

Open Source + Hackathons + Recruitment

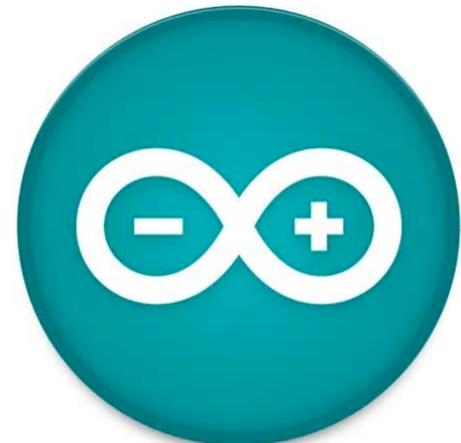
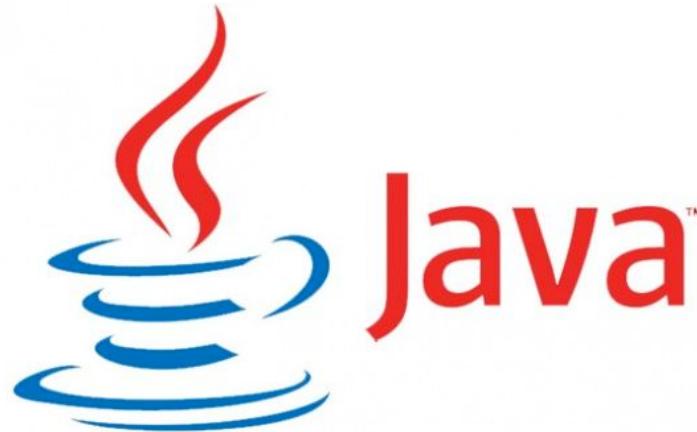
Sasha Varlamov

Founder, CEO BitwiseHacks

bitwisehacks

How I Learned How to Code

C++



Feed Line

www.wlgso.org

More Arduino

By Sasha Vardamov, AK4KL

This article is about the Arduino Microcontroller and interfacing it with Microsoft Flight Simulator X. This is a more generalized version of the article that I did for SimPilotNet.com. To see it and the code for this project go to simpilotnet.com and search for Arduino it will be the first result.

If you haven't read the article that David Macchiarolo, AJ4TF, wrote about the Arduino I'd really encourage you to read it, because it really gives a good explanation of what the Arduino is and what it is used for.

Microsoft Flight Simulator X, as you can guess, is a flight simulator that is available for under \$25 depending where you buy it. It also has a wide range of add-ons and extras that are available both as freeware and payware.

For my project that I have been coding and soldering for about two and a half months, I decided to write several programs to send and receive flight data (speed, altitude, heading, etc.) and in the end to have the Arduino display the flight data on a LCD (Liquid Crystal Display).

I started off my project with a lot of research about communicating with FSX. The verdict was that it was possible to do. The program that made



I had trouble with. It had a lack of documentation and lack of options on how to do it. However, with some more research, I found a few libraries to use to send my data over serial. I ended up using a library called "tserial" that was a free download off of the internet. It was very helpful; however, I had to modify my code a little bit to suit the serial library.

The next problem I had to solve was how to get the data to the Arduino for display on a LCD. That was solved with serial communication. This however,



The final part of the project was getting the Arduino to display the newly received data. This was easily accomplished with a 16 by 2 character display attached to the Arduino. First, I programmed the Arduino to read the serial port when something comes to it. Then using the modified 4bit LCD library that I got off of the Internet, (there is a LCD library included with the IDE, but due to the way I wired my LCD I had to use a modified one) I wrote the values to the LCD. For any questions or suggestions email me at the.ham.ak4kl@gmail.com.

