

A few images of process in action:

Table 1. Development of KDE



THE KDE CODE OF CONDUCT

When communicating in official KDE channels please observe the KDE Code of Conduct. Our Code of Conduct presents a summary of the shared values and common sense thinking in our community. The basic social ingredients that hold our project together include:

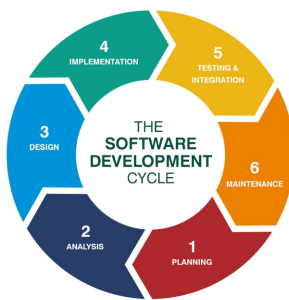
- Be considerate
- Be respectful
- Be collaborative
- Be pragmatic

Support others in the community Get support from others in the community The Code of Conduct can be found here : <http://www.kde.org/code-of-conduct/>

Software Development Life Cycle

The 6 steps to Software Development Life Cycle are:

1. Planning - Talk to other developers.
2. Analysis - Break the problem into smaller parts.
3. Design - Put a plan together and create mockups if needed.
4. Implementation - Write code.
5. Testing & Integration - Report and fix bug issues.
6. Maintenance - Apply patches and release software.



Setup an KDE Account

About KDE Identity Account

In order to submit merge requests with GitLab, you'll need a KDE Identity Account.

These can be registered using the self-service Identity site. As part of this process, you will need to provide a name and email address, which has to be your own. Please note that these details will be made publicly visible on Gitlab once you have logged in there. You may therefore receive some spam as an unfortunate consequence of this.

When selecting your username, please ensure you select something which has a relation to your real name.

A Developer Account is not needed to fork repositories and submit merge requests on Gitlab.

Also note that this email address should be the same one that you use on bugs.kde.org. If you don't have an account in bugs.kde.org, please create one so that it can be given usual developer rights. Closing bug reports with keywords in commit comments only works if the email address associated with your KDE Developer account and bugs.kde.org accounts match.

How to setup an KDE Identity Account

Register with KDE Identity Account at the following:

[KDE Identity](#)

Click Register > Accept KDE Code of Conduct > Fill in Name and Email

Identity with send an email called "Account activation on KDE Identity"

Something like this:

Hello {First Name, Last Name},

In order to activate your new account please follow the link below.
You will not be able to begin using your account on KDE Identity until you have activated your account.

If you did not request this, please inform the site administrator by replying to this email.

<https://identity.kde.org/index.php=LINK>

Thanks,
KDE Identity site administrators.

I removed the LINK details but you get the idea.

Development

Projects

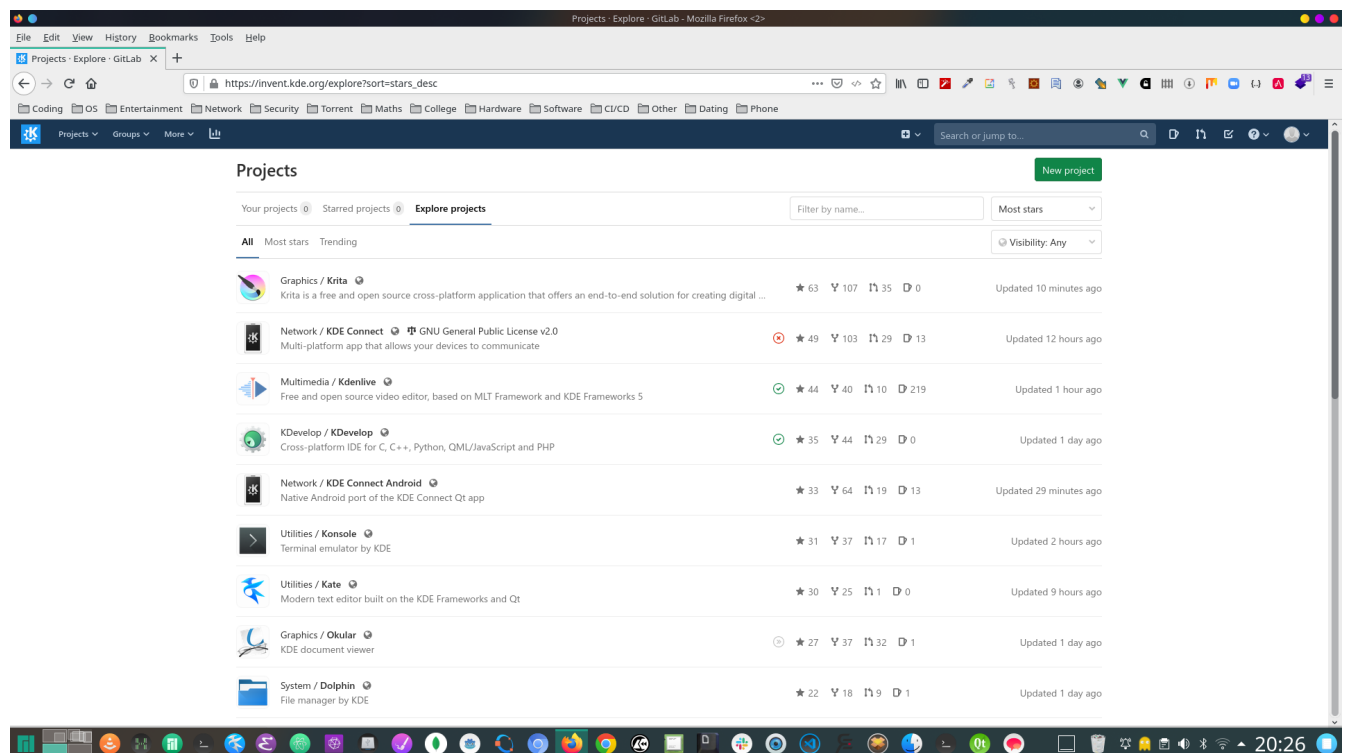
Once you setup an KDE Identity Account (see Getting Started > Setup an KDE Account). You can use your account to login to invent.kde.org/explore.

