



Kristu Jayanti College

AUTONOMOUS

Bengaluru

Reaccredited 'A' Grade by NAAC | Affiliated to Bangalore University

Open Source Demystified Level 1

Project Report submitted in partial fulfilment of the requirements for the award of the degree of
BACHELOR OF COMPUTER APPLICATIONS (BCA)



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Under the guidance of
Dr. Margaret Mary T

DEPARTMENT OF COMPUTER SCIENCE (UG)
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DEPARTMENT OF COMPUTER SCIENCE (UG)

CERTIFICATE OF COMPLETION

This is to certify that the practical lab for the course titled **Open Source Demystified Level 1** has been satisfactorily completed by **Deepali.S, 21BCAA17** in partial fulfilment of the award of the Bachelor of Computer Applications degree requirements prescribed by Kristu Jayanti College (Autonomous) Bengaluru (Affiliated to Bangalore University) during the academic year 2022-2023.

Internal Guide

Head of the Department

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Valued by Examiners

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Centre: Kristu Jayanti College

Date:



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DECLARATION

I, **Deepali.S, 21BCAA17** hereby declare that the practical lab work for the course titled **Open Source Demystified Level 1** has been completed by me, as per the course guidelines, under the guidance of **Dr. Margaret Mary T.**

This report work has not been submitted earlier either to any University / Institution or any other body for the fulfilment of the requirement of a course of study.

Signature

(Deepali S)

21BCAA17

Location:

Date:

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The success of the project depends upon the efforts invested. It's my duty to acknowledge and thank the individuals who have contributed to the successful completion of the project.

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SYNOPSIS

Open Source Demystified Level 1 course covers the understanding of Open source technology and ecosystem. It provides basic introduction to open source, terms, ecosystem, community, how to contribute, what are the key potentials and open source culture. This understanding helps one to identify, enter, contribute, learn and grow one's competency and career.

It also provides hands-on experience with the given open source project community ecosystem. This project report covers the overall learning and activities completed as a part of the course. This report will give one to understand the overall summary and guidance to contribute to open source projects further.

Open source software has become increasingly popular over the years due to its numerous benefits, including accessibility, flexibility, and collaboration. Open source communities have been formed around these projects, providing a platform for individuals to contribute to the development of software. This document is a report on the Open Source Demystified Level 1 course, which introduces students to open source technology and its ecosystem. The course covers open source fundamentals, the open source community, contributing to open source projects, and the possible benefits of open source.

This document's goal is to provide an overview of the course and its contents, as well as to act as a guide for anyone interested in contributing to open source projects. The purpose of this document is to provide an overview of open source contributions and the importance of contributing to open source projects. It covers various aspects of open source contributions, including ways to contribute, methods to join the community, and the value of open source contributions.

About this document : This document is divided into several sections, including an introduction, glossary, synopsis, community engagement experience, methods to join the community, ways to contribute, my contributions, open source value, and references. Each section provides detailed information on a particular aspect of the course or open source technology, and includes relevant examples, illustrations, and step-by-step guidance where appropriate.

The layout of the document is designed to be easy to follow and understand. Each section is clearly labelled and organized, and key terms and concepts are defined in the glossary for easy reference.



Glossary

ROBIN :

Open Source: Open source is a term that originally referred to open source software (OSS). Open source software is code that is designed to be publicly accessible—anyone can see, modify, and distribute the code as they see fit.

Ubuntu: Ubuntu is an open source Debian-based Linux distribution. Sponsored by Canonical Ltd. Ubuntu is considered a good distribution for beginners.

Kubernetes : It is an open-source container-orchestration tool designed by Google. It's used for managing clusters of containerized applications

Rakuten Symphony : Rakuten Group company, providing global B2B services for the mobile telco industry and enabling next-generation, cloud-based, international mobile services.

RAN : It is responsible for enabling and connecting devices such as smartphones or internet of things (IoT) devices to a mobile network

OSS : Open source software is code that is designed to be publicly accessible—anyone can see, modify, and distribute the code as they see fit.

CrunchBase : Crunchbase is a provider of private-company prospecting and research solutions. The vendor boasts that over 60 million users—including salespeople, entrepreneurs, investors, and market researchers

ORACLE :

Orchestration : Orchestration is the automated configuration, management, and coordination of computer systems, applications, and services.

Migration : There are tools and frameworks that help with cloud data migration. These tools require modification in terms of coding to make the migration process that suits your infrastructure.

Scalability : Scalability allows a firm to scale from start-up to blue chip without having to significantly rewrite their code, potentially saving big on software development costs.

Oracle RAC : Oracle Real Application Clusters (RAC) allow customers to run a single Oracle Database across multiple servers in order to maximize availability and enable horizontal scalability, while accessing shared storage.

Shared Pool : The shared pool is the area of the System Global Area (SGA) that contains structures such as the data dictionary cache and the shared SQL area.

Large Pool : The large pool is an optional memory area. It provides an area of memory from which large allocations can be made.

Database Buffer Cache : It is the area of the System Global Area (SGA) used to hold copies of data blocks read from the disk.

Redo Log Buffer : The redo log buffer is the part of the System Global Area (SGA) that holds information about changes made to the database. Each of these changes generates a 'redo entry'.

Java Pool: String Pool in Java is a special storage space in Java Heap memory where string literals are stored. It is also known by the names

TERRA:

SDS software defined storage: Software-defined storage is a marketing term for computer data storage software for policy-based provisioning and management of data storage independent of the underlying hardware.

Open Stack : OpenStack is an open source platform that uses pooled virtual resources to build and manage private and public clouds.

Cryptocurrencies : a digital currency produced by a public network, rather than any government, that uses cryptography to make sure payments are sent and received safely.

OPEX : OPEX is an Open source EXchange platform for cryptocurrencies.

Introduction

About this document:

Open source refers to software or technology that is made available to the public with its source code openly accessible and modifiable. It is a collaborative and decentralized approach to software development that allows for free distribution, modification, and redistribution of the code. Open source software is often created and maintained by a community of developers, rather than a single company or organization. The concept of open source software originated in the 1980s and gained popularity in the 1990s with the rise of the internet.

Open source software has become increasingly popular in recent years due to its flexibility, cost-effectiveness, and ability to promote innovation and collaboration. Open source technology has also been applied to areas outside of software development, such as hardware and design. Many companies, including Microsoft and Google, have embraced open source and contribute to open source projects. The use of open source software and technology is expected to continue to grow as more businesses and organizations realize its benefits. Open source has become a movement and a way of working that reaches beyond software production. The open source movement uses the values and decentralized production model of open source software to find new ways to solve problems in their communities and industries.

Purpose

This open source document provides comprehensive information about open source technology, its benefits, impact on the technology industry, and the various open source projects. Open source software provides unique ways to create effective documentation. When software is open sourced, users are regarded as contributors and can access the source code and the documentation. They're encouraged to submit additions, fix code, report bugs, and update documentation. The document consists of an introduction that explains what open source is and its significance in the technology industry. It provides a brief history of open source and how it has evolved over time.

Audience

This open source document provides comprehensive information about open source technology, its benefits, impact on the technology industry, and the various open source projects. The document consists of an introduction that explains what open source is and its significance in the technology industry. It provides a brief history of open source and how it has evolved over time. It lowers the barriers to adoption and collaboration, allowing people to spread and improve projects quickly. Open source revolves around the concept of freely sharing technological information so that it may be improved through multiple insights and viewpoints. Also because it gives users a potential to control their own computing, relative to closed source.