January, 2012

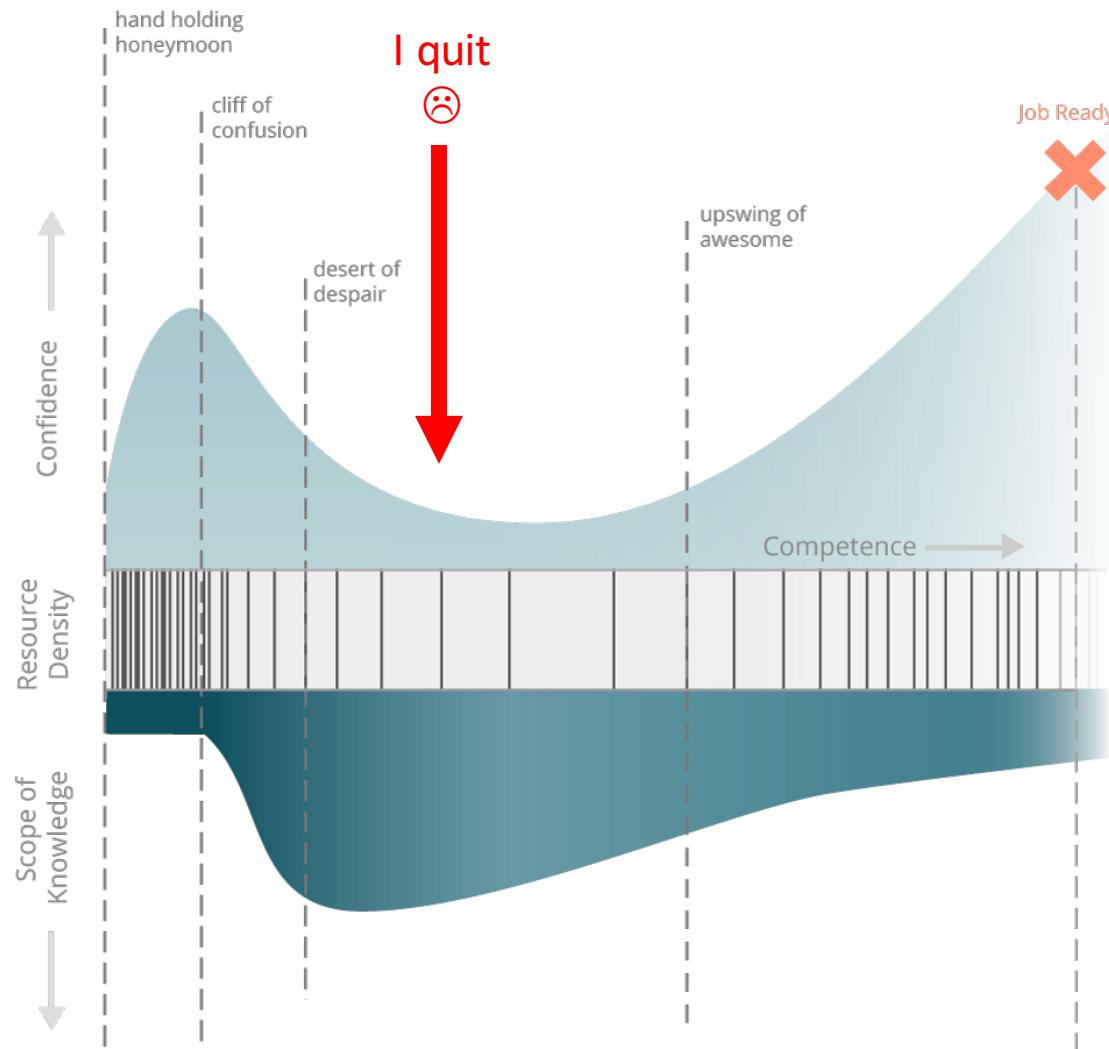
How I Got Good at Coding

- Developed A LOT of cool stuff with friends
- Read & watched as much as possible
- Used & contributed A LOT to GitHub
- Went to as many Hackathons as I could!