Choosing a Project

When you come to KDE as a developer, you may already have a favorite project and know how you want to contribute. But it's worth looking over the various projects listed in this chapter, to find out all the ways you may be able to help. And even if you're really only interested in one project, it's useful to know what others are active because your work may interact with them.

KDE Projects

These are general components underlying the applications and other visible parts of KDE. The team is working hard to make the libraries modular, clarify the dependencies, simplify, and increase the quality and stability.



The QT Framework

To start developing on the KDE Development Platform you will need to get familiar with the Qt framework, which is one of building blocks of KDE development.

Qt (pronounced officially as cute) is a cross-platform application framework based on C++, that is widely used for developing application software with a graphical user interface (GUI). Thus, it is largely a widget toolkit, but is also used for developing non-GUI programs such as command-line tools and consoles for servers.

Besides the KDE Development Platform, Qt is most notably used in Autodesk Maya, Adobe Photoshop Elements, OPIE, Skype, VLC media player, VirtualBox, and Mathematica, and by the European Space Agency, DreamWorks, Google, HP, Lucasfilm, Panasonic, Philips, Samsung, Siemens, Volvo, and Walt Disney Animation Studios.

Advantages of QT

Writing code once to target multiple platforms

Qt allows you to write advanced applications and UIs that you can deploy across different desktops and embedded operating systems without rewriting the source code, saving time and development cost.

Creating amazing user experiences

Whether you prefer C++ or JavaScript, Qt provides the building blocks for modern, interactive interfaces: a broad set of customizable widgets, graphics canvas, style engines, and more. You can incorporate 3D graphics, multimedia audio or video, visual effects, and animations to set your application apart from the competition.

Doing more (and faster!) with less

Qt is fast to learn and to use, particularly when used together with the new Qt Creator cross-platform IDE. And Qt's modular class library provides much of the necessary infrastructure for interactive applications.

Blending web and native code in a single application

Qt's integration with the WebKit web rendering engine means that you can quickly incorporate content and services from the Web into your native application, and can use the web environment to deliver your services and functionality. To learn how to use Qt, we recommend the tutorials here:

<https://doc.qt.io/>

QT Developers site:

<https://www.qt.io/developers>

Tools

Core Tools

Git/Gitlab

About Git

Git is a free and open source version control system designed to handle everything from small to very large projects with speed and efficiency. It provides lots of tools for figuring out where you have gone as you edit files, as well as merging your changes with those made by other developers. You can find more about git (and download it if necessary) at:

<http://git-scm.com/>

Pro Git

If this is the first time hearing of Git. There's this great book called ProGit. It can be found at:

<https://git-scm.com/book>

About Gitlab

KDE uses Gitlab and hosts their own code on their private Edition of Gitlab:

<https://invent.kde.org/explore>

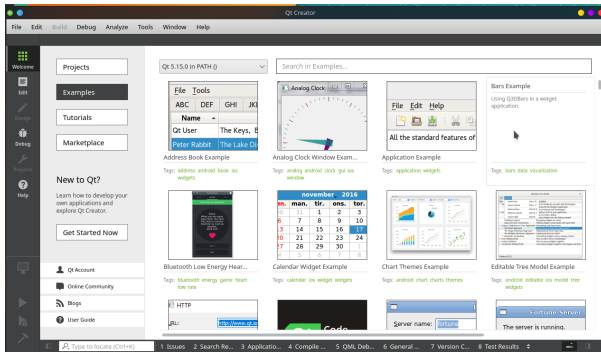
An IDE

An integrated development environment (IDE) allows you to do project management, testing, and other activities in a convenient way alongside your coding. We recommend that you install one of the following IDEs and do your KDE development work within it.

