



LLVM.org Website Redesign

Google Summer of Code 2024

Chaitanya Shahare 31.07.2024

Mentors: Tanya Lattner & Vassil Vassilev





Why do we need a new website?

Current Website

- Hard to Navigate
- Cluttered
- Outdated Design

The screenshot shows the LLVM Compiler Infrastructure website. The header features the title "The LLVM Compiler Infrastructure" with a small LLVM logo. The main content area is divided into several sections: "LLVM Overview" (describing the project's goals and history), "Latest LLVM Release!" (announcing LLVM 18.1.8), "Upcoming Events" (listing a meeting in April 2024), "ACM Software System Award!" (highlighting a 2012 award), and "Upcoming Releases" (showing the release schedule for 19.1.x). On the left side, there is a "Site Map" with links to Overview, Features, Documentation, Command Guide, FAQ, Publications, LLVM Projects, Open Projects, LLVM Users, Bug tracker, LLVM Logo, Blog, Meetings, and LLVM Foundation. Below the Site Map is a "Download!" section with links for LLVM 18.1.8, All Releases, APT Packages, Fedora Snapshot Packages, and Pre-releases. At the bottom left, there is a "Search this Site" box and a "Useful Links" section with links to Forums and LLVM Discourse.

The LLVM Compiler Infrastructure

LLVM Overview

The LLVM Project is a collection of modular and reusable compiler and toolchain technologies. Despite its name, LLVM has little to do with traditional virtual machines. The name "LLVM" itself is not an acronym; it is the full name of the project.

LLVM began as a [research project](#) at the [University of Illinois](#), with the goal of providing a modern, SSA-based compilation strategy capable of supporting both static and dynamic compilation of arbitrary programming languages. Since then, LLVM has grown to be an umbrella project consisting of a number of subprojects, many of which are being used in production by a wide variety of [commercial and open source](#) projects as well as being widely used in [academic research](#). Code in the LLVM project is licensed under the ["Apache 2.0 License with LLVM exceptions"](#)

The primary sub-projects of LLVM are:

1. The **LLVM Core** libraries provide a modern source- and target-independent [optimizer](#), along with [code generation support](#) for many popular CPUs (as well as some less common ones!) These libraries are built around a [well specified](#) code representation known as the LLVM intermediate representation ("LLVM IR"). The LLVM Core libraries are [well documented](#), and it is particularly easy to invent your own language (or port an existing compiler) to use [LLVM as an optimizer and code generator](#).
2. **Clang** is an "LLVM native" C/C++/Objective-C compiler, which aims to deliver amazingly fast compiles, extremely useful [error and warning messages](#) and to provide a platform for building great source level tools. The [Clang Static Analyzer](#) and [clang-tidy](#) are tools that automatically find bugs in your code, and are great examples of the sort of tools that can be built using the Clang frontend as a library to parse C/C++ code.
3. The **LLDB** project builds on libraries provided by LLVM and Clang to provide a great native debugger. It uses the Clang ASTs and expression parser, LLVM JIT, LLVM disassembler, etc so that it provides an experience that "just works". It is also blazing fast and much more memory efficient than GDB at loading symbols.
4. The **libc++** and **libc++ ABI** projects provide a standard conformant and high-performance implementation of the C++ Standard Library, including full support for C++11 and C++14.
5. The **compiler-rt** project provides highly tuned implementations of the low-level code generator support routines like `__fixunsdftdi` and other calls generated when a target doesn't have a short sequence of native instructions to implement a core IR operation. It also provides implementations of run-time libraries for dynamic testing tools such as [AddressSanitizer](#), [ThreadSanitizer](#), [MemorySanitizer](#), and [DataFlowSanitizer](#).
6. The **MLIR** subproject is a novel approach to building reusable and extensible compiler infrastructure. MLIR

Latest LLVM Release!

18 June 2024: LLVM 18.1.8 is now [available for download!](#) LLVM is publicly available under an open source [License](#). Also, you might want to check out [the new features](#) in Git that will appear in the next LLVM release. If you want them early, [download LLVM](#) through anonymous Git.

