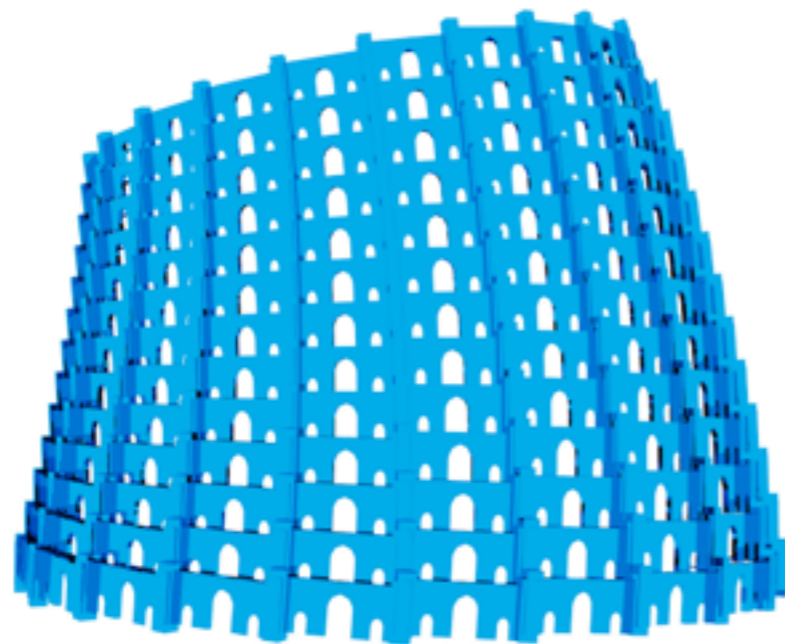


# Software development for startup entrepreneurs

Prof. Dr. Ralf Lämmel  
University of Koblenz-Landau  
Faculty of Computer Science  
Software Languages Team



# SOFTLANG

Creative Commons License: softlang.logos by Wojciech Kwasnik, Archina Void, Ralf Lämmel, Software Languages Team, Faculty of Computer Science, University of Koblenz-Landau is licensed under a Creative Commons Attribution 4.0 International License

# Challenges of software development for startups

# <https://www.entrepreneurs-journey.com/10226/the-challenge-of-developing-a-software-startup/>

The Challenge Of Developing A Software Startup

By Yaro Starak  
24 Comments

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13 SHARES

I've been working on [CrankyAds.com](http://CrankyAds.com) now for over a year, although there have been a few start-stop sessions, so it hasn't been exactly all-steam ahead during that time.

Developing software is a lot of fun, when you have the people who can make your vision a reality. Thinking of how you want something to work in your head and then seeing it work in real life is very gratifying.

On the flipside though, it's just as frustrating to realize how many features you are NOT including because you simply don't have the funds or the manpower to complete them.

When I first began development of CrankyAds I figured a *quick and dirty* version could be done in a couple of months to offer the core features. The development company I hired seemed to agree, and quoted a timeframe that slightly exceeded my expectations (although I always add one or two extra months on top of my



# <http://www.socalcto.com/2009/12/startup-software-development-do-your.html>



WEDNESDAY, DECEMBER 9, 2009

## Startup Software Development – Do Your Homework Before You Develop Anything



I just had an all-too common conversation with the founder of a startup who had spent more than a year working with a software development company who had produced a mess. The mess really comes from a developer who was willing to get started on a product that was not fully thought out.

I always take a very different approach in early conversations. If I'm being asked to do startup software development, I'm going to push fairly hard on key questions that the startup needs to have answered before they develop anything. Some founders are taken aback. They are calling me to go build what they tell me to build. Why would I question whether they've done their homework? And most often I only know enough about their business to be dangerous. So why ask all these questions if I might lose a potential client?

If I don't ask the questions and do a little bit of homework, then likely we will end up with a mess.

So what are the questions I'm likely going to ask?

### ABOUT ME



 TONY KARRER

 Follow 2.9k

Dr. Tony Karrer works as a part-time CTO for startups and midsize software companies - helping them get product out the door and turn around technology issues. He is considered one of the top technologists in eLearning and is known for working with numerous startups including being the original CTO for eHarmony for its first four years. Dr. Karrer taught Computer Science for eleven years. He has also worked on projects for many Fortune 500 companies including Credit Suisse, Royal Bank of Canada, Citibank, Lexus, Microsoft, Nissan, Universal, IBM, Hewlett-Packard, Sun Microsystems, Fidelity Investments, Symbol Technologies and SHL Systemhouse. Dr. Karrer was valedictorian at Loyola Marymount University,

<http://www.softwarebyrob.com/2011/08/24/lessons-learned-from-a-software-developers-first-attempt-at-launching-a-startup/>

# Software by Rob

Lessons Learned by a Serial Startup Founder

[home](#) [about](#) [press](#) [micropreneurs](#) [archives](#)

← [Why Making Something Customers Want Isn't Enough](#)

[Ten Highly Successful Bootstrapped Startups](#) →

## Lessons Learned from a Software Developer's First Attempt at Launching a Startup

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If you're trying to grow your startup you've come to the right place. Get my 170-page ebook on how to grow a startup and join thousands of self-funded entrepreneurs by subscribing to my newsletter at right.

*This is a guest article by Karl Falconer. Karl is a software engineer with more than 10 years of experience who specializes in agile web development and web services integrations. He authors a software development blog at <http://www.falconerdevelopment.com/>.*

<http://www.infoq.com/articles/what-do-we-know-about-software-development-in-startups>

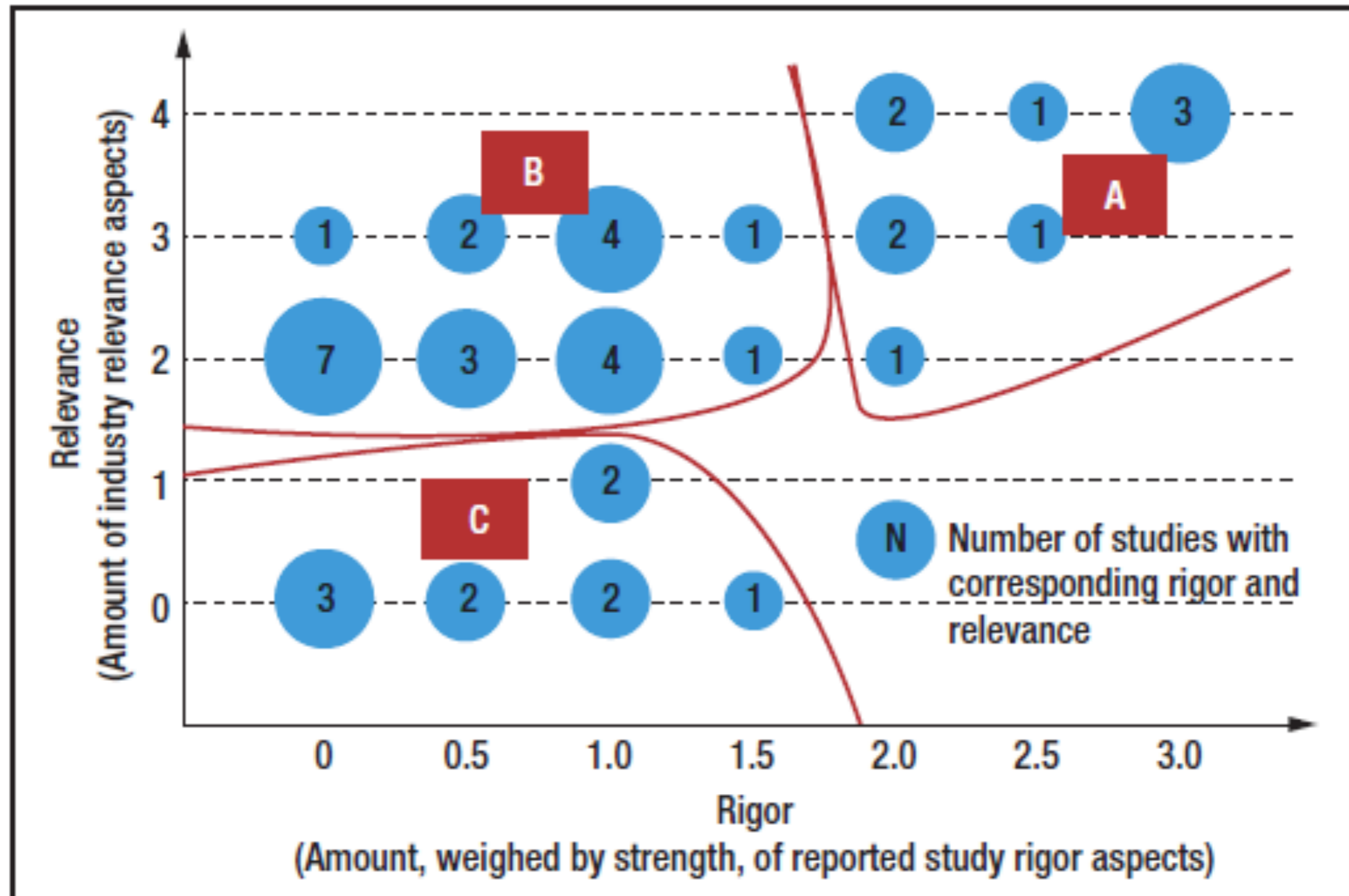
Startups are newly created companies with little or no history of facing high volatility in technologies and markets. In the US alone, 476,000 new businesses are established each month,<sup>1</sup> accounting for nearly 20 percent of job creation.<sup>2</sup> As such, startups are an important factor in the economy. However, the environment of startups is dynamic, unpredictable, and even chaotic, forcing entrepreneurs to act quickly, fail fast, and learn faster to find a market niche and acquire a sustainable income. Sixty percent of startups don't survive the first five years, and 75 percent of venture capital funded startups fail.<sup>3</sup> Most of this is due to the high risk of startups, missed market windows, and other business reasons. To what extent engineering practices impact this high failure rate is still unknown given the premature state of research. We present a detailed investigation and collection of all known empirical software engineering sources related to startups and their engineering practices, as well as an analysis of how accurate and reliable this available evidence is.<sup>4</sup> We see this as a first critical step into a largely unknown area—the world of software engineering practices in startups.