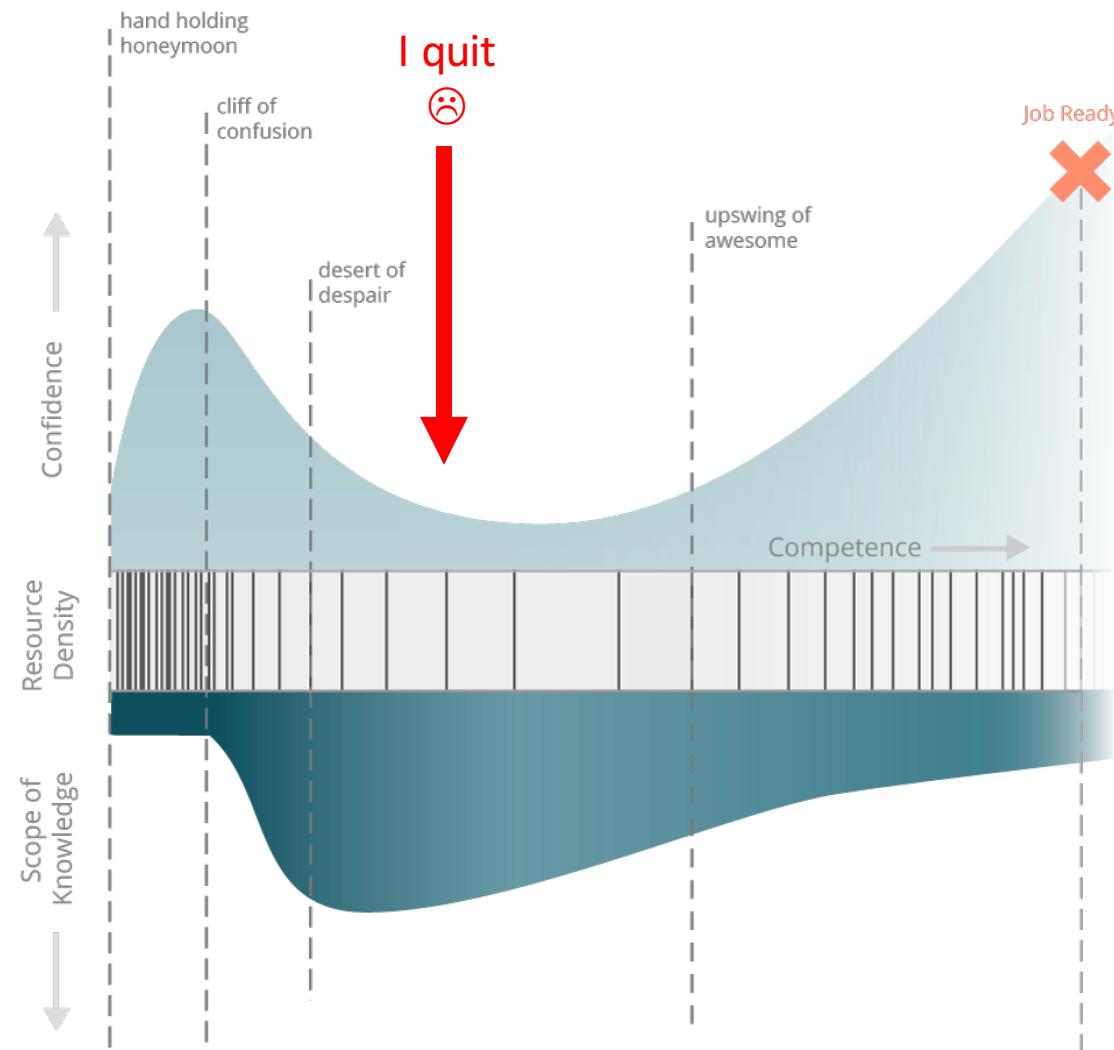
A screenshot of a GitHub profile page for a user named Sasha Varlamov. The profile picture shows a young man standing outdoors. The page includes sections for Overview, Repositories (63), Stars (70), Followers (14), and Following (70). It features pinned repositories such as esl/MongooseIM, spotify/ios-sdk, spotify/web-api, and mongo-express/mongo-express. Below the repos is a heatmap showing contributions over the last year, with a legend indicating 'Less' (light green) and 'More' (dark green). The bio section includes links to Hong Kong, an email address, a website, and a note about joining on February 5, 2015. There's also a 'Developer Program Member' badge.



