

Getting Started With Open Source & MORE



Trivia

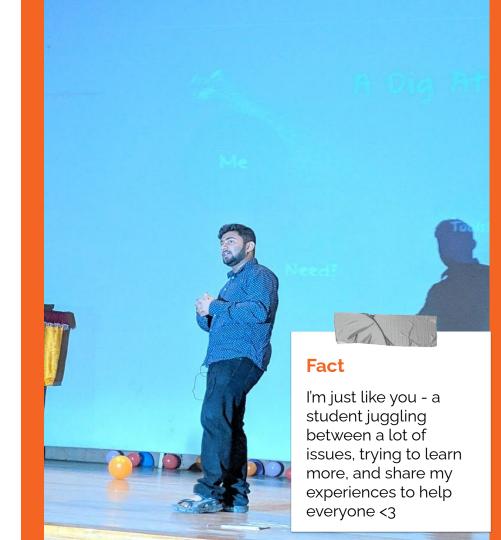
can you **identify the organisation** the above mascot represents?

Shivam Kumar Jha

ľm

- a student (let's be friends?)
- open source contributor for three years
- member (mentor) at <u>CCExtractor</u>
- working on a medical startup <u>zealth-ai</u>

I would **love discussions** and **getting to know** *you*, so please feel free to reach through *Cogito, Ergo Sum*



What Do You Want To Take Away From This Discussion?

you are going to be an *Open-Sourcerer* ready to learn, contribute, be part of communities and participate in open source programs

What Do You Understand By Open Source?



Fact

every answer, every understanding is correct... enthusiastic attempt is what sets you apart, in open source as well!

What Is Open Source?

open source is the only right way to do software

<u>Linus Torvalds</u>

refers to something people can modify and share because its design is publicly accessible

opensource.com

denoting software for which the original source code is made freely available

Wikipedia

Open Source is your path to learning software development in the contemporary world



Note

this is a self made definition for **aligning open source to our goals** and ambitions



Why Should I Do Open Source?

First, and foremost, do open source for yourself!

- → Experience you've learnt python (or node or java or ruby), now what?
- Technologies

 knowledge about documentation, APIs, methods, and lots more
- → Mentorship find experienced mentors to help you learn and seek direction
- → Communities become part of enriching communities to grow
- → Altruism become part of enriching communities to grow
- → Monetary Perks



Fact

all these attributes eventually will **lead to** you becoming more skillful and getting better career opportunities (eg. placements)

Talk Is Cheap, Show Me The Way...



Trivia

can you **guess the original quote** by *Linus Torvalds*, the founder of Linux?

Your Open Source Journey

Learn A Language

language you enjoy the most or find simplest

Find Issues To Solve

beginner friendly good to start with contributions

Prepping

Contributing & Growing



How To Use VCS &

More

Git, GitHub, command line, IDE (optional), etc.

Find Your Family

Contribute more to learn and fit into open source communities

I'm Ready, Tell Me What To Learn-



Trivia

do you know what is unstructured learning, the most important ingredient of rising above average?

Credits: CIMB Mascot

Meet Octo.

In his school, for years, teachers told him what he should learn, what books to read, and how to score good!

Now, in college, he loves open source and wants to contribute, but there is no teacher to tell him what exactly to learn, what resources to follow, and how to "score well"!

He is very confused just like us, let's try to help him!

Follow Unstructured Learning

What

learning required when delving into a new field with no set path; opposite of schools

Why

"The world rewards you for creating things it doesn't know how to get for itself" - Naval Ravikant

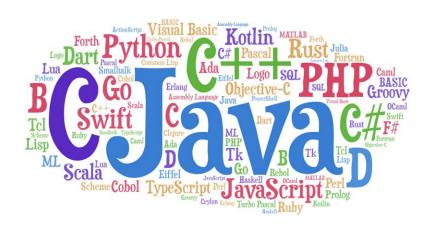
How

ask questions, try and fail, search and explore, immerse yourself, teach others, look stupid!

Learn A Language

If you are trying to go into open source programming (and there are many more ways to contribute, more details here), learning a programming language is a must.

- any language that you feel comfortable with is powerful enough to start
- basic syntax knowledge is enough!
- do not invest too much time, there is a lot more than syntax
- you'll have to learn more on the fly



How To Use VCS & other tools

All open source projects use Version Control System, code hosting platform, and development is super easy using command line.