# <http://www.infoq.com/articles/what-do-we-know-about-software-development-in-startups>

Theme	Description
Lack of resources	Economical, human, and physical resources are extremely limited.
Highly reactive	Startups are able to quickly react to changes in the underlying market, technologies, and product (compared to more established companies).
Innovation	Given the highly competitive ecosystem, startups need to focus on and explore highly innovative segments of the market.
Uncertainty	Startups deal with a highly uncertain ecosystem under different perspectives: market, product features, competition, people, and finance.
Rapidly evolving	Successful startups aim to grow and scale rapidly.
Time pressure	The environment often forces startups to release fast and to work under constant pressure (terms sheets, demo days, investors' requests).
Third-party dependency	Due to lack of resources, startups heavily rely on external solutions to build their product: external APIs, open source software, outsourcing, COTS, and so on.
Small team	Startups start with a small number of individuals.
One product	Company activities gravitate around one product/service only.
Low-experienced team	A good part of the development team is formed by people with less than five years of experience and often recently graduated students.
New company	The company has been recently created.
Full organization	Startups are usually founder-centric, and everyone in the company has big responsibilities, with no need for upper management.
Highly risky	The failure rate of startups is extremely high.
Not self-sustained	Especially in the early stage, startups need external funding to sustain their activities (venture capitalist, angel investments, personal funds, and so on).
Little working experience	The basis of an organizational culture isn't present initially.

# Does research understand how software development in startups? (Rather not.)

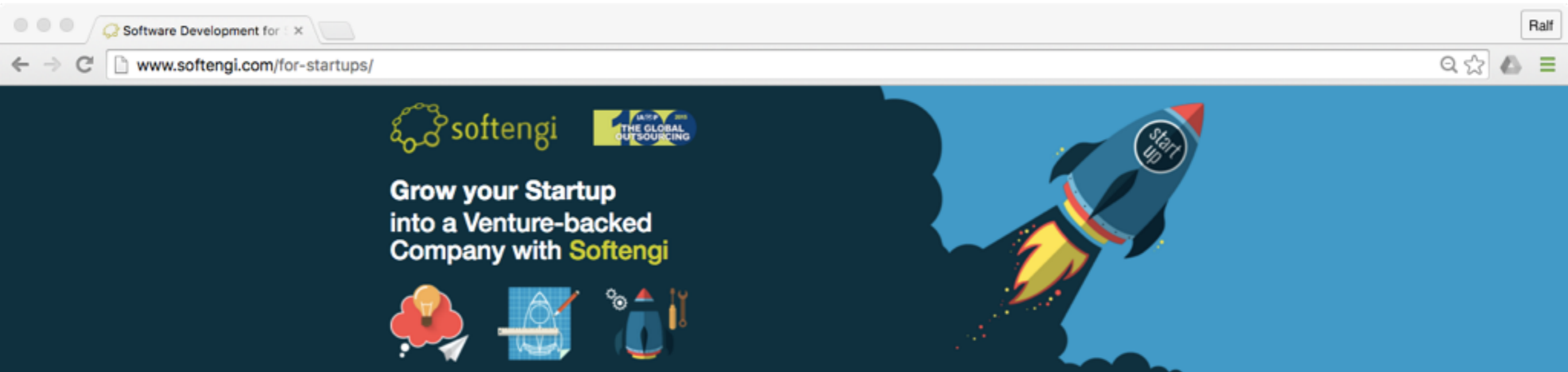
<http://www.infoq.com/articles/what-do-we-know-about-software-development-in-startups>





You could even depend on other companies to develop your software.

# <http://www.softengi.com/for-startups/>



Being a **STARTUP GENIUS**, you know about the challenges any talented individual like yourself, is facing: limited budget, lack of human resources, strict deadlines, no time for marketing and promotion.

**DO NOT LET ANYONE STOP YOU!**  
**CHOOSE **SOFTENGI** AS YOUR TECHNOLOGY PARTNER**



#### **PAY AS YOU GO**

Divide your project into steps and pay for each one separately.



#### **PROFESSIONAL INVOLVEMENT**

The Softengi team not only writes code for you, it contributes.



#### **FOCUS ON MARKETING & PROMO**

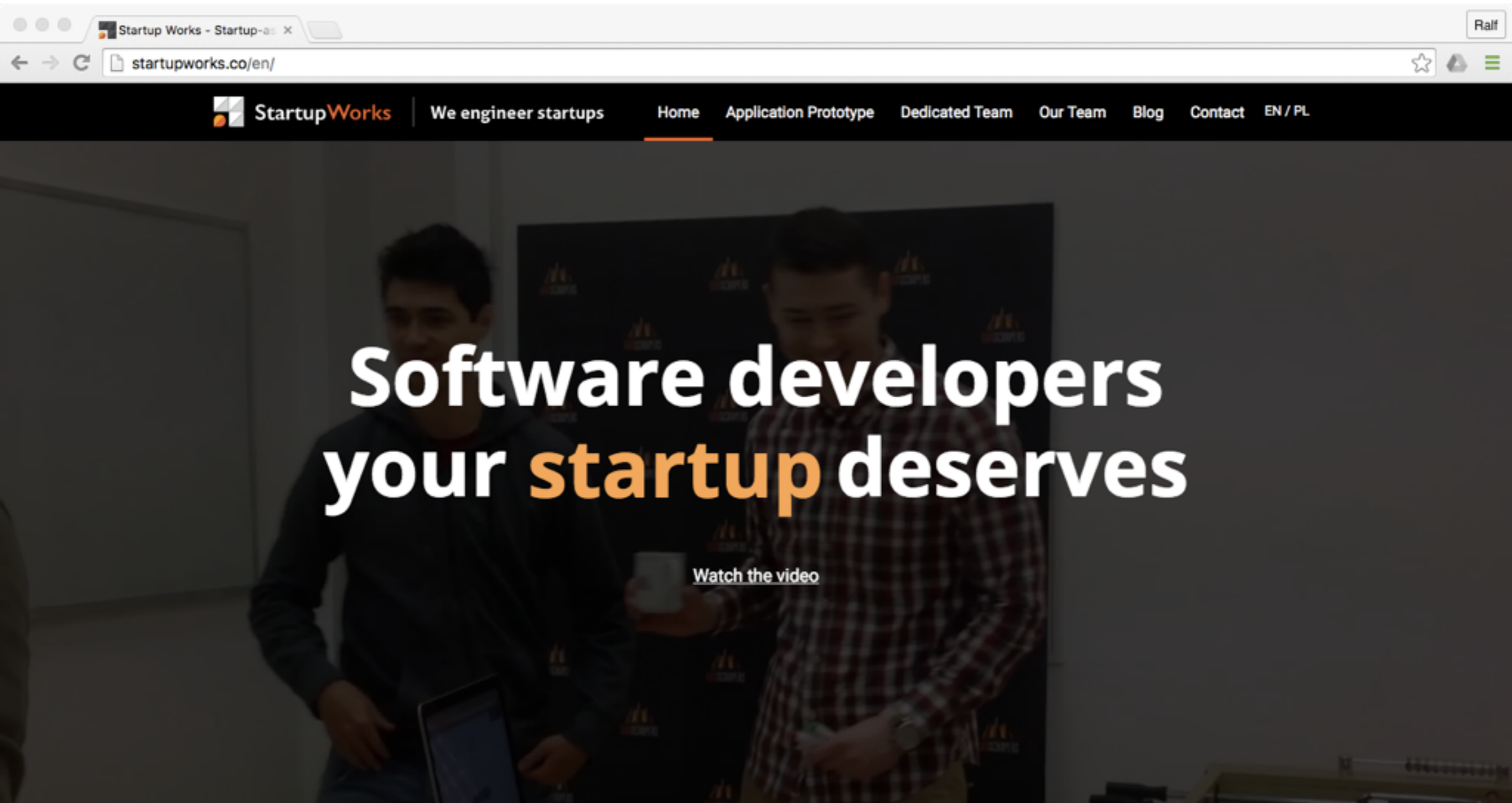
Leave development, testing and support to us.