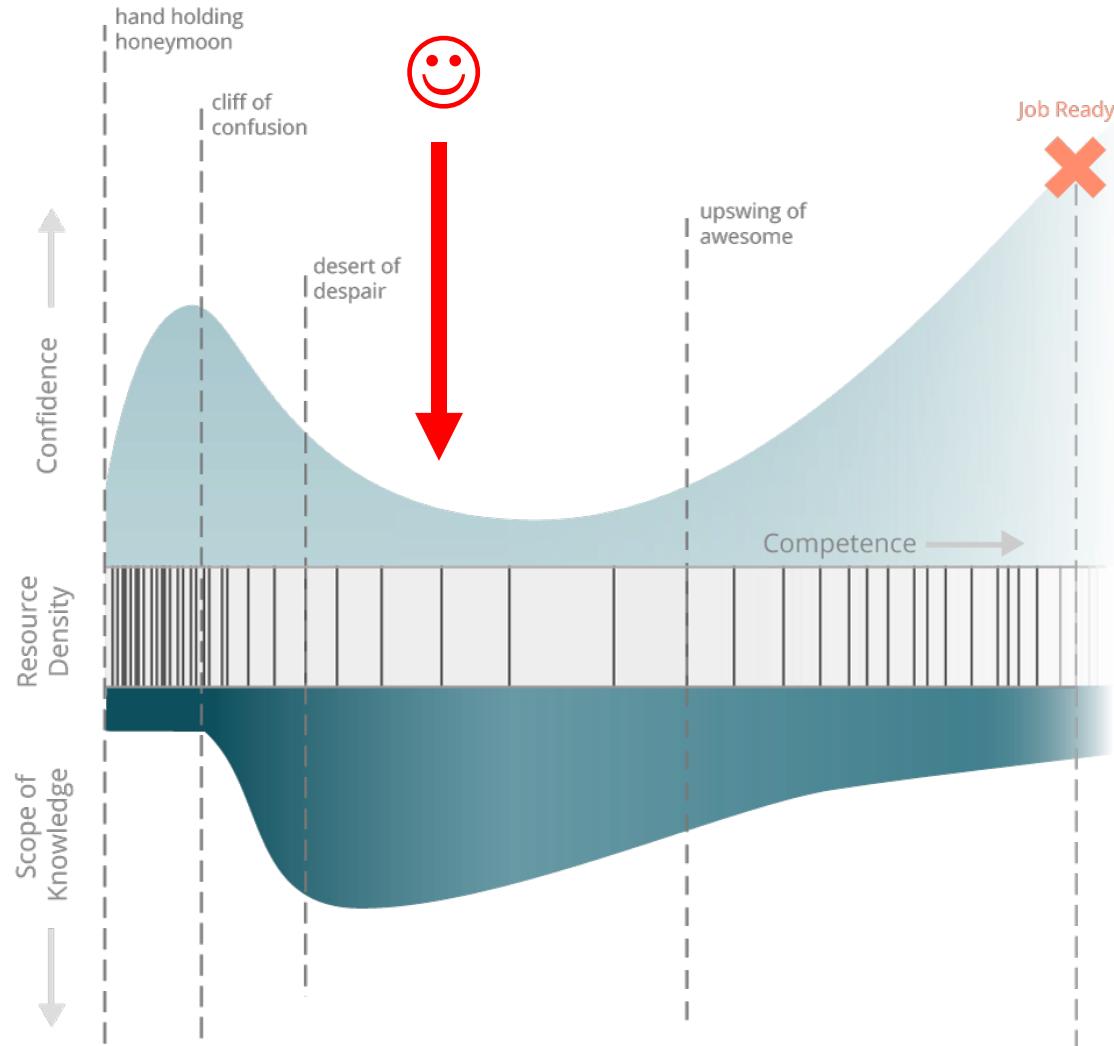
Why Most People Who Try Fail



This is Why I Started BitwiseHacks at 16 Years Old



To Give People a Much Better Shot at Coding & Getting Their First Job



BitwiseHacks So Far

- 6 Hackathon events
- Almost 600 community members
- At least 2 startups hatched from event ideas and teams
- Partnered with AT&T, Microsoft, Cathay Pacific & other corporations



Cathay Pacific x BitwiseHacks Hackathon

- 24 Hour Coding Period
- >120 Participants
- 26 Teams
- 3 Ideas Evaluated for Implementation



CATHAY PACIFIC

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Things Are Changing Fast!