Open Source Introduction

Open source software is defined as **“software with source code that anyone can inspect, modify and enhance”**. This type of code is developed on the premise that all software source code should be free to access and belongs to the community. The source code is open to the world and does not require a fee. The open source approach results in better code because the software is made by many hands.

In terms of open source software, the code is often freely downloadable and changeable as long as the user sticks to what is agreed upon in the software license agreement. Open-source software is usually under the General Public License (GNU), but there are other free licenses like the Intel Open Source License, FreeBSD License and the Mozilla Public License.

The success of open source depends on the contribution of communities. Companies that benefit from open source should try to donate their resources to give back, such as by encouraging their own developers to contribute to the project. Open source software contrasts the products of companies like Microsoft which historically turns a profit from selling software that is closed source.

Some famous examples of open-source products are:

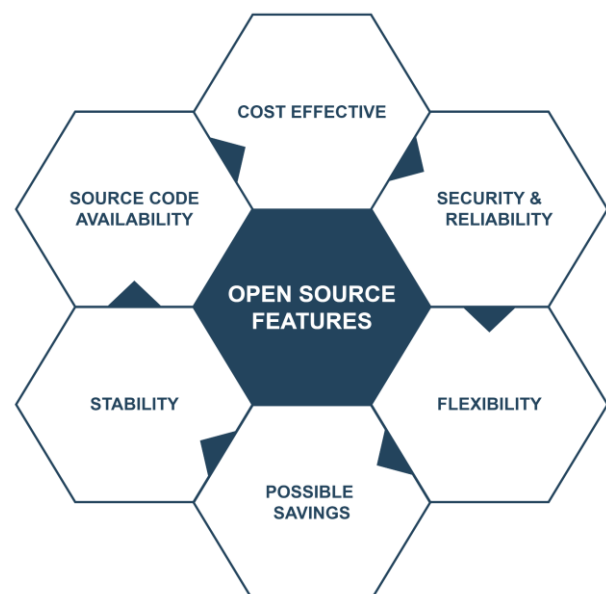
- i. Operating system : Android, Ubuntu, Linux
- ii. Internet Browsers : Mozilla FireFox , Chromium
- iii. Integrated Development Environment: Vs code(Visual studio code),Android Studio, PyCharm, Xcode

Open-source community and Contributions:

The open-source community is a worldwide community of programmers and software developers who are continuously working on various open-source projects to make our lives better. This community is self-governing and self-organizing, there are no executives to take the decisions solely. This community plays a very crucial role in the sustainability of various open-source organizations.

Open Source Project Examples

- a. Robin.io
- b. Oracle (Database)
- c. Terra





Introduction:

Robin.io, a **Rakuten symphony company**, is a Kubernetes-based platform (kubernetes, open source for automating software deployment) that automates the deployment and lifecycle management of Data and Network applications. Robin extends efficiency and portability of kubernetes to all applications, even complex Big data , Databases ,AI/ML and custom Apps.

Project Summary:

Website	https://robin.io/
Organization	Robin Systems
License	Not open Source
Open/Proprietary	Proprietary
Source Path	Nil
Brief Description	Robin designs and develops application software, it provides hyper-converged kubernetes platform for information technology and business initiatives for big data and databases.

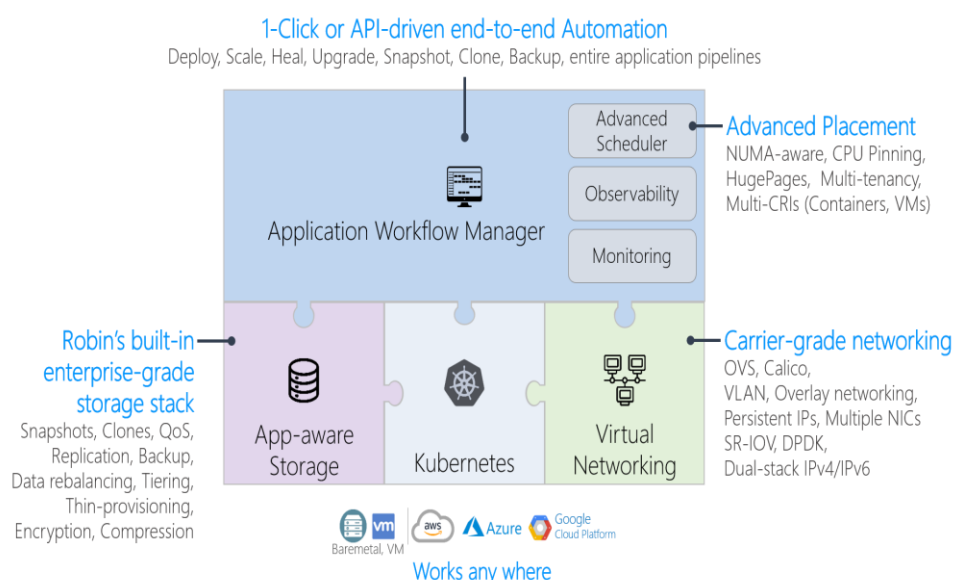
Project Details:

Key Features

- Automate all aspects of critical day-2 operations to run databases, big data, time series and message queue services in production on Kubernetes.
- Highest performing storage and data management for any Kubernetes on-premises or in any cloud.
- Application Deployment and lifecycle management.
- Consistent storage experience across different environments. Allow easy migration and portability of apps along with their data across different cloud environments.

Architecture:

It is a fully cloud-native and microservices-based architecture that is multi-access, multi - platform, and multi-cloud.



High level architectural view of robin platform

- **Application workflow manager:**

The management and tracking of tasks performed or temporarily halted due to an issue are simplified. It automatically records information for each activity and provides tools to report information about each task.

- **App - aware storage :**

Application awareness is a term for systems that have built in information or “awareness” about individual applications, in order to better interact with these applications.

- **Kubernetes:**

It automates operational tasks of container management and includes built-in commands for deploying applications, rolling out changes to your applications up and down to fit changing needs, monitoring your applications, which makes it easier to manage applications.

Robin Products:

- **ROBIN CLOUD NATIVE PLATFORM (CNP)**

For RAN, core, MEC, OSS and BSS use cases Kubernetes platform optimized for running RAN, core and MEC applications, with special focus on zero-touch deployment and life cycle automation

- **ROBIN CLOUD NATIVE STORAGE (CNS)**

For databases, big data, message queues, timeseries, AI/ML use cases. Highest performing cloud-native storage stack for any Kubernetes on-premises or in any cloud with special focus on application-aware data management and operational automation

- **ROBIN MULTI DATA CENTER AUTOMATION PLATFORM (MDCAP)**

For metal-to-service automation use cases, Highly scalable infrastructure-to-service orchestrator to manage bare-metal servers, network elements, network functions and apps across 100,000+ servers and 10,000+ clusters, and data centers and clouds.

Why To Choose Robin?

Deploy stateful apps on Kubernetes

- Highest performing storage and data management for any Kubernetes on-premises or in any cloud. Automate all aspects of critical day-2 operations to run databases, big data, time series and message queue services in production on Kubernetes.

Deploy 4G/5G RAN and core at scale

- Bring cloud agility to deploy 4G and 5G RAN (DU, CU-CP and CU-DP) on COTS hardware in minutes. Enable centralized orchestration of 10s of thousands of cell-sites and base-band units.