- Learn Git, the most popular Version Control System
- <u>Learn GitHub</u>, the most popular git-based code hosting platform
- Get comfortable with powers of command line:
 For Linux Or For Windows (I RECOMMEND LINUX)
- Install Integrated Development Environments (example VSCode, PyCharm, Netbeans, etc.)



Trivia

do you know what is a version control system, the magic wand that makes developments in large teams a cake-walk?

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Octo Is Ready, Or Is He?

Octo, after pestering seniors with questions, reading lots of articles, trying it by himself, facing issues and resolving them, has learned how to use programming language, git, GitHub, installed linux to harness the power of command line, and chose VSCode as his IDE.

He excitedly goes to GitHub, BOOM! There is code everywhere and all he knows is syntax.

He gets perplexed and upset. Let's help him again!



Find Easy Tasks To Do

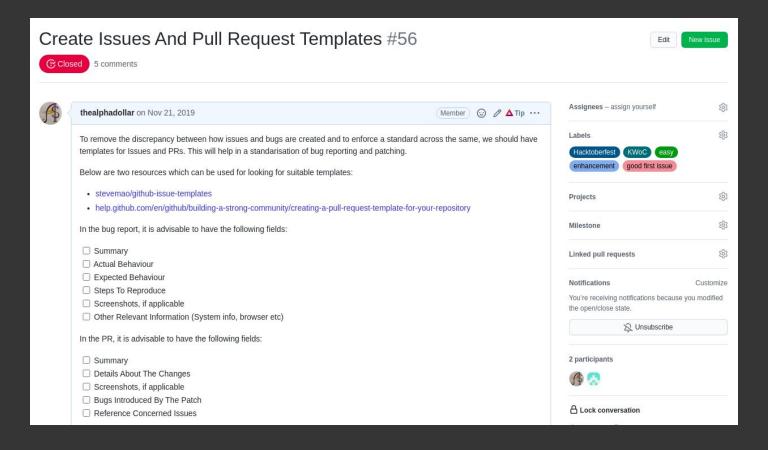
We only know syntax at this moment, and we will grow one step at a time, starting small!

- Projects of seniors/clubs are good place to start
- Issues related to documentation, small bugs, grammatical fixes,
 etc.
- Find easy issues at goodfirstissue.dev, firsttimersonly.com
- Aim is to practice learnt skills, form understanding of "how syntax is used" to develop tools, and enjoying!

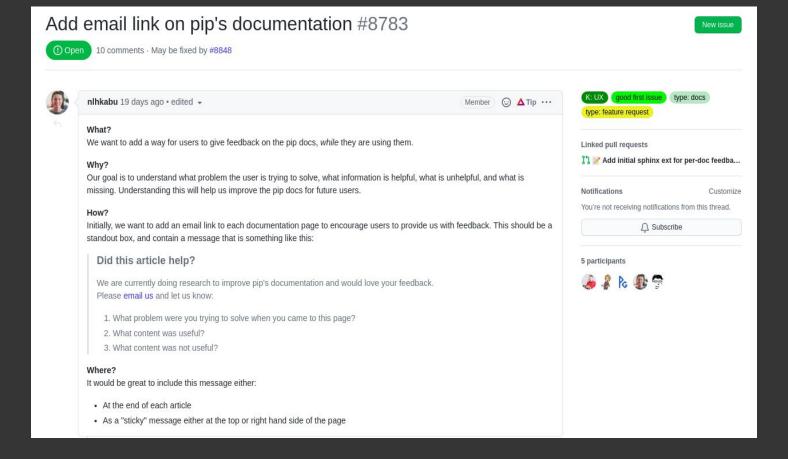
My First Commit

my first ever open source contribution was <u>adding my roll</u> <u>number in a sandbox</u> <u>repository</u> and I was on cloud nine for the day;)

Easy Issue Example



Easy Issue Example





Octo, The Open Sourcerer.

With your help, his efforts, and using principles of unstructured learning Octo has been contributing to open source for quite sometime now and gradually increasing difficulty levels of issues he solves.

He gets to know his seniors participated into GSoC, <u>KWoC</u>, and other open source programs.

Let's help Octo understand how and shine!