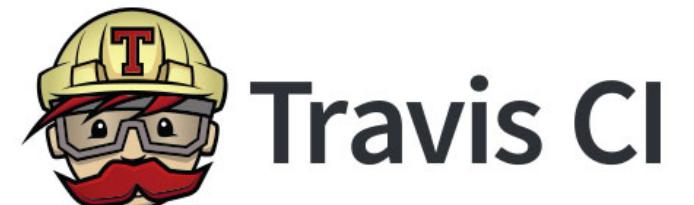
- All applications and projects will leverage & contribute to open source
- Most applications will be developed and deployed on the cloud
- Teams will be more spread out and diverse than ever
- Quick prototypes continue to take the place of months-long research
- The IT hiring process will be flipped upside-down

Future of Hiring Software Developers

- Increased emphasis on real portfolios
- Hackathons (et al.) will be one of the most effective ways to hire
- Requests for GitHub profiles and open source software will become standard (especially for entry level candidates)
- Remote first interviews involving live problem solving and coding
- Requirements will be more numerous as the development cycle & stack becomes more nuanced/complicated

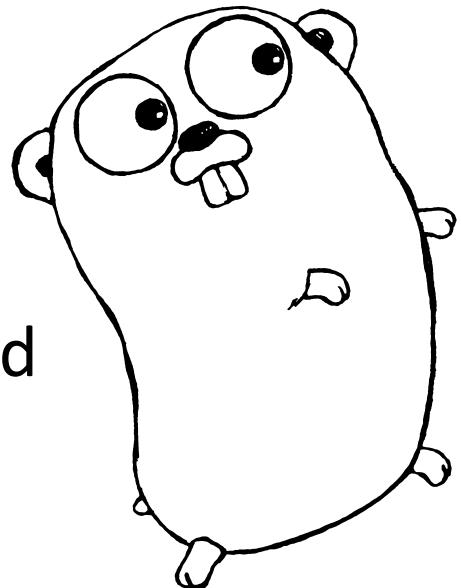
Supporting Applications

- More powerful abstract languages
- VCS & cloud technologies
- Continuous integration
- DevOps tools & approach
- Online real-time communication
- Cloud project management tools

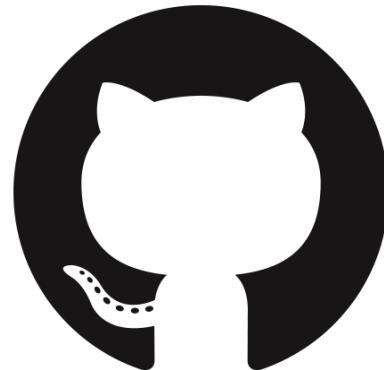


My Two Favorite Examples

- GoLang Playground
- gobyexample.com
- Essential Go



GoLang



GitHub

- guides.github.com

Technology Overview

GoLang

- Created out of frustration with C++ and Java at Google
- Built for use by large teams
- DRY approach
- Statically-typed
- Massive networking and multiprocessing support
- Fast as Java and C++ *
- Compiles to native binary form
- Easy to learn for Java/C++ teams

GitHub

- World's largest FOSS community
- Used by developers, startups, corporations, and FOSS projects
- Built on top of Git (Linus Torvald's Git VCS)
- Supports collaboration, version control, and project management

Key Takeaways From This?

- The global software ecosystem is always changing (rapidly!)
- What got you here, won't get you there
- Trade offs are important in all aspects
- Prepare diligently for the evolving recruitment process
- Don't be overwhelmed by FOSS and stacks, leverage them all!

Questions/Discussion? Let's get in touch

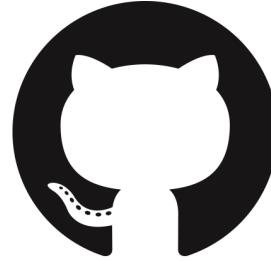
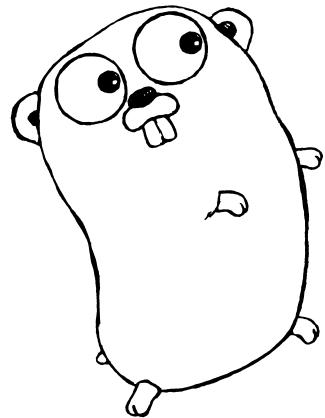
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GoLang && Open Source (OSS/FOSS)

Sasha Varlamov

Founder, CEO BitwiseHacks

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Scope

- Brief intro about GoLang & GitHub/FOSS
- Direction of software development strategy
 - Methodology
 - Applications
 - Hiring & Teams
 - Stacks
 - Tooling
- Importance of FOSS
- Understanding trade-offs
- GoLang is built for the future & trade-offs
- How to get started with GoLang and FOSS
- Questions and Go Playground time!

