

[CNCF - KCL]
LFX - MENTORSHIP 2024
Supports tree-sitter for KCL

How did you find out about our mentorship program?

I found out about the LFX Mentorship program through previous Mentees and the CNCF GitHub repository.

Why are you interested in this program?

I have been interested in the DevOps space for some time now, adding to it my interest in how a new programming language is created, working with parsing tools, and supporting Documentation along with different test cases and syntax. This project is going to provide me with a lot of experience in KCL, working with a very big organization incubated under CNCF is a must-do opportunity for me. This project will be a great learning curve for me in learning compiler development.

What experience and knowledge/skills do you have that are applicable to this program?

I have been an active open-source contributor for more than a year now. I got selected for some of the Open Source Programs like GSSoC'23 and I got selected for the Bitcoin FOSS Development Program for the Summer of Bitcoin which helped me to learn Rust, Golang, and the Bitcoin space in the best way.

I have been involved in other Kubernetes projects like the Kyverno project, where I have been actively involved in testing of engine packages which demonstrates my .yaml and Go skills and interaction with the maintainers. I enhanced the coverage of the engine package, added the Kyverno cluster policy, and its resources, and added spec rules which are also to be added for the KCL Tree sitter project.

I have over 1.1k+ commits and over 100+ PRs which you can find in my [GitHub](#) account Here's a link to my [resume](#) where you can find my top Projects, experiences, and code contributions.

My involvement in KCL / tree-sitter-kcl

- I have completed the pretest for the Addition of nodes and expressions, I contributed to it through [4 PRs](#), in which I have added multiple expressions and schemas to the grammar. Added more test cases for literals, expressions, statements, import, added more test cases for assign, schema, types.

- I have **already added** a ``mixin statement, check statement, reserved words, and type alias statement`` which were to be added for **this term**, which showcases my interest, proficiency, and understanding of this project.
- I did fix the ERROR codes which were added by other contributors in test cases in various test files. Those fixes helped me in a complete understanding in depth about the tree-sitter project.
- I have been active on Slack, suggesting and implementing various improvements.

What do you hope to get out of this mentorship experience?

I am eager to learn from a large organization on this project, which will significantly contribute to my DevOps journey. My passion for open-source development motivates me to make impactful contributions that benefit a wide audience. I aim to gain valuable insights and mentorship from the maintainers.

Project Proposal

Supports tree-sitter for KCL

Personal Details and Contact Information

Hi! I am Vishal, a Junior year student from the *Indian Institute of Technology (BHU) Varanasi, India*. I am an avid open-source enthusiast who loves making (and breaking) software.

You might better recognize me as [Vishalk91-4](#), as I have contributed a bit to tree-sitter-kcl in the past month. Here are my details and contact information:

- **Email Address:** korada.vishal.phe22@itbhu.ac.in
- **Degree:** Bachelor of Technology (B. Tech.)
- **Slack:** Korada Vishal
- **Time-zone:** Indian Standard Time (+5:30 UTC)
- **LinkedIn:** <https://www.linkedin.com/in/vishal-k-2865b6254>
- **Resume:** <https://vishalk91-4.co/cv.pdf>
- **Postal Address:** West Bengal (721304), India
- **Phone:** (+91) 82934 26267

Synopsis:

This project aims to support more features of the IDE in the tree-sitter-kcl made for completing the addition of the entire syntax of KCL so that the parser can pass all the test integrations. The primary motive is the addition of all the syntax present in KCL docs which will in turn help the developers in their productivity and enhance the code quality by implementing extensive test cases and robust error handling.

Timeline and Plan:

- **Week 1-2:**
 - Getting familiar with the code base and the mentors.
 - Discussing the goals, my approach, and the milestones with the mentors.
 - Fixing the ERROR codes present in the current code base.
 - Adding Test Cases to those elements where grammar has been assigned.
- **Week 3-4:**
 - Adding the grammar code for Line breaks, continuation lines, and handling of whitespaces.
 - Adding grammar for comments, index signature.
 - Adding test cases for the above code style grammar added.
- **Week 5-6:**
 - Common sequence operators to be added in grammar.js, addition of selector, index expressions.
 - Adding Membership tests, test cases for the above-added operators and expressions.
 - Mid-term mentee evaluations.
- **Week 7-8:**
 - Adding Lexical grammar for line joining, adding the grammar for import modules with multiple files.
 - Adding argument grammar top level, multi-file, addition of grammar for path selector and variable override.
 - Adding test cases for checking the parsing of the above .yaml grammar.
- **Week 9-10:**
 - Adding type system i.e type alias, type guard, unit types conversion, block literal style, grammar for remaining operand.
 - Adding test cases for the above types listed, test cases for decorators.
- **Week 11-12:**
 - Adding Schemas for specific types, config operations, attributes, and union type, complete definition of the rule, adding the remaining code for mixin and protocol for schema.
 - Adding the test cases for the above schemas.
 - Code enhancement, addition of error handling definitions and Final Mentee Evaluations.

Future Plans after LFX:

I intend to stay with the community after the LFX mentorship and will try to optimize the project. I'll keep on contributing to improving the features of the KCL. It would give me immense pleasure to be a part of the KCL community and improve the lives of fellow developers. I am thinking of working towards optimizing this project even after the LFX Mentorship. I intend to contribute to other projects of KCL as well as to indulge more with the KCL Organization. It would be a great opportunity for me to be a part of the KCL community.