Deploy and manage apps at the edge

- Deploy complex storage and network-intensive apps on edge clusters with ease. Enable scalable automation of rollout, upgrade, and auto-heal apps at edge locations.

Common platform to run containers and VMs

- Run containers and virtual machines on Kubernetes directly on bare-metal. Enable consistent and common lifecycle management of containers and virtual machines.

Automate day-2 operations

- Bring cloud agility to your bare-metal infrastructure. Centrally manage 10s of thousands of Kubernetes clusters from edge to cloud to private data centers. Create repeatable and robust workflows to automate all network and IT operations.

Reference :

- www.robin.io
- [Crunchbase.com/organization/robin-systems](https://crunchbase.com/organization/robin-systems)
- <https://docs.robin.io>



Introduction :

Oracle database is a relational database management system. It is also called **OracleDB**, or simply **Oracle**. It is produced and marketed by **Oracle Corporation**. It was created in **1977** by **Lawrence Ellison** and other engineers. It is one of the most popular relational database engines in the IT market for storing, organizing, and retrieving data.

Oracle database was the first DB that was designed for enterprise grid computing and data warehousing. Enterprise grid computing provides the most flexible and cost-effective way to manage information and applications. It uses SQL queries as a language for interacting with the database.

Project Summary :

Website	oracle.com/database
Organization	Oracle Systems Corporation
License	Not open source
Open/Proprietary	Proprietary
Source Path	Nil

Brief Description	Oracle Autonomous Database is an all-in-one cloud database solution for data marts, data lakes, operational reporting, and batch data processing. Oracle uses machine learning to completely automate all routine databases.
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Project Details:

Key Features

The topmost feature that makes Oracle stand out of the box is its high availability. Also, you have other features like performance and scalability, Security, Backup & Recovery

i. Availability:

In easy terms, the meaning of high availability is that the database must be available anytime a user wants it. The 24*7 availability of the Oracle Database is what makes it stand out of the box.

ii. Performance and Scalability:

Oracle Database deals with high portability which means, the software that is set up using oracle can be switched to any operating system without making changes in the codes. Also, the concept of Oracle RAC which is in high demand as of now, is used to control the inconsistency and concurrency of data for the multiuser databases.

iii. Security :

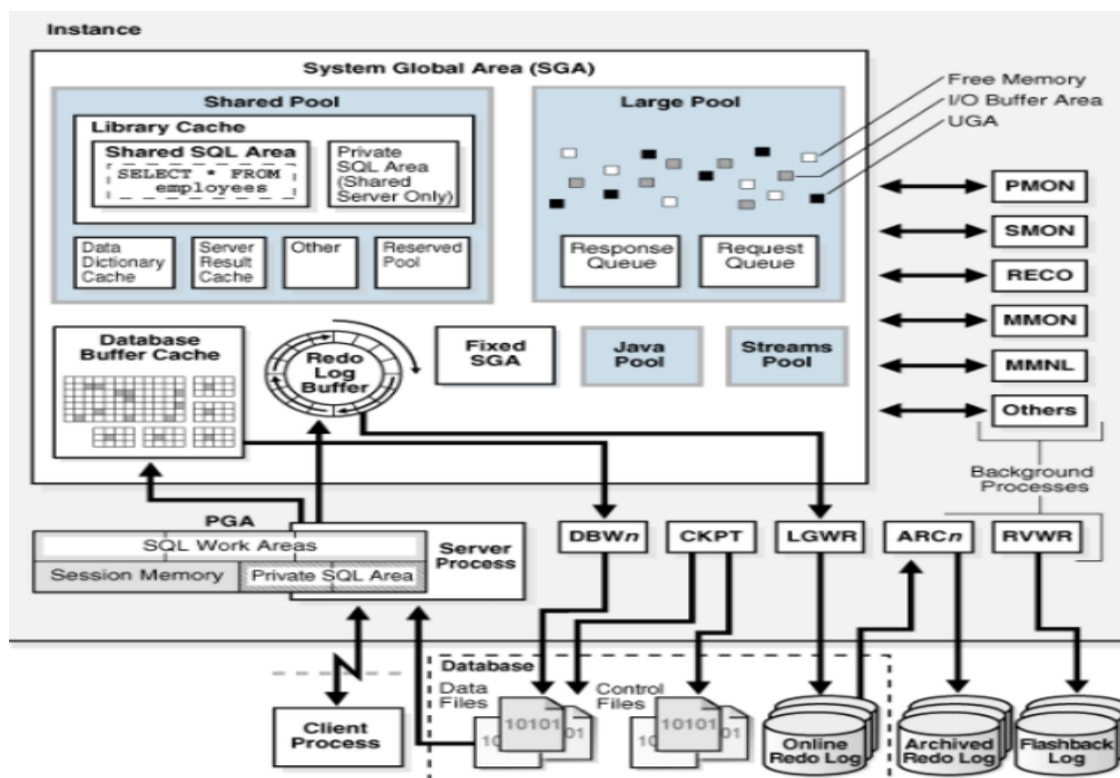
Security is of utmost importance when it comes to dealing with data. Using the features of the oracle, any unauthorized access from any unauthorized source can be controlled. Also, data can be limited to certain users.

Architecture :

The database consists of data files, control files, online redo log, archived redo log, flashback log so these are database physical files. The instance consists of two things one is SGA and another one is background processes. Components of SGA are shared pool, large pool, database buffer cache, redo log buffer, java pool, streams pool etc, are the background processes. PGA consists of SQL work areas.

The architecture includes:

1. Physical components
2. Memory components
3. Processes
4. Logical Structure

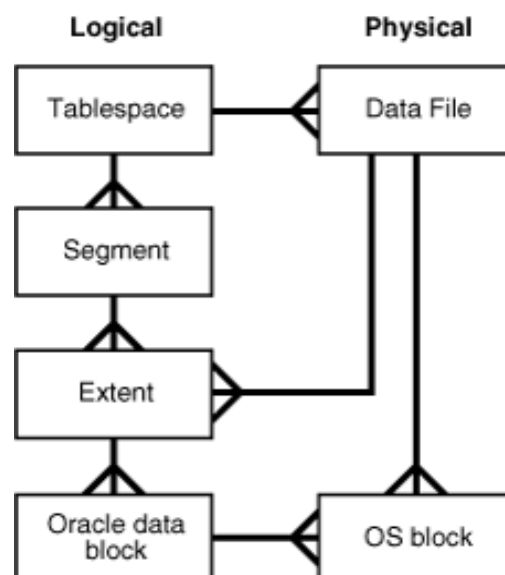


An oracle physical structure consists of the following files: –

1. **Data Files:** These files store the database information that a firm or organization needs in order to operate.
2. **Control File:** These files store database creation date and time, SCN information, backup and recovery information, and others.
3. **Redo log files:** These files are used to recover the database in the event of any failures.
4. **Archived redo log files:** These files are used to recover the database if there is some failure in the disk.
5. **Parameter files:** These files used to specify parameters for configuring an Oracle instance when it starts up.

6. **Password files:** Authenticates only to the special users of the database.
7. **Alert and trace log files:** These files store information about faults and steps taken that affect the configuration of the database.

An oracle logical and physical structure consists of the following files: –



1. **Table Space:** A tablespace is a logical container for storing objects such as tables, indexes, sequences, clusters, and database objects. Large table space may have more than one data file allocated for storing objects assigned to that tablespace.