Goals

- Gain a solid familiarity/intro to GoLang, GitHub, and FOSS
- Begin to think about FOSS and future development strategies
- As an entrepreneur:
 - How will I leverage these technologies/strategies in my business?
 - How will I be able to hire/find the best team for technology projects?
- As a developer:
 - How will I do I get started using these tools?
 - How am I going to position myself in the job market?

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Keys for Future of Software Development

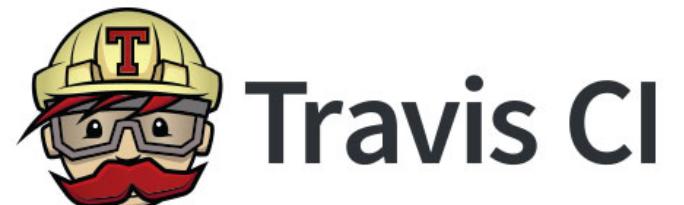
- All applications and projects will leverage and contribute to FOSS
- Nearly all applications will be developed and deployed on the cloud
- The IT hiring process will be flipped upside-down
- Teams will consist of:
 - [Early, low-budget] Generalists/full-stack developers
 - [Mature, high-budget] Many specialists in various co-dependent areas
- Teams will be more spread out and diverse than ever
- Staff churn rates will continue to rise
- Projects will have to be much cheaper and faster
- Quick prototypes continue to take place of months-long research
- “Agile” won’t be a buzz word anymore – just the M.O. for most of us

Supporting Applications

- VCS & cloud technologies
- Continuous integration
- DevOps tools & approach
- Online real-time communication
- Cloud project management tools



JIRA



Future of Hiring Software Developers

- Increased emphasis on real portfolios
- Reduced importance of traditional résumés
- Hackathons (et al.) will be one of the most effective ways to hire
- Requests for GitHub profiles and open source software will become standard (especially for entry level candidates)
- Remote first interviews involving live problem solving and coding
- Requirements will be more and more numerous as the development cycle & stack becomes more nuanced/complicated

FOSS is Huge – GitHub Statistics

- ~32 Million MAU on GitHub only last year
- >14 Million registered developers
- >35 Million open source projects

Upsides to FOSS

- Dramatic productivity increases
- Only build key business-related components
- Focus on coordination of systems, rather than building basics
- Access and leverage the world's largest developer community
- Utilize contributions to build a portfolio and presence online

Unfortunate Problems with FOSS

1. Bad/Non-existent/Old/Irrelevant documentation
2. Spotty contribution and maintenance (no guarantees)
3. Inconsistent approaches and styles in a single project
4. Non-existent/complicated toolchains
5. Plethora of different stacks to learn
6. Tough to get involved

FOSS Solution = GoLang + GitHub

1. Bad/Non-existent/Old/Irrelevant documentation
 - ✓ GoDoc
2. Spotty contribution and maintenance (no guarantees)
 - ✓ Easier to get involved and create fixes -> less dependence
 - ✓ GoLang project and std lib are guaranteed for the future
3. Inconsistent approaches and styles in a single project
 - ✓ GoLang enforces strict style for compilation
 - ✓ Idiomatic GoLang is hard not to use
4. Non-existent/complicated toolchains
 - ✓ go build/get/fmt/run/vet
 - ✓ golint
5. Plethora of different stacks to learn
 - ✓ Go std. lib. supports 80+% of your needs
6. Tough to get involved
 - ✓ Join through GitHub, leverage GoLang to learn and start coding+contributing fast!

What Can We Learn From This?

- The global software ecosystem is always changing (rapidly!)
- What got you here, won't get you there
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- Don't be overwhelmed by FOSS and stacks, leverage them all!

How can I get started?

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- Guides.Github.com

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