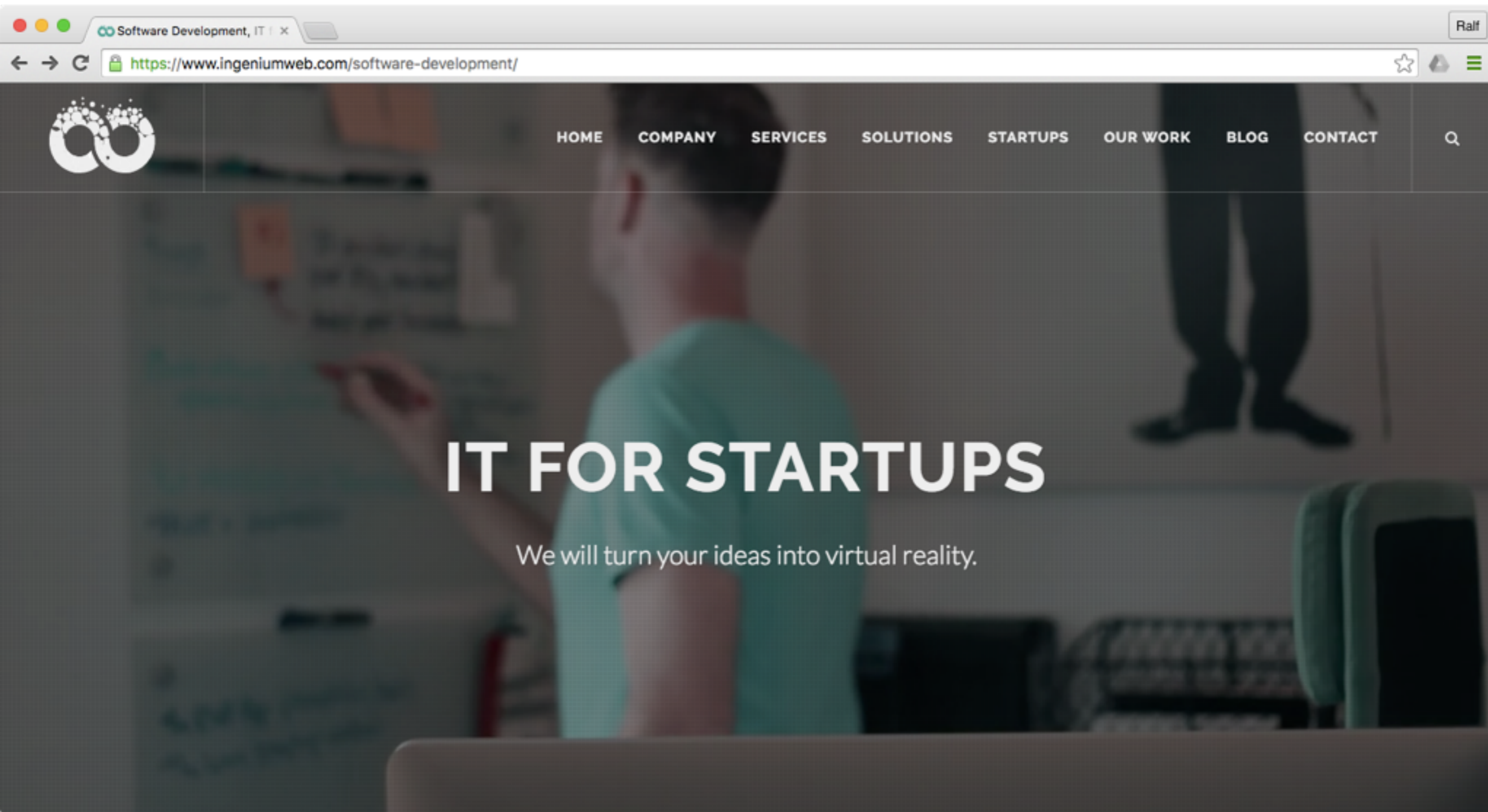
#### **BE ON TIME**

Softengi possesses sufficient resources to make sure your project is delivered on time.

<http://startupworks.co/en/>



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software-development/](https://www.ingeniumweb.com/software-development/)




# <https://itechcraft.com/solutions/for-startups/>

Software Development for : x Ralf

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## Software Development for Startups

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**We love startups.**

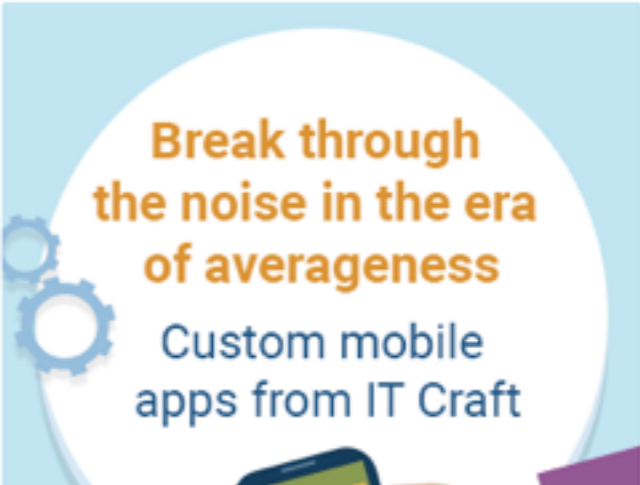
Smart people have great ideas, and IT Craft has the necessary experience and technical expertise to help implement them. That is a perfect match. We help entrepreneurs get their dream companies up and running. As a provider of software development services for startups, we developed applications ranging from educational apps to apps for flight planning.

At IT Craft, project managers use [Agile methodologies](#). That's why you won't lose precious time. Let us discuss your ideas today and assign a dedicated team headed by a senior project manager tomorrow.



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# Key concepts

- App stores
- **File hosting services**
- **Revision control systems**
- **Source code hosting facilities**
- **Software package platform**
- **Software configuration management**
- **Continuous integration**
- **Web API**
- **Social coding**
- **Lean software methodology**
- **Rapid application development**
- **Agile software development**
- **Extreme programming**
- Software design
- Software testing
- Software deployment
- Problem reporting and tracking
- Open source

# File hosting service

[https://en.wikipedia.org/wiki/File\\_hosting\\_service](https://en.wikipedia.org/wiki/File_hosting_service)

A **file hosting service**, **cloud storage service**, **online file storage provider**, or **cyberlocker** is an **Internet hosting service** specifically designed to host user **files**. It allows users to upload files that could then be accessed over the internet from a different computer, **tablet**, **smart phone** or other networked device, by the same user or possibly by other users, after a password or other authentication is provided. Typically, the services allow **HTTP** access, and sometimes **FTP** access. Related services are content-displaying hosting services (i.e. **video** and **image**), **virtual storage**, and **remote backup**.

See also **file sync and sharing services**.

<https://en.wikipedia.org/wiki/>

# Comparison of file hosting services

Web host	Storage size	Max. file size	Direct access <sup>[1 1]</sup>	Traffic or bandwidth limit	File expiration <sup>[1 2]</sup>	Remote uploading?	Developer API?
<b>Amazon Cloud Drive</b> <sup>[2]</sup>	5 GB 3mo. free trial, unlimited GB paid	2 GB upload via Web, 10 GB download	Yes	Amazon S3 limits	90days after subscription expires data is deleted.	No	Yes
<b>Amazon S3</b> <sup>[3]</sup>	5 GB 12-month free trial with credit-card, paid bandwidth, Unlimited paid	5 GB per file, unlimited files per bucket	Yes	Amazon S3 limits	None, pay for storage each month	No	REST, SOAP
<b>Asus WebStorage</b> <sup>[4]</sup>	5 GB free, Up to 5 TB paid	500 MB free, 1–2 GB paid	No <sup>[5]</sup>	500 MB per 30 min free, 1 to 8 TB per month paid <sup>[6][7]</sup>	?	No	No
<b>Baidu Cloud</b>	2 TB (6 GB) free <sup>[8]</sup>	20 GB Windows paid, 4 GB Mac & free	Yes	None	None	Yes	Yes
<b>Bitcasa</b>	5-20 GB free, 1TB and 10TB Paid Plans	None through desktop client. <sup>[9]</sup>	Yes	None	None	Yes	Yes



# Revision control systems

[https://en.wikipedia.org/wiki/Revision\\_Control\\_System](https://en.wikipedia.org/wiki/Revision_Control_System)

The **Revision Control System (RCS)** is a software implementation of **revision control** that automates the storing, retrieval, logging, identification, and merging of revisions. RCS is useful for text that is revised frequently, for example **programs**, documentation, procedural graphics, papers, and form letters. RCS is also capable of handling binary files, though with reduced efficiency. Revisions are stored with the aid of the **diff** utility.

# Comparison of version control software

[https://en.wikipedia.org/wiki/](https://en.wikipedia.org/wiki/Comparison_of_version_control_software)

Comparison of version control software

- CVS
- SVN
- GIT
- ...

# Source code hosting facility

<https://en.wikipedia.org/wiki/>

## Comparison of source code hosting facilities

A **source code repository** is a file archive and web hosting facility where large amounts of **source code** for software, but also for **web pages** are kept, either publicly or privately. They are often used by **open-source** projects and other multi-developer projects to handle various versions. They help developers submit patches of code in an organized fashion. Often these web sites support **version control**, **bug tracking**, **release management**, **mailing lists**, and **wiki-based** documentation.

