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GitHub Fundamentals

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API Styles Fundamentals

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Understanding trade-offs and choosing the correct solution for your architecture

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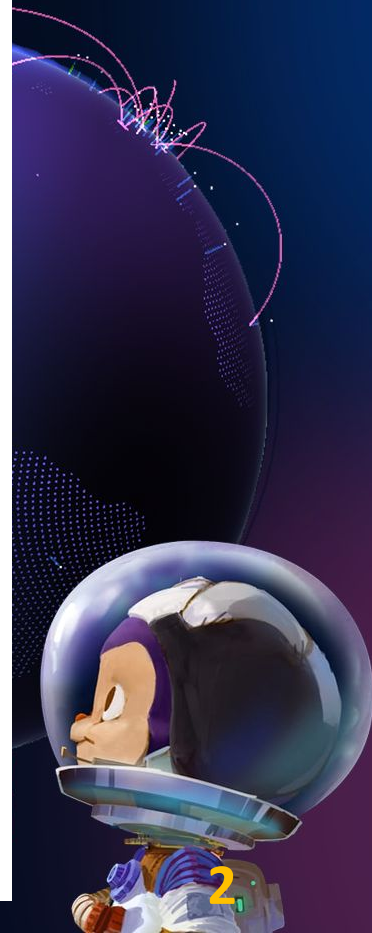
In this course, you'll:

- Learn how a variety of APIs are designed
- Understand the differences among API communication methods
- Learn which API design decisions are best for which use cases

Course description

If you only have a hammer, everything begins to look like a nail, but sticking with a single API style is limiting. Nowadays, a service or microservice has several APIs, and they must all be well-defined.

Join expert Lukasz Dynowski to broaden your API style palette. You'll examine the best types of APIs for your use cases as well as the design decisions you must make for RESTful APIs, GraphQL APIs, Websockets API, gRPC API, and messaging protocols. You'll learn how to design a variety of APIs, recognize the trade-offs among them, and understand where to use each one for the best communication among applications.





Objectives

GitHub Repository	CI/CD
GitHub Codespaces	Docker
GitHub Pull Requests	Git
GitHub Templates	Markdown
GitHub Releases / Tag	Microservices
GitHub Issues	Free Software
GitHub Actions	Open Source
GitHub Wikis	GitHub is your CV
GitHub Pages	
GitHub Advanced Search	





GitHub in Numbers



94+ million Developers



200+ million Repositories



3+ million Organizations



90% Fortune 500





How did we arrived here?

Unix	1970	AT&T Bell Labs
GNU	1983	GNU Project
GCC	1987	GCC + Libs
GPL	1989	4 Freedoms
Linux Kernel	1991	Linux Kernel
Open Source	1998	Netscape
GIT	2005	BitKeeper
GitHub	2008	Logical Awesome LLC
	2021	





Free Software & Open Source



Richard Stallman



Bruce Perens



Eric Raymond





What does “free software” mean?

User has freedom to:

- **Run** the program as you wish, for any purpose.
- **Study** how the program works and change it, so it does your computing as you wish.
- **Redistribute** copies so you can help others.
- **Distribute** copies of your modified versions to others.

Access to the source code is a precondition for this!

<https://www.gnu.org/philosophy/free-sw.en.html>





What does “**open source**” mean?

The software is:

- **Redistributed** for free.
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- The software can be **modified and distributed** in a different format from the original software.
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- The software should **not restrict the usage of other software**.

<https://opensource.org/osd>





Free software **vs** Open source

Free Software

Social movement.

Free software focus on the user's freedom to use the program, to modify it, and to share it.



Open source

Open source is a development methodology.

Open-source focus on the availability of the source code and the ability to modify and share it.





Is Public repository open source?

Public **≠** Open Source

Anyone can view and fork your public project, but your work comes with no permissions.

What if you don't apply an open source license?

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200+

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Users	< 1%	Kubernetes, GitLab	Linux Kernel, Gimp			





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<https://blog.usejournal.com/understanding-open-source-and-free-software-licensing-c0fa600106c9>





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