Upcoming Events

[April 9-11, 2024](#) - EuroLLVM Dev Mtg

ACM Software System Award!

LLVM has been awarded the **2012 ACM Software System Award!** This award is given by ACM to *one* software system worldwide every year. LLVM is [in highly distinguished company!](#) Click on any of the individual recipients' names on that page for the detailed citation describing the award.

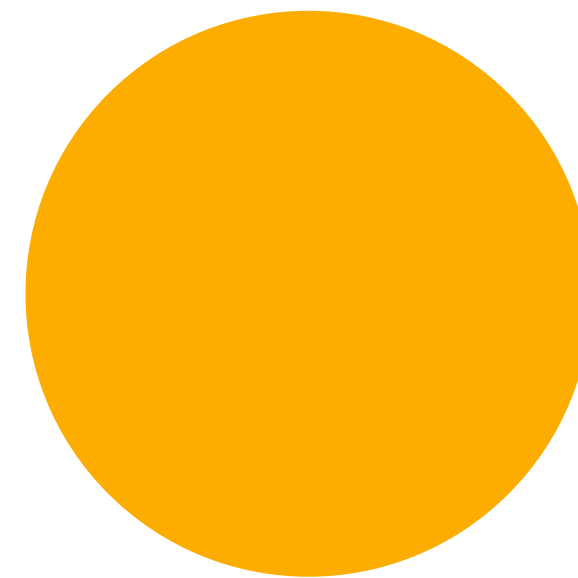
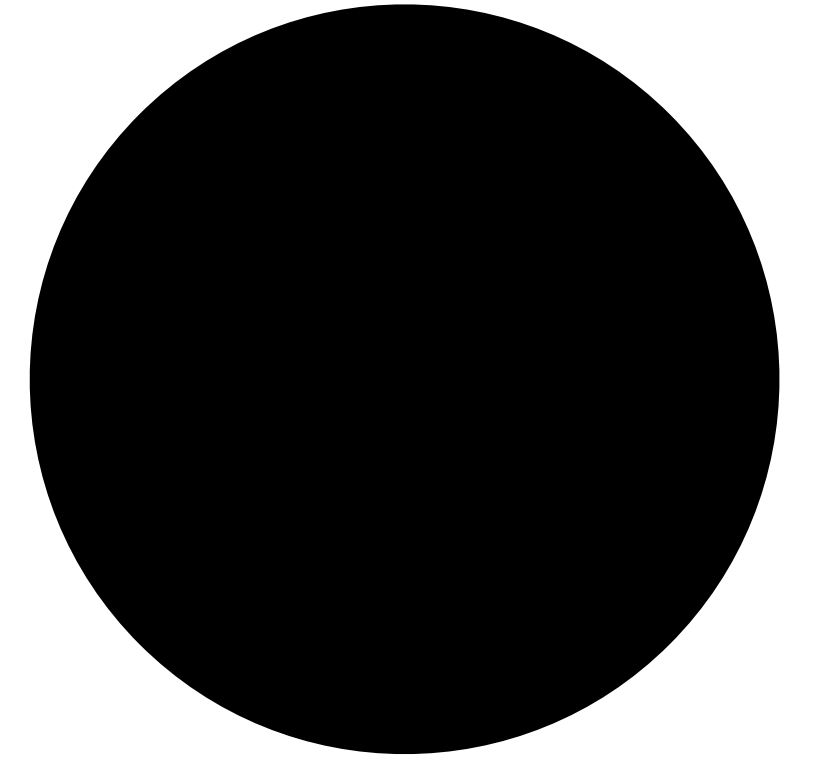
Upcoming Releases

LLVM Release Schedule:

- 19.1.x
 - Jul 23rd: release/19.x branch created
 - Jul 26th: 19.1.0-rc1
 - Aug 6th: 19.1.0-rc2
 - Aug 20th: 19.1.0-rc3
 - Sep 3rd: 19.1.0
 - Sep 17th: 19.1.1
 - Oct 1st: 19.1.2
 - Oct 15th: 19.1.3
 - Oct 29th: 19.1.4