# Source code hosting facility

<https://en.wikipedia.org/wiki/>

## Comparison of source code hosting facilities

Name	Manager	Established	Server side: all free software	Client side: all-free JS code	Developed and/or used CDE	Require free software on registration	Ad-free	Cost	Notes
<b>Alioth</b>	Debian Project	2003	Yes	Yes	FusionForge	Unknown	Yes	Free	Preference for Debian related projects
<b>Assembla</b>	Assembla, Inc	2005	No	Unknown	Unknown	No	Yes	7-day free trial. Commercial projects with customizable sets of tools and features.	
<b>Betavine</b>	Vodafone	2007	No	Unknown	Unknown	No	No	Free	
<b>Bitbucket</b>	Atlassian	2008	No	No	Unknown	No	Yes	Free private repositories are limited to 5 users	

# Software package platform

[https://en.wikipedia.org/wiki/Software\\_repository](https://en.wikipedia.org/wiki/Software_repository)

Careful: Software repository is a very ambiguous term.

## Overview [\[edit\]](#)

Many software publishers and other organizations maintain servers on the [Internet](#) for this purpose, either free of charge or for a subscription fee. Repositories may be solely for particular programs, such as [CPAN](#) for the [Perl](#) programming language, or for an entire [operating system](#). Operators of such repositories typically provide a [package management system](#), tools intended to search for, install and otherwise manipulate software packages from the repositories. For example, many [Linux distributions](#) use [Advanced Packaging Tool \(APT\)](#), commonly found in [Debian](#) based distributions, or [yum](#) found in [Red Hat](#) based distributions. There are also multiple independent package management systems, such as [pacman](#), used in [Arch Linux](#) and [equo](#), found in [Sabayon Linux](#).

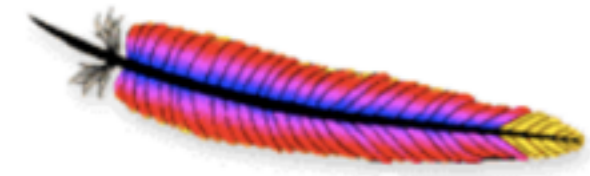
As software repositories are designed to include useful packages, major repositories are designed to be [malware](#) free. If a computer is configured to use a [digitally signed](#) repository from a reputable vendor, and is coupled with an appropriate [permissions system](#), this significantly reduces the threat of malware to these systems. As a side effect, many systems that have these capabilities do not require anti-malware software such as [anti-virus software](#).<sup>[1]</sup>

Most major [Linux distributions](#) have many repositories around the world that mirror the main repository.

# [https://en.wikipedia.org/wiki/Software\\_repository](https://en.wikipedia.org/wiki/Software_repository)

Language / purpose	Package Development Process	Repository	How to install	Collaborative development platform
C++		Boost		
Haskell	Common Architecture for Building Applications and Libraries ( <a href="#">CABAL</a> )	Hackage	[1] <a href="#">↗</a>	
Java		Maven	[2] <a href="#">↗</a>	
.NET	NuGet	NuGet	[3] <a href="#">↗</a>	
Node.js		NPM	[4] <a href="#">↗</a>	
Perl		CPAN	PPM[5] <a href="#">↗</a>	
PHP	PEAR	PECL		
Python	Setuptools	PyPI	pip, EasyInstall, PyPM	
R	R CMD check process <sup>[2][3]</sup>	CRAN <a href="#">↗</a>	install.packages <a href="#">↗</a>	R-Forge <a href="#">↗</a>
		Bioconductor	BiocLite.R <a href="#">↗</a>	
Ruby	RubyGems	Ruby Application Archive		RubyForge
TeX, LaTeX		CTAN		

# <https://commons.apache.org/>



**Apache Commons**<sup>TM</sup>  
<http://commons.apache.org/>

Apache Commons<sup>TM</sup>

Last Published: 06 April 2016 | Version: 15

[Components](#)

[Sandbox](#)

[Dormant](#)

[ApacheCon](#)

[Apache](#)

## COMMONS

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[PMC](#)

▶ [Components](#)

▶ [Sandbox](#)

▶ [Dormant](#)

## RELEASES

## Welcome to Apache Commons

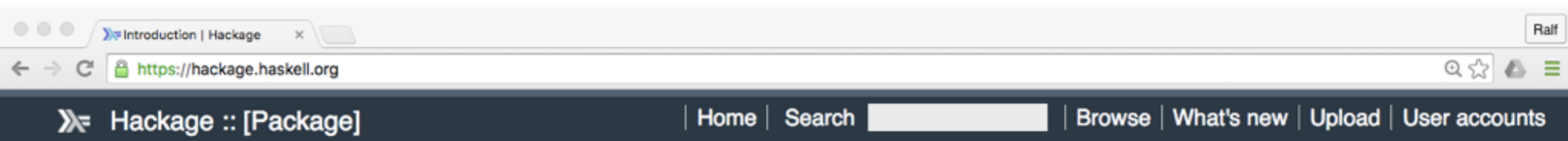
Apache Commons is an Apache project focused on all aspects of reusable Java components.

The Apache Commons project is composed of three parts:

- [The Commons Proper](#) - A repository of reusable Java components.
- [The Commons Sandbox](#) - A workspace for Java component development.
- [The Commons Dormant](#) - A repository of components that are currently inactive.

You may also read our [charter](#), which spells out the goals of the project in greater detail.

# <https://hackage.haskell.org/>



## Welcome to Hackage!

**Hackage** is the Haskell community's central package archive of open source software. Package authors use it to publish their libraries and programs while other Haskell programmers use tools like **cabal-install** to download and install packages (or people get the packages via their distro).

This web interface to Hackage lets you:

- **Browse** the packages (sorted by category)
- **Search** for packages by keyword (in the name or description)
- See what packages have been **uploaded recently**
- **Upload** your own packages to Hackage (note that you'll need an **account**)

Each package includes:

- A description of what it does
- Licence information
- Author information
- A downloadable gzipped tarball
- A list of modules in the package
- Haddock documentation (if available) with source links


Guidelines for Hackage Packages:

- All packages should follow the **Package Versioning Policy (PVP)**.
- Packages cannot be deleted, so you should consider uploading new versions packages as a **package candidate** and testing before publishing it to the main index.



# <http://search.maven.org/>



 Status

## The Central Repository

Serving Open Source Components Since 2002

### Publish Your Project

Automatically publish your project and reach millions of developers.

[Learn how »](#)

### Effective Development

Out-of-the-box support for the tools you already use.

[Use the Central Repository »](#)

### Browse & Search

See what's available in the largest curated Java repository.

[Take a look »](#)

### Not Just Artifacts

Metadata to support tooling, security features, and more.

[Find out more »](#)

### Quick Links

[FAQ](#)

[Support](#)

[Search](#)

### News & Updates

[Free Video Series - Easy Publishing to the Central Repository](#)

Tue 02 February 2016

### Why Use Central?

#### Ease of Use

The Central Repository is the the default repository for Apache Maven, SBT and other build systems and can be easily used from Apache Ant/Ivy, Gradle and many other tools.

#### Ubiquitous

Open source organizations such as the Apache Software Foundation, the Eclipse

### And Publishing is *Easy!*

#### Requirements

There are some minimal [requirements](#) for publishing your component to the Central Repository. These are things that the community has insisted upon: in short, the basic elements of quality *metadata* that developers rely on.

#### Register Your Project

# https://pypi.python.org/pypi



The screenshot shows the PyPI website homepage. At the top, there is a search bar and a navigation menu. The main content area features a header for 'PyPI - the Python Package Index' and a brief description of the repository. Below this, there are three columns of information: 'Get Packages', 'Package Authors', and 'Infrastructure'. At the bottom, a table lists recent updates to packages.

**PACKAGE INDEX** »

- Browse packages
- Package submission
- List trove classifiers
- List packages
- RSS (latest 40 updates)
- RSS (newest 40 packages)
- Python 3 Packages
- PyPI Tutorial
- PyPI Security
- PyPI Support
- PyPI Bug Reports
- PyPI Discussion
- PyPI Developer Info

**ABOUT** »

**NEWS** »

**DOCUMENTATION** »

**DOWNLOAD** »

**COMMUNITY** »

**FOUNDATION** »

**CORE DEVELOPMENT** »

## PyPI - the Python Package Index

The Python Package Index is a repository of software for the Python programming language. There are currently **78825** packages here.

To contact the PyPI admins, please use the [Support](#) or [Bug reports](#) links.

**Not Logged In**

- [Login](#)
- [Register](#)
- [Lost Login?](#)
- Use [OpenID](#) 
- [Login with Google](#) 

**Status**

Nothing to report

**Get Packages**

To use a package from this index either "`pip install package`" ([get pip](#)) or download, unpack and "`python setup.py install`" it.

**Package Authors**

Submit packages with "`python setup.py upload`". The index [hosts package docs](#). You may also use the [web form](#). You must [register](#). Testing? Use [testpypi](#).

**Infrastructure**

To interoperate with the index use the [JSON](#), [OAuth](#), [XML-RPC](#) or [HTTP](#) interfaces. Use [local mirroring](#) or [caching](#) to make installation more robust.

Updated	Package	Description
2016-04-18	<a href="#">nester_by_rus1un 1.4.1</a>	UNKNOWN
2016-04-18	<a href="#">Dulwich 5.2.5</a>	Dulwich: A collection of Python utilities

# Software configuration management

[https://en.wikipedia.org/wiki/Software\\_configuration\\_management](https://en.wikipedia.org/wiki/Software_configuration_management)

In software engineering, **software configuration management (SCM or S/W CM)**<sup>[1]</sup> is the task of tracking and controlling changes in the software, part of the larger cross-disciplinary field of **configuration management**.<sup>[2]</sup> SCM practices include **revision control** and the establishment of **baselines**. If something goes wrong, SCM can determine what was changed and who changed it. If a configuration is working well, SCM can determine how to replicate it across many hosts.