2. Segment: When a logical storage object is created within a tablespace, for example, an employee table, a segment is allocated to the object.

Oracle Products :

- **ORACLE CLOUD INFRASTRUCTURE (OCI)**

It is a platform of cloud services that enable you to build and run a wide range of applications in a highly-available, consistently high-performance environment. The cloud infrastructure of this solution offers the best service in reliable storage, AI-driven analytics and other services. We can provide you the list of companies and executives' contacts from the same companies.

- **ORACLE CLOUD APPLICATIONS (OCA)**

Oracle Applications comprise the applications software or business software of the Oracle Corporation both in the cloud and on-premises. The term refers to the non-database and non-middleware parts. Oracle NetSuite is the leading integrated cloud business software suite, including business accounting, ERP, CRM, and ecommerce software.

● ORACLE HARDWARE AND SOFTWARE (OHS)

Oracle hardware includes a full-suite of scalable engineered systems, servers, and storage that enable enterprises to optimize application and database performance, protect crucial data, and lower costs. Oracle is one of the largest vendors in the enterprise IT market and the shorthand name of its flagship product.

Why To Choose Oracle ?

Oracle database products offer customers cost-optimized and high-performance versions of Oracle Database, the world's leading converged, multi-model database management system, as well as in-memory, NoSQL and MySQL databases.

The performance and scalability of Oracle databases are second to none. Oracle offers mechanisms to monitor and control access to the database. Whatever your database failure, you can always recover your data

Reference :

- www.oracle.io
- <https://www.oracle.com/database>
- <https://www.javatpoint.com>



Introduction :

Terra is an open source storage management and automation project. Terra is a universal SDS (software-defined storage) controller for connecting storage to Kubernetes, OpenStack, and VMware environments.

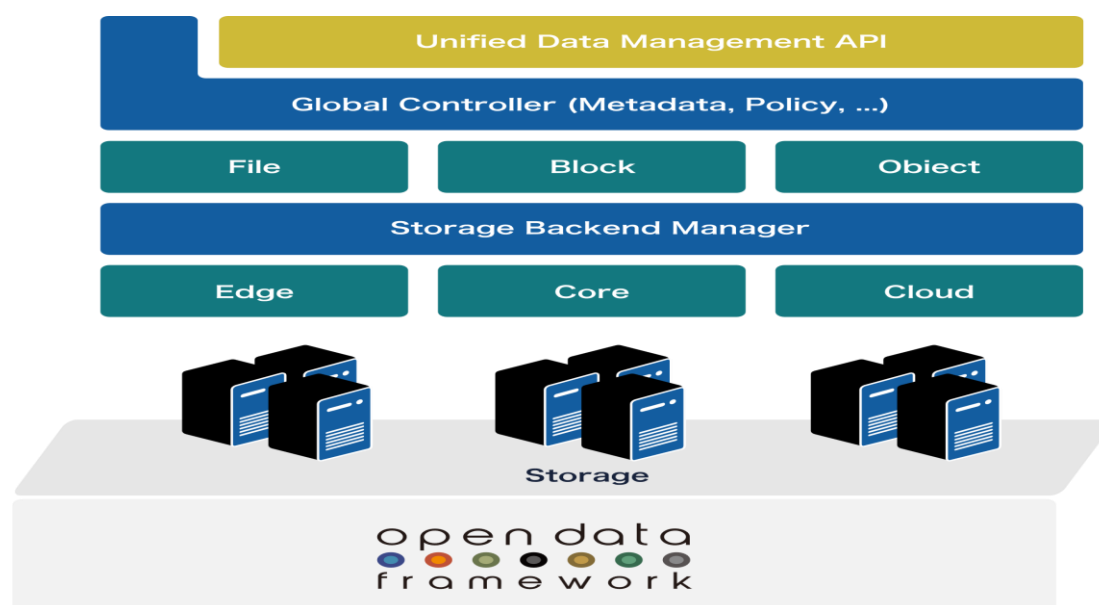
SDS controller software provides storage access services, networking, and connectivity. The most important characteristic of SDS controller software is that it makes no assumptions about the capacity or usefulness of the underlying hardware. Supports to connect different platforms like Kubernetes, Open Stack, VM ware through plugins

SDS is a software controller that manages and virtualizes your physical storage. As a result, you can control where and how data is stored. A software-defined storage controller provides networking, storage access, and connectivity services. The SDS controller does not rely on the usefulness or capacity of hardware.

Project Summary:

Website	https://www.sodafoundation.io/projects/terra/
Organization	Soda Foundation
License	Apache License 2.0
Open/Proprietary	Open
Source Path	https://github.com/sodafoundation/controller
Brief Description	Terra is a universal SDS (software-defined storage) controller for connecting storage to Kubernetes, OpenStack, and VMware environments.

Architecture :



Use Cases :

- Storage Provisioning: automate block and file storage provisioning
- Storage-as-a-Service (STaaS): self-service catalog empowers users and reduces OPEX

Features :

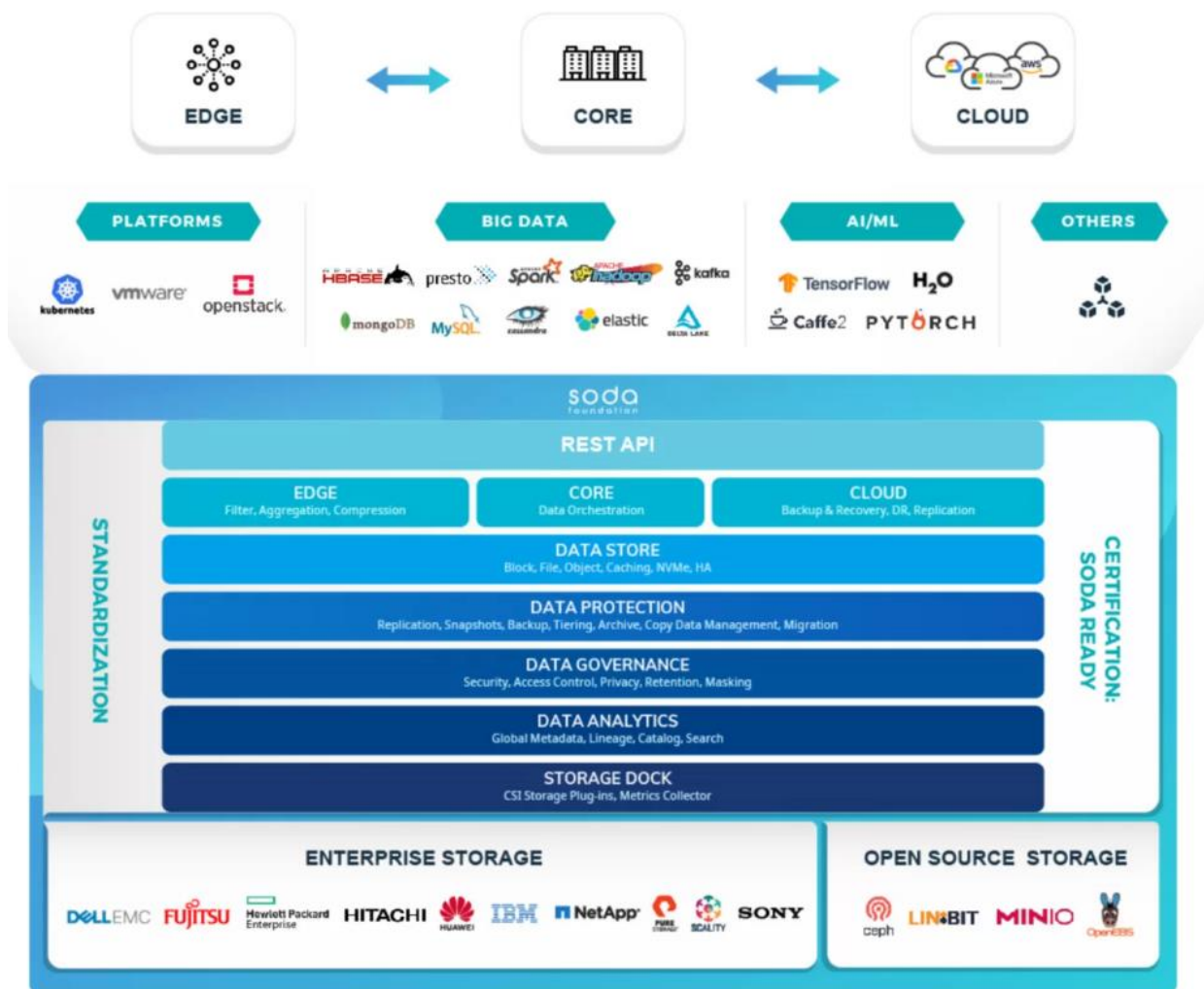
- Standardized API, Controller for metadata and Dock for Drivers to provide seamless data management across various storage vendors
- Supports to connect different platforms like Kubernetes, Open Stack, VMware through plugins
- Supports custom vendors drivers and CSI plugins for heterogeneous storages