We recommend QtCreator for its ease of use and features, especially its built-in text editor. But it's nice to know, if you're familiar with KDevelop already, that you can use that for KDE development too.

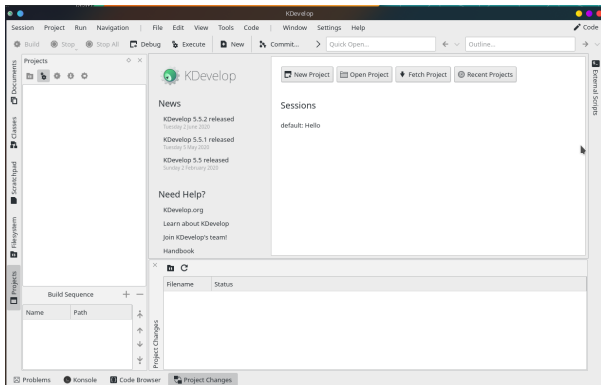
QT Creator

Qt Creator is a cross-platform C++, JavaScript and QML integrated development environment which simplifies GUI application development. It is part of the SDK for the Qt GUI application development framework and uses the Qt API, which encapsulates host OS GUI function calls.



KDevelop

KDevelop is a free and open-source integrated development environment (IDE) for Unix-like computer operating systems and Windows. It provides editing, navigation and debugging features for several programming languages, and integration with build automation and version-control systems, using a plugin-based architecture.



CMake

CMake is KDE's build system of choice. Once you have this, you can use it to configure a software project for building, and that process will tell you of any other requirements you are missing.
NOTE: KDE Frameworks can also be used in QMake-based projects.

Testing

Bugs

Appendix A: Getting Help

KDE IRC Channels

The main IRC Channels on Freenode are:

Table 2. Developer/Support Channels

Channels:
Developer
#kde - Main channel for users of KDE software
#kde-bugs - For KDE BugSquad
#kde-devel - For general KDE development
#kde-docs - Official KDE Documentation Project
#kde-quality - For KDE quality assurance
Support
#kde-chat - For Off-Topic discussions
#kde-i18n - Localization team
#kde-promo - Promotion and communication team
#kde-soc - The channel for Google Summer of Code and Code In students
#kde-vdg - KDE V Design Group channel
#kde-women - Women who use KDE software
#kde-www - The channel for discussion regarding the KDE community web sites

Table 3. Communities by Country

#kde-ar - KDE software in the Argentine
#kde-be - KDE software in Belgium
#kde-brasil - KDE software in Brazil
#kde-cn - KDE software for Chinese speakers
#kde-de - KDE software in Germany
#kde-el - KDE software in Greece
#kde-es - KDE software in Spain
#kde-fi - KDE software in Finland
#kde-fr - KDE software for French speakers
#kde-gl - KDE software for Galician speakers
#kde-in - KDE software in India
#kde-ir - KDE software in Iran
#kde-italia - Italian user support
#kde-latam - KDE software in Latin America
#kde-nl - KDE software in the Netherlands
#kde-pt - KDE software in Portugal
#kde.hu - KDE software for Hungarian speakers
#kde_ru - KDE software for Russian speakers
#kdehispano - KDE software for Spanish speakers
More IRC Channels found:
IRC_Channels

KDE Mailing Lists

The KDE mailing lists are one of the main communication channels in the KDE Community. This is a list of general mailing lists to give a quick overview. For application specific lists, please see the application's page. For a complete overview, see the full list of all mailing lists at:

[KDE Mailing Lists](#)

General User Lists

- kde - for KDE users with questions strictly about KDE applications ([subscribe kde](#), [archive of kde](#))
- kde-announce - announcements of new KDE releases, security announcements, and notification of new KDE applications (very low traffic) ([subscribe kde-announce](#), [archive of kde-announce](#))

General development lists

- kde-devel - for application developers (both applications in central KDE packages and contributed applications) ([subscribe kde-devel](#), [archive of kde-devel](#))