# Comparison of open-source configuration management software

[https://en.wikipedia.org/wiki/Comparison\\_of\\_open-source\\_configuration\\_management\\_software](https://en.wikipedia.org/wiki/Comparison_of_open-source_configuration_management_software)

	Language	License	Mutual auth	Encrypts	Verify mode	Agent-less	Have a GUI
<b>Ansible</b>	Python	GPL	Yes <sup>[1]</sup>	Yes <sup>[2]</sup>	Yes	Yes	Yes <sup>[3]</sup> (Free 30-day Trial)
<b>Bcfg2</b>	Python	BSD <sup>[5]</sup>	Yes <sup>[6]</sup>	Yes <sup>[7]</sup>	Yes <sup>[8]</sup>	No	Yes <sup>[9]</sup>
<b>BundleWrap</b>	Python	GPL	Yes <sup>[1]</sup>	Yes <sup>[2]</sup>	Yes	Yes	No
<b>Capistrano</b>	Ruby	MIT License		Yes <sup>[2]</sup>			
<b>cdist</b>	Python	GPL	Yes <sup>[1]</sup>	Yes <sup>[2]</sup>		Yes	
<b>Chef</b>	Ruby, Erlang	Apache	Yes <sup>[12]</sup>	Yes <sup>[13]</sup>	Yes <sup>[14][15]</sup>	No	Yes

# Continuous integration

[https://en.wikipedia.org/wiki/Continuous\\_integration](https://en.wikipedia.org/wiki/Continuous_integration)

**Continuous integration (CI)** is the practice, in **software engineering**, of merging all developer working copies to a shared **mainline** several times a day. It was first named and proposed by **Grady Booch** in his **1991 method**,<sup>[1]</sup> although Booch did not advocate integrating several times a day. It was adopted as part of **extreme programming (XP)**, which did advocate integrating more than once per day, perhaps as many as tens of times per day.

# Comparison of continuous integration software

[https://en.wikipedia.org/wiki/Comparison\\_of\\_continuous\\_integration\\_software](https://en.wikipedia.org/wiki/Comparison_of_continuous_integration_software)

Name	Platform	License	Windows builders	Java builders	Other builders	Notification	IDE Integration	Other Integration
AnthillPro	Cross-platform	Proprietary	MSBuild, NAnt, Visual Studio	Ant, Maven 1, 2, & 3	Shell script, Batch script, Cross-platform command-line, Groovy, Make, RTC Jazz, TFS Build, Custom Script Interpreter	E-mail, XMPP/Jabber, RSS, Systray	Eclipse, Visual Studio	(many)
Apache Continuum	JDK, Servlet Container	Apache 2.0	Unknown	Maven 1 & 2 & 3	Shell script <sup>[1]</sup>	Mail, Jabber and Google Talk, MSN, IRC, report deployment with wagon	Unknown	Unknown
Apache Gump	Python	Apache 2.0	Unknown	Ant, Maven 1	Unknown	E-mail	Unknown	Unknown
AppVeyor CI	Hosted	Proprietary	Visual Studio, MSBuild, Psake	No	Custom Script, PowerShell	E-mail, HipChat, Slack, Catlight	No	GitHub, Bitbucket, Kiln, Windows Azure

...

# Web API

[https://en.wikipedia.org/wiki/Web\\_API](https://en.wikipedia.org/wiki/Web_API)

A **web API** is an **application programming interface (API)** for either a **web server** or a **web browser**. It is a **web development** concept, usually limited to a **web application's** client-side (including any **web frameworks** being used), and thus usually does not include web server or browser implementation details such as **S APIs** or **web browser engine APIs** unless publicly accessible by a remote web application.

# Popular Web APIs

<http://www.programmableweb.com/news/most-popular-apis-least-one-will-surprise-you/2014/01/23>

## Most Popular APIs: At Least One Will Surprise You

[News](#), [News Services](#), [API](#), [Directories](#), [Mapping](#), [Mashups](#), [Social](#), [Travel](#), [Video](#), [Weather](#)

Jan. 23 2014 By [Adam DuVander](#)



There are a number of ways to discuss API popularity. One of the common methods *ProgrammableWeb* has used is by mashups, the number of completed apps. However, there may be a leading indicator before developers have even started writing code. The "track" functionality on *ProgrammableWeb* lets developers declare an interest in receiving updates on particular APIs. By diving into this data we can see many things. For example, recently developers have loved travel. Overall, social and visual APIs rule.

Related: [Top 10 Weather APIs](#)

### Top 10 tracked APIs of all time

1. [Facebook](#)



# Social coding

# GitHub's CEO, Tom Preston-Werner

(Source: <https://vsanywhere.com/web/what-is-social-coding/>)

We like the ideas of social networking. We think that developers work more effectively when they work together. So let's take the ideas of a social network and add on top of that code hosting, and let's create a site that makes it easy to share and collaborate on code.

# Margaret Rouse's definition:

(Source: <http://whatis.techtarget.com/definition/social-coding>)

DEFINITION

## social coding



*Part of the [Agile, Scrum, XP glossary](#):*


Social coding is an approach to software development that places an emphasis on formal and informal collaboration.

Although the term is often associated with social coding websites such as [GitHub](#), BitBucket, CodePlex and Google Code, the term can be used to describe any development environment that encourages discussion and sharing.

*This was last updated in June 2012*

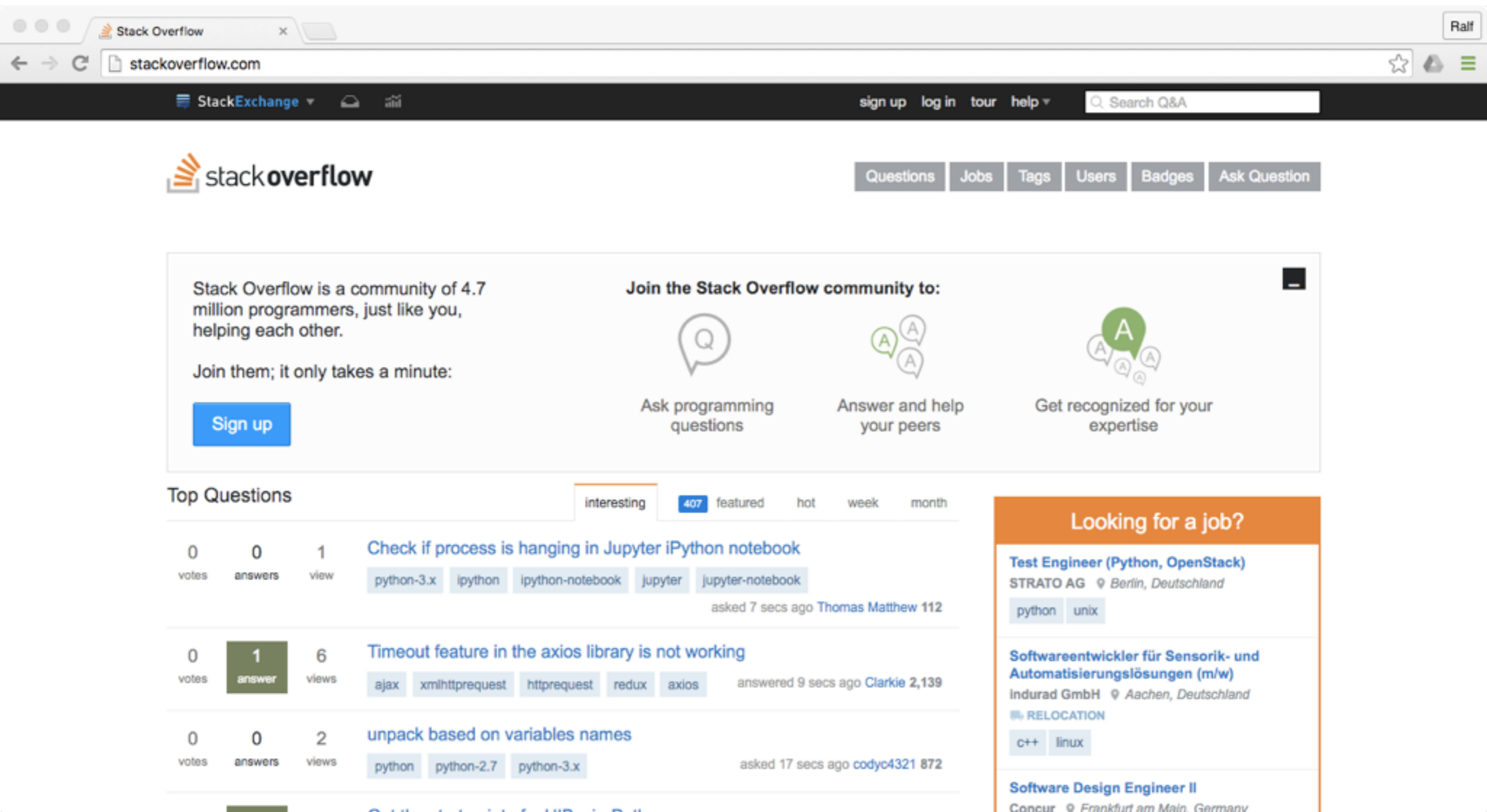
*Posted by: [Margaret Rouse](#)*

<https://github.com/>



The image is a screenshot of a web browser displaying the GitHub homepage. The browser's address bar shows the URL <https://github.com/>. The page features a navigation bar with links for 'Personal', 'Open source', 'Business', and 'Explore', along with 'Pricing', 'Blog', and 'Support'. A search bar and 'Sign in'/'Sign up' buttons are also present. The main content area has a large heading 'How people build software' and a sub-heading 'Millions of developers use GitHub to build personal projects, support their businesses, and work together on open source technologies.' A small figurine of the GitHub mascot, Octocat, is visible on the left. On the right, there is a sign-up form with three input fields: 'Pick a username', 'Your email address', and 'Create a password'. Below the password field is a note: 'Use at least one letter, one numeral, and seven characters.' A prominent green button labeled 'Sign up for GitHub' is positioned below the form. At the bottom of the form, there is a disclaimer: 'By clicking "Sign up for GitHub", you agree to our **terms of service** and **privacy policy**. We'll occasionally send you account related emails.'