Community Channels

1. Website : <https://sodafoundation.org/>
2. GitHub : <https://github.com/sodafoundation/>
3. Discord : <https://discord.gg/KjzgswS/>
4. Twitter : <https://twitter.com/SodaFoundation/>
5. Telegram : <https://t.me/SodaFoundation/>
6. Slack : <http://www.sodafoundation.io/slack/>

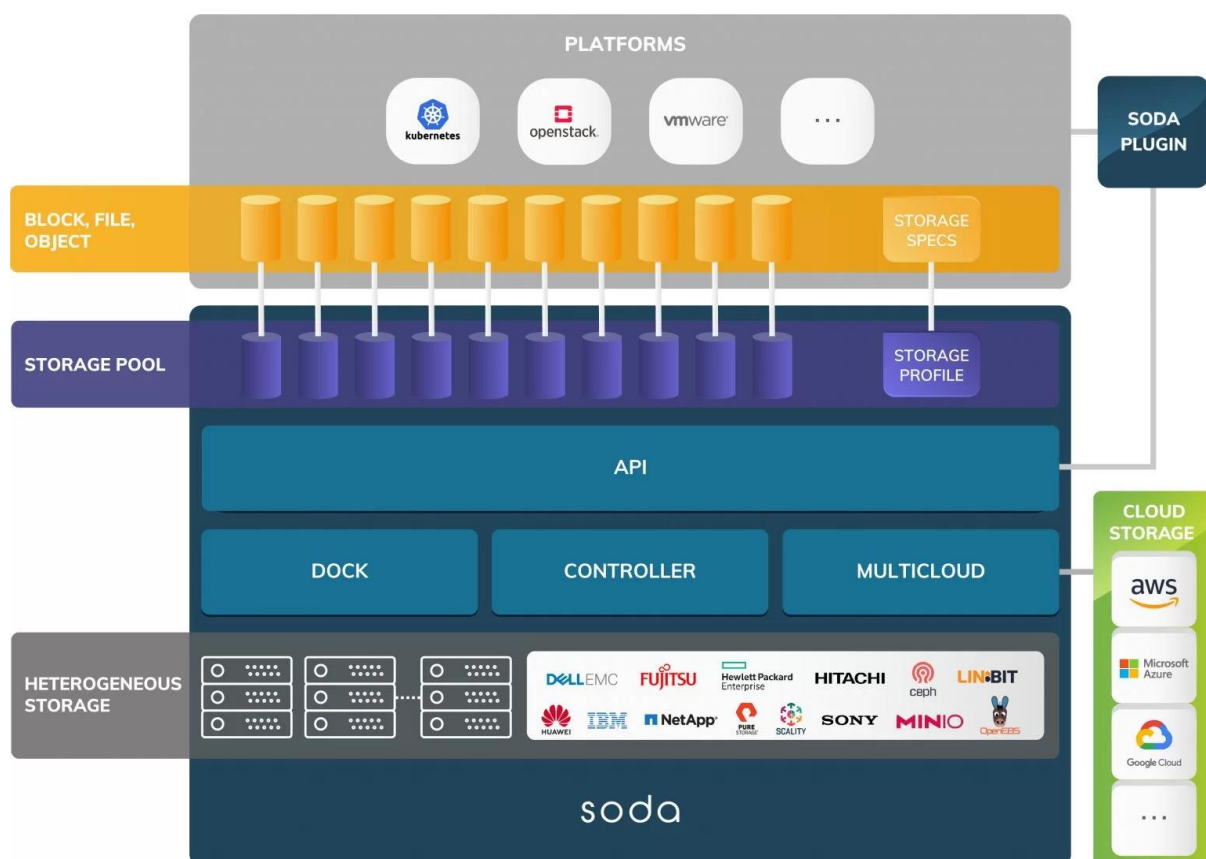
Project Organization:

Terra are the projects from Soda Framework. Como and Terra are a part of the foundation. Soda Foundation is a non-profit organization. SODA Foundation is an open source project under Linux Foundation that aims to establish an open, unified, and autonomous data management framework for data mobility from the edge, to core, to cloud.