Credits: CIMB Mascot



GSoC

- Google Summer of Code
- By Google
- Happens During Summer (surprise!)
- Stipend Of \$3000
- Organisations from all fields
- All doubts answered <u>here</u>
- All program information <u>here</u>

GSoC is considered as the most prestigious and pioneer open source programs.





MLH Fellowship

- Has Two Tracks: Open Source & Hackathons
- By GitHub
- Happens Thrice A Year
- Need Based Stipend Upto \$5000
- All doubts answered <u>here</u>
- All program information <u>here</u>

MLH is one of the new open source (and portfolio development) programs for students to build skills.





Outreachy

- For Groups Underrepresented In Tech
- By Multiple FOSS Communities
- Relatively Easy To Get Selected
- Handsome Stipend of \$5,500
- All doubts answered <u>here</u>
- All program information <u>here</u>

Outreachy promotes open source among women, trans men, non-binary people, and genderqueer



This is not all, there are dozens of more such programs (find here) which provide amazing perks and learning



Fact

Did you know there is a list of (almost) all open source programs on GitHub?

Find it here.

Octo Is Ready To Conquer

Octo now knows about open source programs, and the resource where he can find list of many more such programs. He is charged, and is ready to conquer the world.

After months of solving issues, learning usage of Git & GitHub, gaining knowledge from seniors, he is ready to climb to the top.

Let's help him with some brownie points and wish him all the best!



Credits: CIMB Mascot



How Can I Increase My Chances?

Programming is just the tip of the iceberg; slowly learn more to improve your odds.

- → Practice Reading And Understanding Large Codebases can be overwhelming without right method and mindset
- Write Good Documentation not the only one working on the code; start <u>here</u>, learn as you go
- → Write Clean & Reusable Code most communities have guidelines; start <u>here</u>
- → Follow Pull Request And Commit Guidelines

 Most communities have guidelines; pr start here, commits start here
- → Build Proof of Concept Of Complex Ideas issues (especially new features) can be very complex, PoC helps simplify, understand, and list technologies to learn

Understanding Large Codebases

everyone who starts from syntax towards software development faces the problem

You Are Not Alone

go one file at a time, one function at a time, compile & run the program, put "print" commands

Divide And Conquer

ask for help from maintainers and other members, post questions and doubts, don't be shy

Ask For Help



How Can I Increase My Chances?

Communication etiquette is key to open source; most organisations have contribution guidelines, prefer active engaged contributors.

- → Start Early, Join Early join community and start contributing early, jump right in!
- Ask Questions Smartly do you homework and struggle beforehand; start here
- → Engage In Discussions be active, share your views, comment on issues
- → Help Others, Become A Part Of The Community
 help newcomers with your knowledge, discuss their problems
- Create A Larger Motive have a larger ambition; maybe staying as a member for long



Fact

Admins and mentors mostly prefer students who will enrich their community over students who are just there for a program

It can get overwhelming, take one step, one jump at a time to climb to the top



Trivia

Have you heard about the concept of **minimum viable motivator**?

Source: here.



Learn From Experiences Of Others

Beginning with open source is a slow, struggling, and very rewarding experience; everyone feels it is impossible at the start.

- My Journey Through Open Source Prateek Chanda
- A Beginner's Very Bumpy Journey Through The World of Open Source
- Why you should think twice about contributing to Open Source
- → The Definitive Guide to Contributing to Open Source
- What open source project should I contribute to?



References & Further Readings

Below are the pieces that have influenced the presentation and are recommended for further reading and understanding.

- Work effectively on a large codebase
- How contributing to open source projects can improve your engineering resume?
- How to engage with the open source community?
- → An Informal Introduction To KWoC
- Beginner's guide to open-source contribution
- GSoC: How? This? That?

Is it already time to say goodbye? :(

It'll take time, and we'll make it there!

I sincerely thank you for your interest & zeal to contribute to open source.





<u>Hacktoberfest</u> is going on, are you excited to contribute and get the limited edition T-shirt?



Credits!

The slides have been prepared and reviewed with help from a lot of amazing individuals, most notably,

- Willem Co-Mentor, CCExtractor
- → Naresh Ramesh Software Engineer, Setu.co
- → Kaustubh Hiware

 Backend Engineer, Mercari Japan
- → Himanshu Mishra Software Engineer, Spotify Sweden
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