# <http://stackoverflow.com/>



The screenshot shows the Stack Overflow homepage in a browser. The browser's address bar displays 'stackoverflow.com'. The page header includes the Stack Overflow logo, navigation links for 'Questions', 'Jobs', 'Tags', 'Users', 'Badges', and 'Ask Question', and a search bar. A central banner promotes joining the community, highlighting the ability to ask questions, help others, and gain recognition. Below this, the 'Top Questions' section is visible, featuring a list of recent questions with their respective vote counts, answer counts, and view counts. The first question is 'Check if process is hanging in Jupyter iPython notebook', the second is 'Timeout feature in the axios library is not working', and the third is 'unpack based on variables names'. On the right side, there is a 'Looking for a job?' section with three job listings: 'Test Engineer (Python, OpenStack)' at STRATO AG, 'Softwareentwickler für Sensorik- und Automatisierungslösungen (m/w)' at Indurad GmbH, and 'Software Design Engineer II' at Concur.

Stack Overflow is a community of 4.7 million programmers, just like you, helping each other.

Join them; it only takes a minute:

[Sign up](#)

Join the Stack Overflow community to:

- Ask programming questions
- Answer and help your peers
- Get recognized for your expertise

Top Questions

interesting 407 featured hot week month

votes	answers	view	question	tags	asked	author
0	0	1	Check if process is hanging in Jupyter iPython notebook	python-3.x ipython ipython-notebook jupyter jupyter-notebook	asked 7 secs ago	Thomas Matthew 112
0	1	6	Timeout feature in the axios library is not working	ajax xmlhttprequest httprequest redux axios	answered 9 secs ago	Clarkie 2,139
0	0	2	unpack based on variables names	python python-2.7 python-3.x	asked 17 secs ago	codyc4321 872

Looking for a job?

- Test Engineer (Python, OpenStack)**  
STRATO AG *Berlin, Deutschland*  
python unix
- Softwareentwickler für Sensorik- und Automatisierungslösungen (m/w)**  
Indurad GmbH *Aachen, Deutschland*  
RELOCATION  
c++ linux
- Software Design Engineer II**  
Concur *Frankfurt am Main, Germany*

# Jive

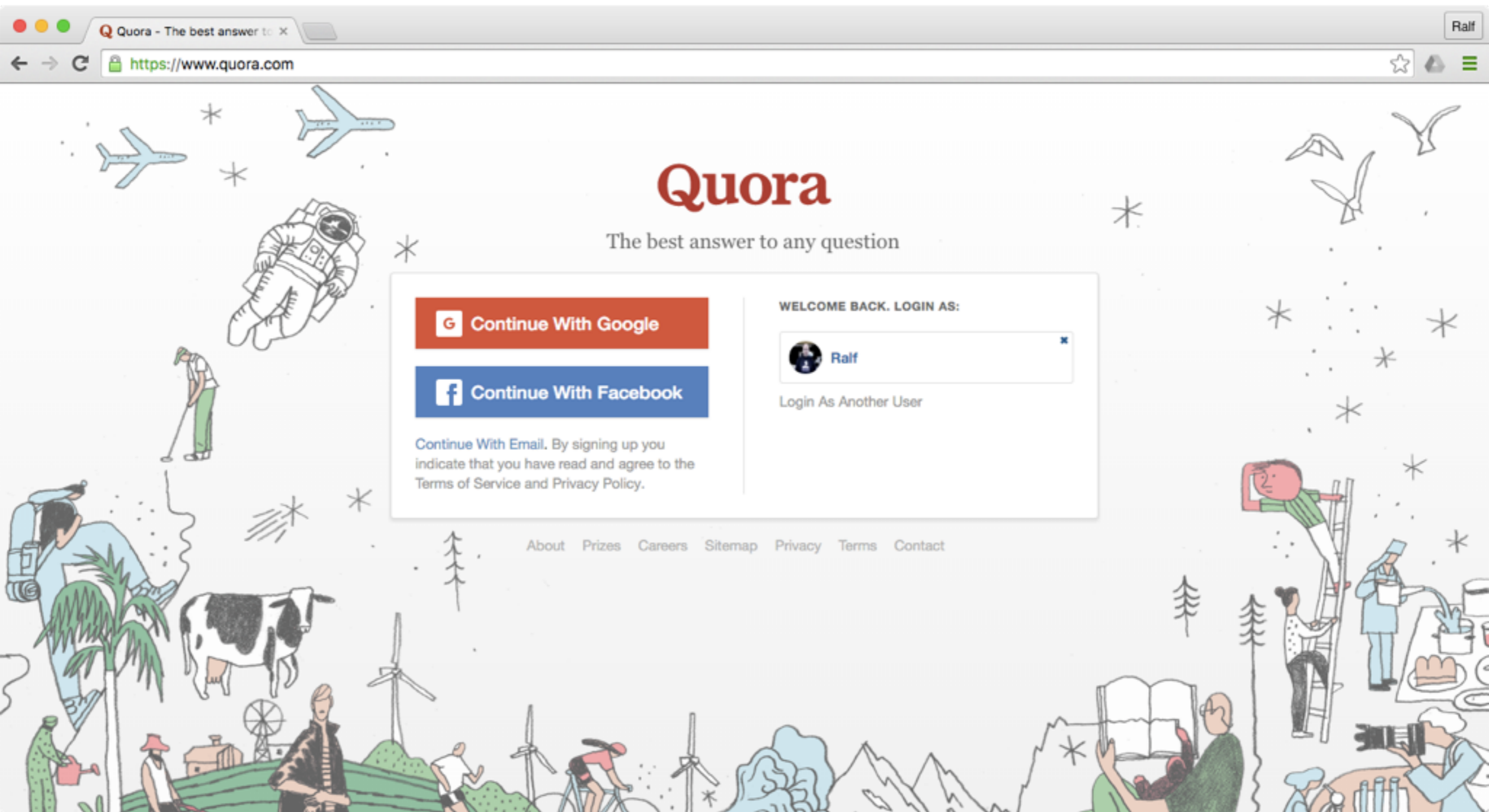
<https://www.jivesoftware.com/>

The screenshot shows the Jive website homepage. At the top, there is a navigation bar with links for JIVESOFTWARE.COM, COMMUNITY, DEVELOPERS, JIVEWORLD, EN, CONTACT, TRY JIVE, and CUSTOMER LOGIN. Below this is a secondary navigation bar with the Jive logo and links for Products, Solutions, Our Customers, Resources, Services & Support, About Us, Blog, and Search. The main hero section features a large background image of an office hallway with a purple overlay containing the text "Jive is a Mosh Pit of Ideas" and "Employee Engagement at GoDaddy". Two buttons are present: "WATCH THE VIDEO >" and "READ THE CASE STUDY >". Below the hero section is a grid of four featured content blocks:

- Block 1:** "Experience collaboration" featuring the "jive<sup>n</sup>" logo and an image of a laptop displaying a user interface.
- Block 2:** "Jive is a Leader again! Gartner" featuring an image of stylized buildings and fireworks.
- Block 3:** "Take a live tour of best-in-class" featuring the "jive<sup>x</sup>" logo and an image of a laptop displaying a user interface.
- Block 4:** "Jive's external community" featuring the "Forrester Wave™ Analyst Report" logo and a graphic of blue waves.