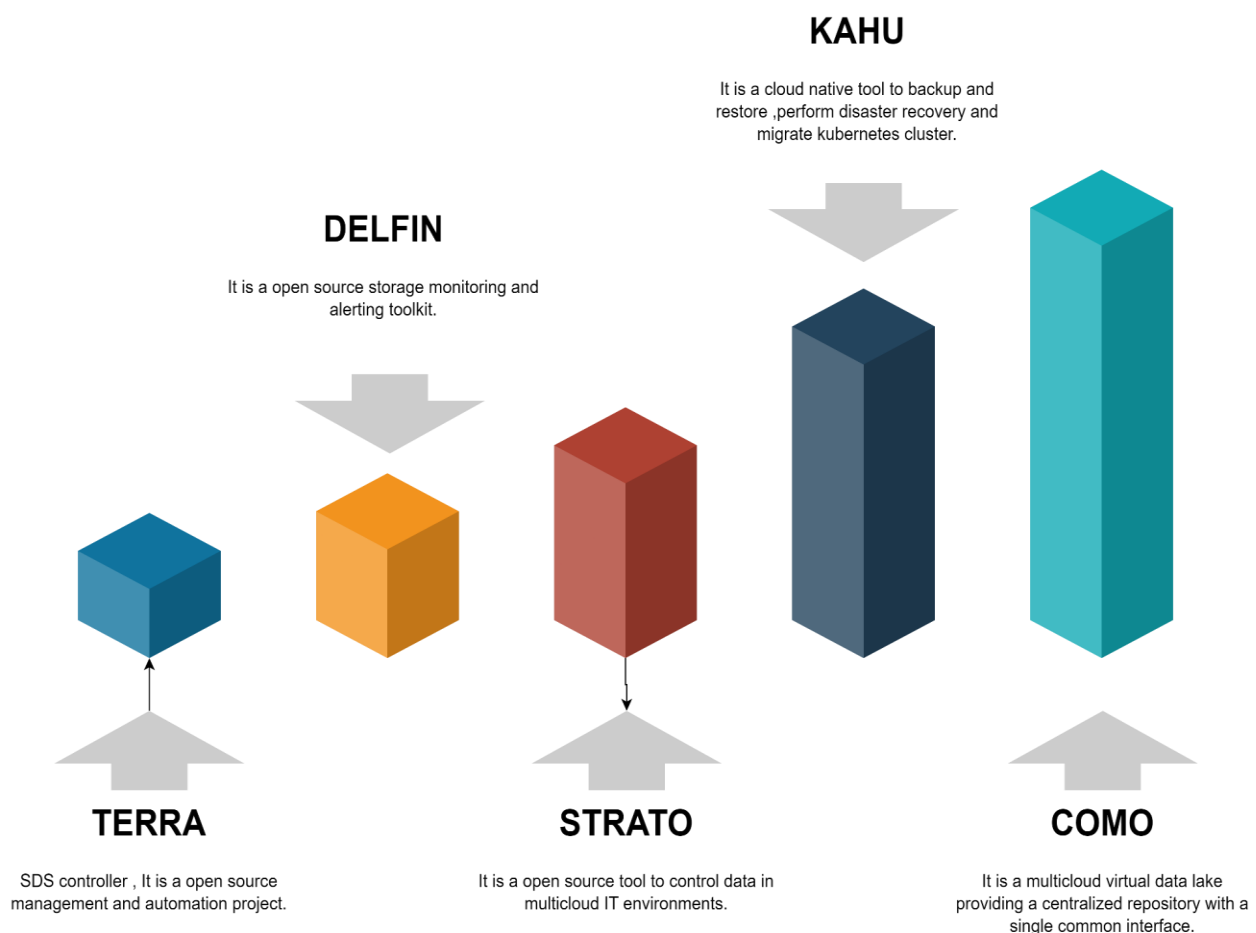
SODA Foundation Chart

SODA (SODA Open Data Autonomy) is evolving to realize a challenging goal of building a unified framework for data and storage management. It connects the application platforms and solutions to the backend storages seamlessly, be it on prem or cloud through a unified API layer. This enables the application platforms to focus on building more valuable use cases rather than worrying about managing the underlying storage backends and data management.



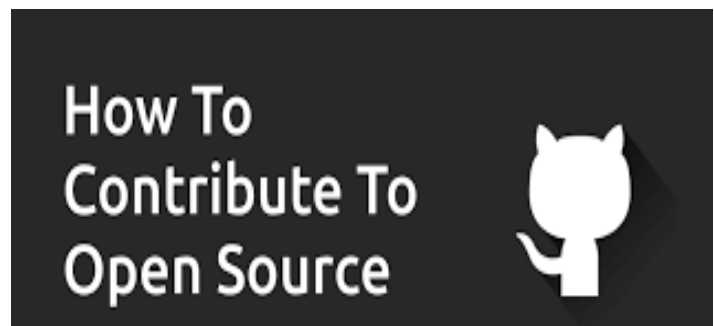
SODA Foundation India group is to address the storage and data management challenges in the industry and provide an open and unified “One Data Framework”.

SODA Foundation Projects :



Open-Source Software is a type of software whose code is publicly available to use and modify. Open-Source Contribution involves contributing to the development or improvement of open-source software. This is where open source contribution comes in. Contributors from around the world help develop and improve the software for every one of us who use it. Being a contributor will give you the superpower to be a part of something that is impacting so many lives.

Apart from the impact that you to create, it also helps you become a better developer and with time a good mentor, leader, and passionate team player.



If you have already done some projects, open-sourcing your projects might be a good way to get started. Put it on GitHub and seek contributions from the community. This will not only add value to your project but will also help you to collaborate with many developers around the world.

Many widely-used frameworks and libraries were open-sourced by individual developers. Several people started collaborating and maintaining these projects after the projects got popular.

Ways to Contribute

i. Give feedback on the product: Getting feedback from the users on top of data analytics is a very simple way to contribute to the product, yet providing a lot of value.

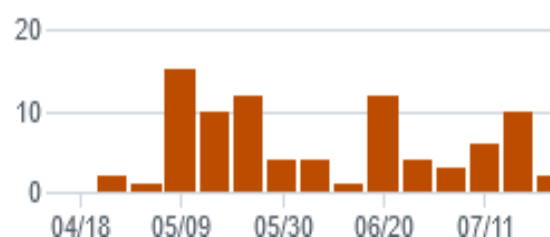
<input type="checkbox"/>	<input checked="" type="radio"/>	Add new Controls for Array verification			
		#2321 opened on 3 Nov 2021 by bcivel			
<input type="checkbox"/>	<input checked="" type="radio"/>	New public API	Nat : enhancement	Perim : ENGINETransversal	Prio : 1 high+ Status : in progress
		#2311 opened on 14 Oct 2021 by MorganLmd			
<input type="checkbox"/>	<input checked="" type="radio"/>	Control of value "true"/"false" returns "t" and "f"			
		#2310 opened on 7 Oct 2021 by CVERNAY			

ii. Write use-cases documentation : Documentation can be found in the form of in-application tutorials, community forums or documentation portals, tailored for different personas.

5.1.2. Test Case attributes

Field	Description
Test Folder	Test Folder name on which test case belong.
Test case	An ID (alphanumeric character) that identify the Test Case inside the Test Folder .
Short Description	Provide a brief description of the Test Case .

iii. With coding skills, fix simple bugs : A product with more features grows its codebase and complexity. While contributing to the core product can be a bit harder, fixing simple bugs is more accessible.



There are many different ways to contribute to open source projects, depending on your skills and interests. Here are some of the most common ways to contribute:

Code contributions: This is one of the most popular ways to contribute to open source projects. You can contribute to open source software by submitting bug fixes, adding new features, or improving existing code. You can find open source projects on platforms like GitHub or GitLab, and look for issues or features that you can work on. You can then fork the project, make your changes, and submit a pull request for review.

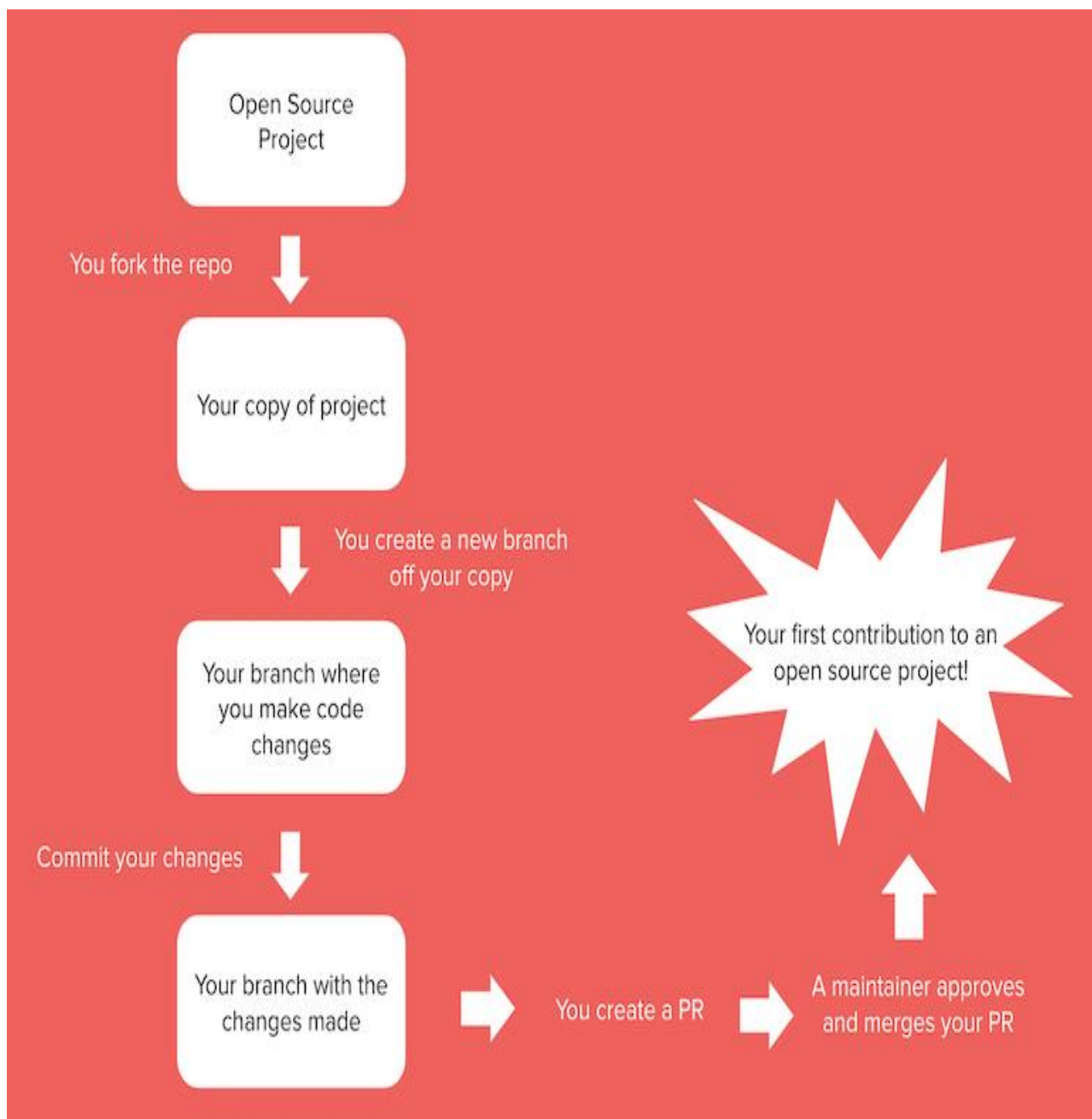
Documentation: Many open source projects need help with documentation. You can help by writing or improving the project's documentation, including user guides, installation instructions, and developer documentation. This can help make the project more accessible to users and developers.

Bug reporting: Another way to contribute to open source projects is by reporting bugs or issues that you encounter. This can help the project maintainers identify and fix issues, and improve the quality of the software.

Testing: You can also contribute to open source projects by testing new releases or features of the software, and reporting any issues or bugs you find. This helps ensure the quality of the software and identify any issues before they affect users.

Contribution Flowchart

Open-Source Software is a type of software whose code is publicly available to use and modify. Open-Source Contribution involves contributing to the development or improvement of open-source software.



METHOD TO JOIN COMMUNITY

Joining an open source community is a great way to get started with contributing to open source projects. Here are some methods to join an open source community:

➤ **Start by exploring:**

We can start by exploring open source projects that you find interesting or relevant to your skills. Look for projects that align with your interests or expertise, and review their codebase, documentation, and community engagement to learn more about them.

➤ **Attend community events:**

You can attend community events such as hackathons, meetups, or conferences to learn more about open source projects and connect with other community members. These events provide opportunities to meet project maintainers and other contributors, learn about the project's development process, and identify areas where you can contribute.

➤ **Engage with the community:** Once you have identified a project you are interested in, engage with the community through online forums, social media, or other communication channels. Introduce yourself, ask questions, and offer to help with documentation, testing, or other contributions.

➤ **Contribute to the project:** Once you have become familiar with the project and its community, start contributing to the project by submitting bug reports, fixing issues, improving documentation, or developing new features. Be sure to follow the project's contribution guidelines and work with the community to ensure your contributions align with the project's goals and objectives.

➤ **Become a core contributor:** As you continue to contribute to the project, you may be invited to become a core contributor or maintain the project. This can provide additional opportunities to influence the project's direction, and contribute to the community's growth and development

Community Engagement Experience

Community engagement, can build and sustain cohesive communities and help their local governments better serve their needs. Additionally, community engagement can lead to improved outcomes for the underprivileged or underserved members of a community, and it's a driving factor in social transformation. During my course, I was able to participate in various community engagement programmes organised by the SODA Foundation. The community engagement programmes were global community meetings, design meetings, and meetups.

We were provided with the links for these meetings as they were in online mode. The community meetings were held every other Friday from 12:00 p.m. to 12:50 p.m. The meetings were organised by Mr. Sanil Kumar and Mr. Anvith K. S., members of the SODA Foundation. The SODA global community meeting is a regular sync-up meeting for discussing all the technical and ecosystem-related aspects with all the members of its community. It is open to all. The meeting discussed design, development progress, issues, and ideas from the developers of various SODA Foundation projects.