# **Other knowledge resources**

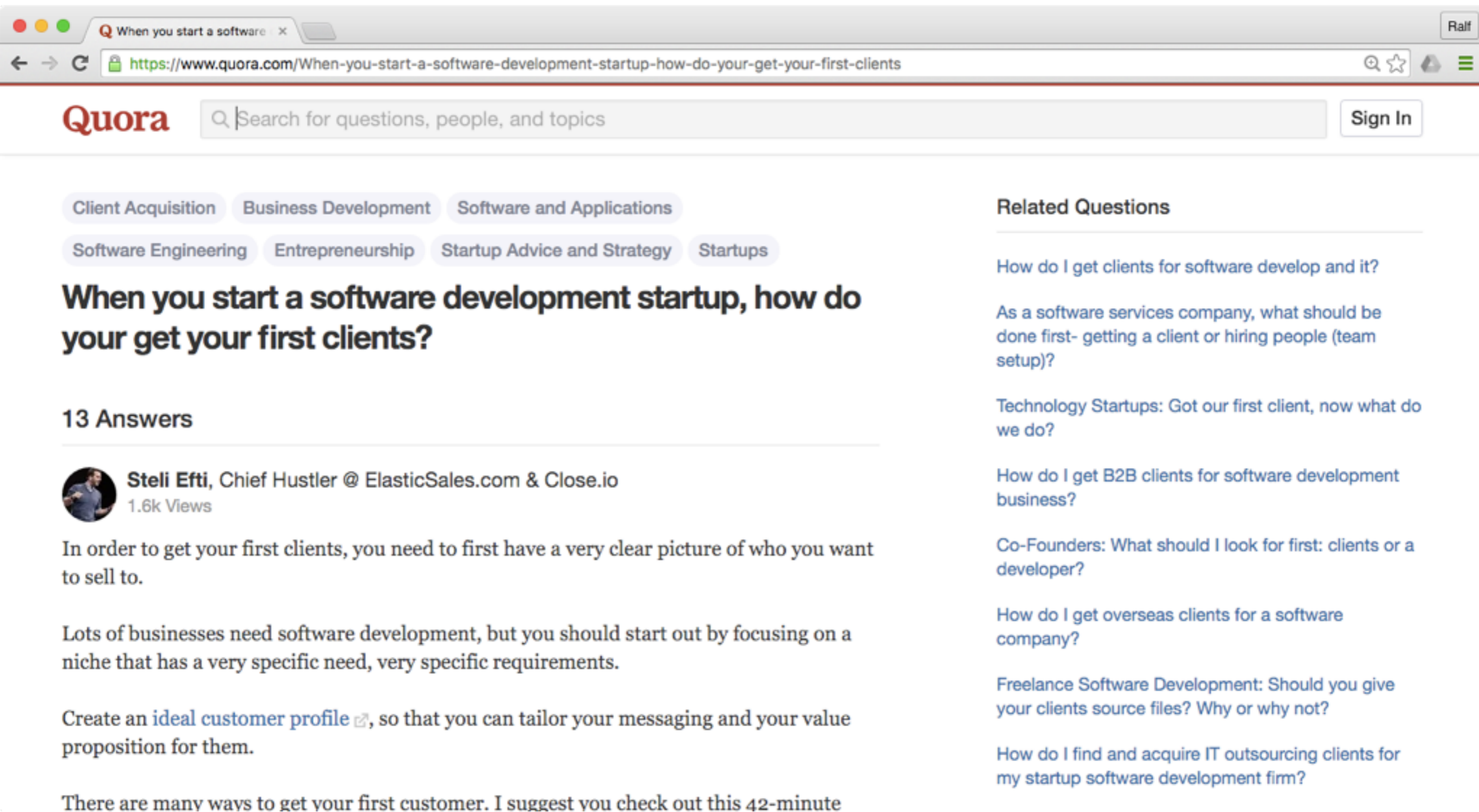
<https://www.quora.com/>





For instance:

<https://www.quora.com/When-you-start-a-software-development-startup-how-do-your-get-your-first-clients>



The screenshot shows a web browser window with the Quora website. The address bar displays the URL: <https://www.quora.com/When-you-start-a-software-development-startup-how-do-your-get-your-first-clients>. The Quora logo is in the top left, and a search bar is in the top center. Below the search bar, there are several topic tags: Client Acquisition, Business Development, Software and Applications, Software Engineering, Entrepreneurship, Startup Advice and Strategy, and Startups. The main question is: "When you start a software development startup, how do you get your first clients?". It has 13 answers. The first answer is by Steli Efti, Chief Hustler @ ElasticSales.com & Close.io, with 1.6k views. The answer text is: "In order to get your first clients, you need to first have a very clear picture of who you want to sell to. Lots of businesses need software development, but you should start out by focusing on a niche that has a very specific need, very specific requirements. Create an ideal customer profile, so that you can tailor your messaging and your value proposition for them. There are many ways to get your first customer. I suggest you check out this 42-minute

**Related Questions**

- How do I get clients for software develop and it?
- As a software services company, what should be done first- getting a client or hiring people (team setup)?
- Technology Startups: Got our first client, now what do we do?
- How do I get B2B clients for software development business?
- Co-Founders: What should I look for first: clients or a developer?
- How do I get overseas clients for a software company?
- Freelance Software Development: Should you give your clients source files? Why or why not?
- How do I find and acquire IT outsourcing clients for my startup software development firm?

# Wikipedia

For instance: [https://en.wikipedia.org/wiki/Java\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/Java_(programming_language))

## Java (programming language)

From Wikipedia, the free encyclopedia

*"Java language" redirects here. For the natural language from the Indonesian island of Java, see [Javanese language](#). This article is about a programming language. For the software package downloaded from [java.com](#), see [Java SE](#). Not to be confused with [JavaScript](#).*

**Java** is a general-purpose computer programming language that is concurrent, class-based, object-oriented,<sup>[13]</sup> and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA),<sup>[14]</sup> meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.<sup>[15]</sup> Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of computer architecture. As of 2016, Java is one of the most popular programming languages in use,<sup>[16][17][18][19]</sup> particularly for client-server web applications, with a reported 9 million developers.<sup>[citation needed]</sup> Java was originally developed by James Gosling at Sun Microsystems (which has since been acquired by Oracle Corporation) and released in 1995 as a core component of Sun Microsystems' Java platform. The language derives much of its syntax from C and C++, but it has fewer low-level facilities than either of them.


Java




# Dbpedia


For instance: [http://dbpedia.org/page/Java\\_\(programming\\_language\)](http://dbpedia.org/page/Java_(programming_language))



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 Sparql Endpoint

## About: Java (programming language)

An Entity of Type : [software](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](#)

Java is a general-purpose computer programming language that is concurrent, class-based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

# reddit

<https://www.reddit.com/>

The screenshot shows the Python subreddit page on Reddit. The browser address bar displays <https://www.reddit.com/r/Python/>. The page header includes navigation links for various subreddits and a login/sign-up prompt. The main content area lists several posts, each with an up/down arrow, score, title, author, and submission time. The right sidebar features a search bar, login fields for username and password, and a 'Login' button. Below the login fields is an advertisement for /r/PIZZA with the text 'LEARN HOW TO MAKE PIZZA!' and a 'discuss this ad on reddit' link. At the bottom of the sidebar are buttons for 'Submit a new link' and 'Submit a new text post'.

Python

Want to join? Log in or sign up in seconds.

hot new rising controversial top gilded wiki promoted

↑ **Post learning questions to /r/LearnPython** self.Python  
296 submitted 7 months ago \* by aphoenix | reticulated | [Moderator - speaking officially.] - stickied post  
↓ 44 comments share

↑ How fast can we make interpreted Python? arxiv.org  
25 submitted 3 hours ago by wclax04  
↓ 2 comments share

↑ PyPy Enterprise Edition morepypy.blogspot.com  
40 submitted 8 hours ago by john\_m\_camara  
↓ comment share

↑ Remember "Minecraft in 500 lines of python? We're rewriting it into a game framework." github.com  
282 submitted 21 hours ago by traverseda  
↓ 30 comments share

↑ After having had enough of Logstash, I wrote a clone in Python. All comments and PRs welcome github.com  
43 submitted 12 hours ago by afroisalreadyinu  
↓ 16 comments share

↑ How can I manage memory in python? Running out of memory after 40+ while loop iterations in my fitting routine. self.Python  
14 submitted 6 hours ago \* by Orson1981  
↓ 25 comments share

↑ I'm pretty sure that's not possible, but is it possible to automatically generate inverse functions? self.Python  
11 submitted 6 hours ago by masasin | Robotics. 2.7 on ROS until Kinetic, 3.5 otherwise.  
↓ 18 comments share

↑ dask chunks twitter.com  
5 submitted 5 hours ago by denfromufa  
↓ comment share

Python

search

username

password

remember me reset password

Login

**/r/PIZZA**  
LEARN HOW TO MAKE PIZZA!

discuss this ad on reddit

Submit a new link

Submit a new text post

# Social coding science

Source: <http://arxiv.org/abs/1408.6012>

arXiv.org > cs > arXiv:1408.6012

Computer Science > Social and Information Networks

## Collaboration on Social Media: Analyzing Successful Projects on Social Coding

Yuya Yoshikawa, Tomoharu Iwata, Hiroshi Sawada

*(Submitted on 26 Aug 2014 (v1), last revised 4 Sep 2014 (this version, v2))*

Social Coding Sites (SCSs) are social media services for sharing software development projects on the Web, and many open source projects are currently being developed on SCSs. One of the characteristics of SCSs is that they provide a platform on social networks that encourages collaboration between developers with the same interests and purpose. For example, external developers can easily report bugs and improvements to the project members. In this paper, we investigate keys to the success of projects on SCSs based on large data consisting of more than three hundred thousand projects. We focus on the following three perspectives: 1) the team structure, 2) social activity with external developers, and 3) content developed by the project. To evaluate the success quantitatively, we define activity, popularity and sociality as success indexes. A summary of the findings we obtained by using the techniques of correlation analysis, social network analysis and topic extraction is as follows: the number of project members and the connectivity between the members are positively correlated with success indexes. Second, projects that faithfully tackle change requests from external developers are more likely to be successful. Third, the success indexes differ between topics of softwares developed by projects. Our analysis suggests how to be successful in various projects, not limited to social coding.

Eirini Kalliamvakou, Daniela E. Damian, Kelly Blincoe, Leif Singer, Daniel M. Germán: **Open Source-Style Collaborative Development Practices in Commercial Projects Using GitHub**. ICSE (1) 2015: 574-585

Müller Miranda, Renato Ferreira, Cleidson R. B. de Souza, Fernando Marques Figueira Filho, Leif Singer: **An exploratory study of the adoption of mobile development platforms by software engineers**. MOBILESofT 2014: 50-53

Leif Singer, Fernando Marques Figueira Filho, Margaret-Anne D. Storey: **Software engineering at the speed of light: how developers stay current using twitter**. ICSE 2014: 211-221

Andrea Capiluppi, Alexander Serebrenik, Leif Singer:  
**Assessing Technical Candidates on the Social Web.** IEEE Software 30(1): 45-51 (2013)

Brendan Cleary, Carlos Gómez, Margaret-Anne D. Storey, Leif Singer, Christoph Treude: **Analyzing the friendliness of exchanges in an online software developer community.** CHASE@ICSE 2013: 159-160

Bin Lin, Alexey Zagalsky, Margaret-Anne D. Storey, Alexander Serebrenik: **Why Developers Are Slacking Off: Understanding How Software Teams Use Slack.** CSCW Companion 2016: 333-336



Bogdan Vasilescu, Daryl Posnett, Baishakhi Ray, Mark G. J. van den Brand, Alexander Serebrenik, Premkumar T. Devanbu, Vladimir Filkov: **Gender and Tenure Diversity in GitHub Teams**. CHI 2015: 3789-3798

Bogdan Vasilescu, Alexander Serebrenik, Premkumar T. Devanbu, Vladimir Filkov: **How social Q&A sites are changing knowledge sharing in open source software communities**. CSCW 2014: 342-354

Bogdan Vasilescu, Alexander Serebrenik, Mark G. J. van den Brand: **The Babel of Software Development: Linguistic Diversity in Open Source**. SocInfo 2013: 391-404

# Lean software development

[https://en.wikipedia.org/wiki/Lean\\_software\\_development](https://en.wikipedia.org/wiki/Lean_software_development)

## Principles

1. Eliminate waste
2. Amplify learning
3. Decide as late as possible
4. Deliver as fast as possible
5. Empower the team
6. Build integrity in
7. See the whole

# Rapid application development

[https://en.wikipedia.org/wiki/Rapid\\_application\\_development](https://en.wikipedia.org/wiki/Rapid_application_development)

**Rapid application development (RAD)** is both a general term used to refer to alternatives to the conventional [waterfall model](#) of software development as well as the name for James Martin's approach to rapid development. In general, RAD approaches to software development put less emphasis on planning tasks and more emphasis on development. In contrast to the waterfall model, which emphasizes rigorous specification and planning, RAD approaches emphasize the necessity of adjusting requirements in reaction to knowledge gained as the project progresses. This causes RAD to use prototypes in addition to or even sometimes in place of design specifications. RAD approaches also emphasize a flexible process that can adapt as the project evolves rather than rigorously defining specifications and plans correctly from the start. In addition to James Martin's RAD method, other approaches to rapid development include [Agile methods](#) and the [spiral model](#). RAD is especially well suited (although not limited to) developing software that is driven by user interface requirements. [Graphical user interface builders](#) are often called rapid application development tools.

# Agile software development

[https://en.wikipedia.org/wiki/Agile\\_software\\_development](https://en.wikipedia.org/wiki/Agile_software_development)

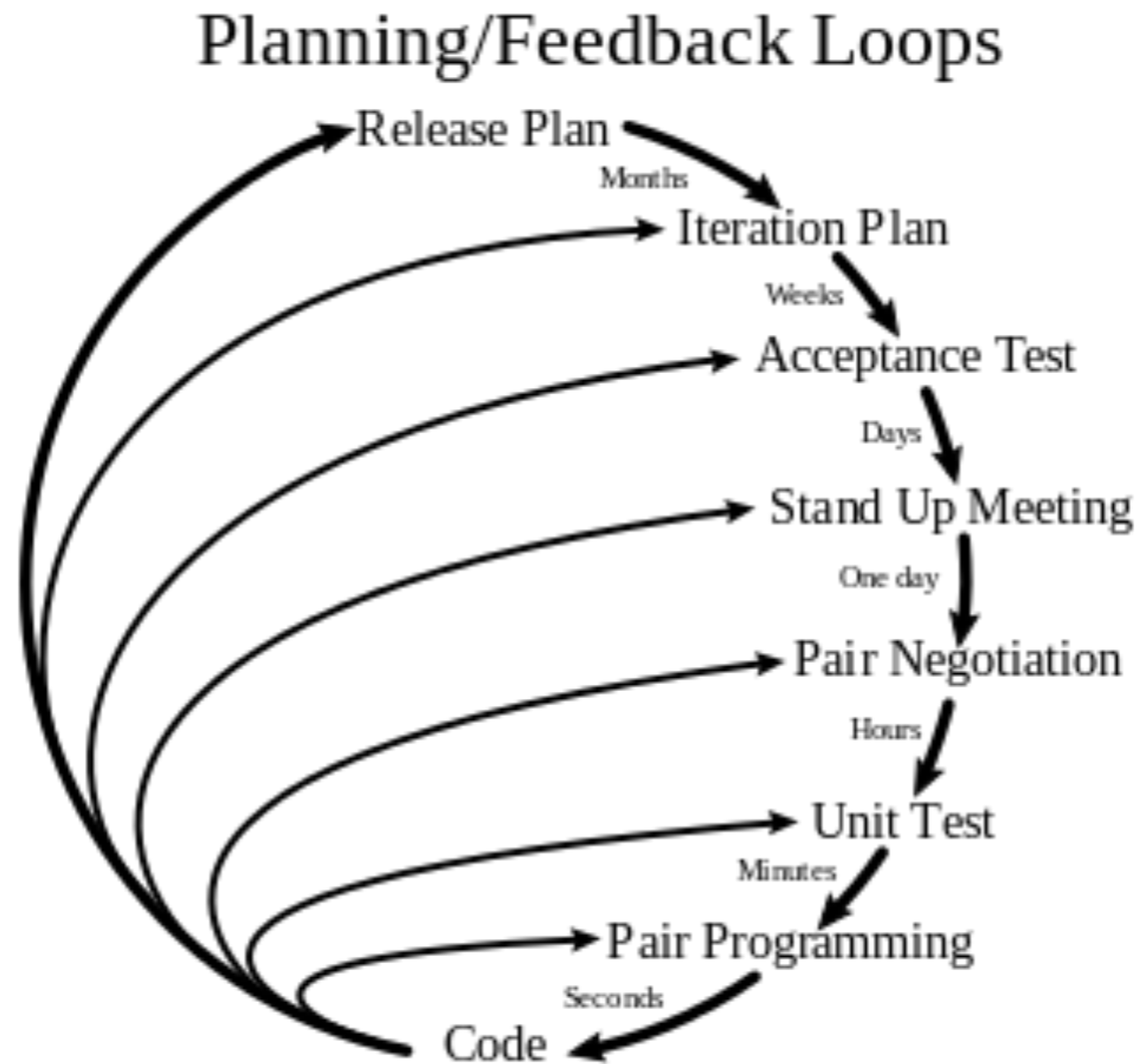
## The Agile Manifesto

In February 2001, 17 software developers<sup>[12]</sup> met at the [Snowbird](#) resort in [Utah](#) to discuss lightweight development methods. They published the *Manifesto for Agile Software Development*,<sup>[3]</sup> in which they said that by "uncovering better ways of developing software by doing it and helping others do it," they have come to value *Individuals and interactions over Processes and tools*, *Working software over Comprehensive documentation*, *Customer collaboration over Contract negotiation*, and *Responding to change over Following a plan*.

- *Individuals and interactions*: self-organization and motivation are important, as are interactions like [co-location](#) and [pair programming](#).
- *Working software*: working software is more useful and welcome than just presenting documents to clients in meetings.
- *Customer collaboration*: requirements cannot be fully collected at the beginning of the software development cycle, therefore continuous customer or stakeholder involvement is very important.
- *Responding to change*: agile methods are focused on quick responses to change and continuous development.<sup>[13]</sup>

# Extreme programming

[https://en.wikipedia.org/wiki/Extreme\\_programming](https://en.wikipedia.org/wiki/Extreme_programming)



# Extreme programming practices

[https://en.wikipedia.org/wiki/Extreme\\_programming\\_practices](https://en.wikipedia.org/wiki/Extreme_programming_practices)

- 1 Fine scale feedback
  - 1.1 Pair programming
  - 1.2 Planning game
    - 1.2.1 Release planning
      - 1.2.1.1 Exploration phase
      - 1.2.1.2 Commitment phase
        - 1.2.1.2.1 Sort by value
        - 1.2.1.2.2 Sort by risk
      - 1.2.1.3 Steering phase
    - 1.2.2 Iteration planning
      - 1.2.2.1 Exploration phase
      - 1.2.2.2 Commitment phase
      - 1.2.2.3 Steering phase
  - 1.3 Test driven development
  - 1.4 Whole team
- 2 Continuous process
  - 2.1 Continuous integration
  - 2.2 Design improvement
  - 2.3 Small releases
- 3 Shared understanding
  - 3.1 Coding standard
  - 3.2 Collective code ownership
  - 3.3 Simple design
  - 3.4 System metaphor
- 4 Programmer welfare
  - 4.1 Sustainable pace

The End