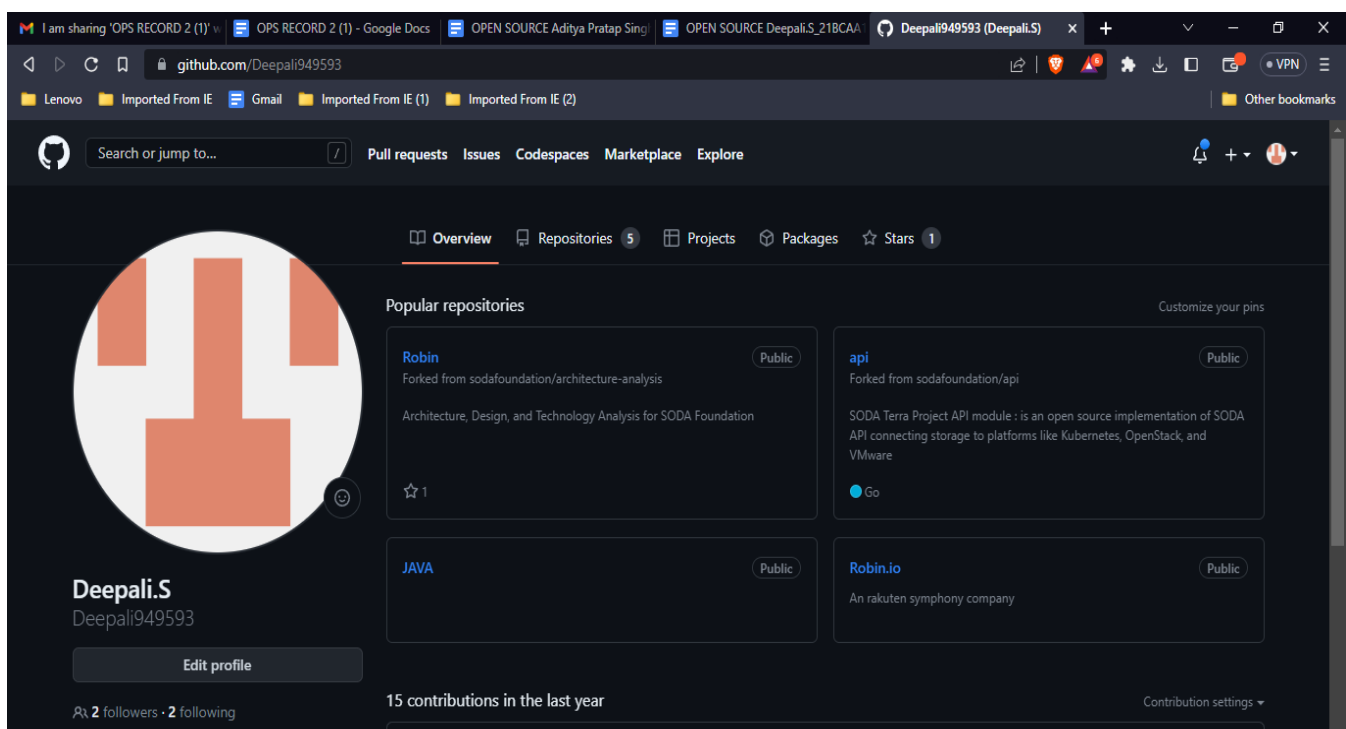
The project's maintainers and contributors discussed the project's future direction and new features. The projects are TERRA, DELFIN, STRATO, KAHU, and COMO. SODA Design meetings were held every other Tuesday from 12:30 pm to 1:30 pm. Design meetings are mainly for detailed discussions, reviews, and updates of architecture, design, project integrations, specifications, and It is an updated meeting of the AWG along with the TOC and other maintainers or developers.

The SODA Meetup will take place on February 25, 2023, from 9:30 a.m. to 1:00 p.m. We were lucky enough to have the SODA Meetup on the Kristu Jayanti College campus. The meeting had various resource persons talk about cloud, multi-cloud, and data management from top tech companies including Microsoft, Huawei, etc. Contributors and members from the SODA meetup community and students from our college also participated in the meetup.

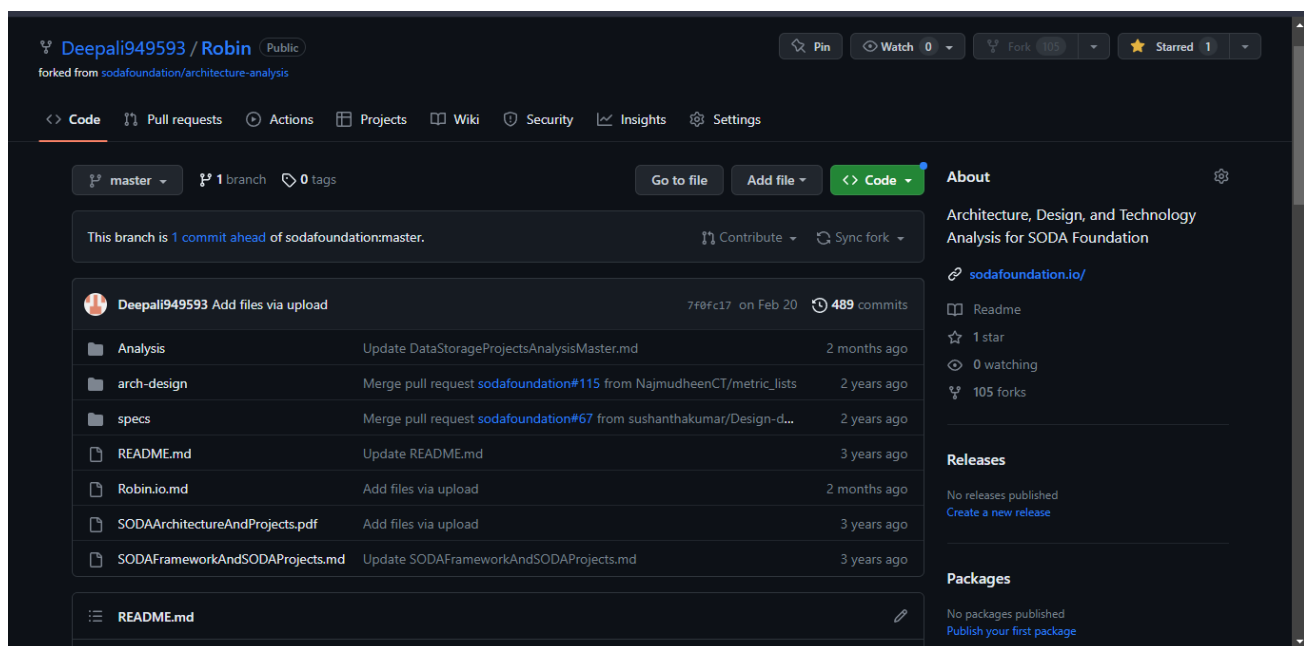
The meetup had a panel discussion about data management by experts from different industries. It was a good experience for me. Moreover, by engaging with the community, I became more invested in the project and felt a sense of belonging to a larger community of developers working towards a Common goal.

My Contributions

During the course, I contributed to an open-source project by creating documentation for the RESTIC Project. I started analysing the project by browsing the information related to the Rustic project. I started gathering information from website and google. After gathering information, I started analysing the project's features, architecture, and technical aspects and made documentation that included the above details



I was able to get to know the proper method of documentation in Stack Edit. After creating the documentation for the same, I forked the architecture analysis repository of the SODA Foundation to my GitHub account. Then I uploaded my documentation to the forked repository and committed the changes. Once I had made the changes, I created a pull request on GitHub and requested a review from the project's maintainers



Open Source Value

The huge benefit of contributing to open source projects is that you can network with other developers. This means that you'll meet new people and make friends, collaborate with other developers on projects, find mentors and have an opportunity to learn from each other.

Contributing to open source projects is one of the best ways to learn how to look at a problem from different perspectives. When you're working on an open source project, you're likely going to be working with other developers who have their own unique approaches, and this can help you see problems from a totally different angle.

You might find that your teammates don't approach a problem in the same way as you do—and that's okay! You can learn from their approaches and what they bring to the table, too. Likewise, it's also a great way of you sharing your own knowledge with other developers working on the project.

When you contribute to an open source project, you're giving back to the community at large. Not only does this help you hone your skills, but it also allows you to get better at receiving feedback. You'll be able to see what works and what doesn't work for other people, and use that information as a foundation for improving your own work.

- 1 Free Redistribution
- 2 Source Code Available
- 3 Derived Works Allowed
- 4 Integrity of the Author's Source Code
- 5 No Discrimination Against Persons or Groups
- 6 No Discrimination Against Fields of Use
- 7 Redistribution Maintains All Rights

Security

Anyone can view the source code of open source software, as the name suggests. In addition to the early identification of general defects, this enables the identification and remediation of defects specifically impacting security. Community driven peer review and openness trump "security by obscurity".

Auditability and Privacy

Auditability is of growing importance in a world increasingly concerned not only with security, but also the privacy of users data. Open source code allows for external audit of software - ensuring compliance with software standards and legal requirements. Proprietary software essentially asks for a leap of faith.

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