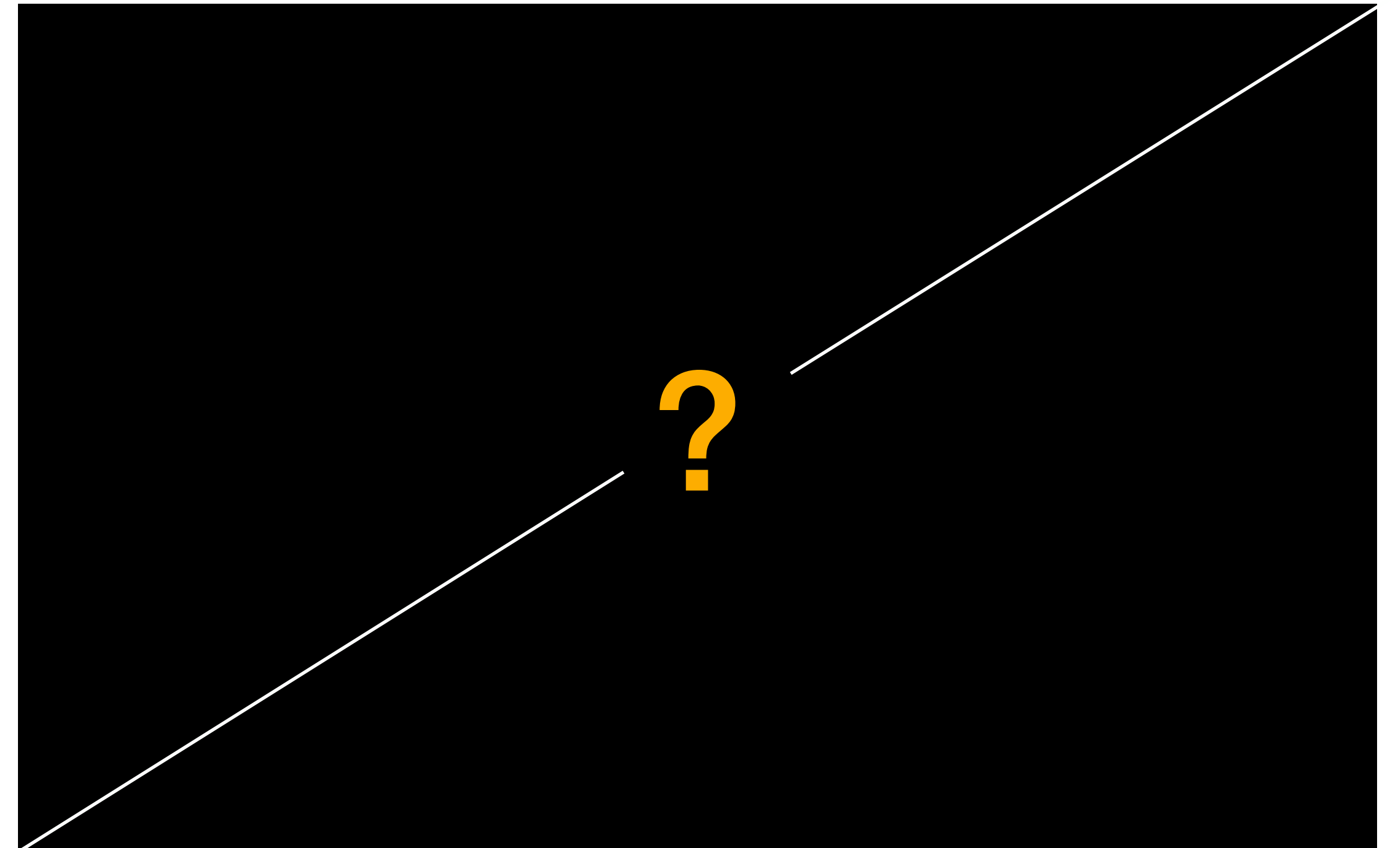
Screenshot of llvm.org landing page

Project Goals



Project Goals

- Modern LLVM.org website
- Navigation, mobile support & accessibility
- Content Discoverability & Usability
- Maintainability





Project Scope



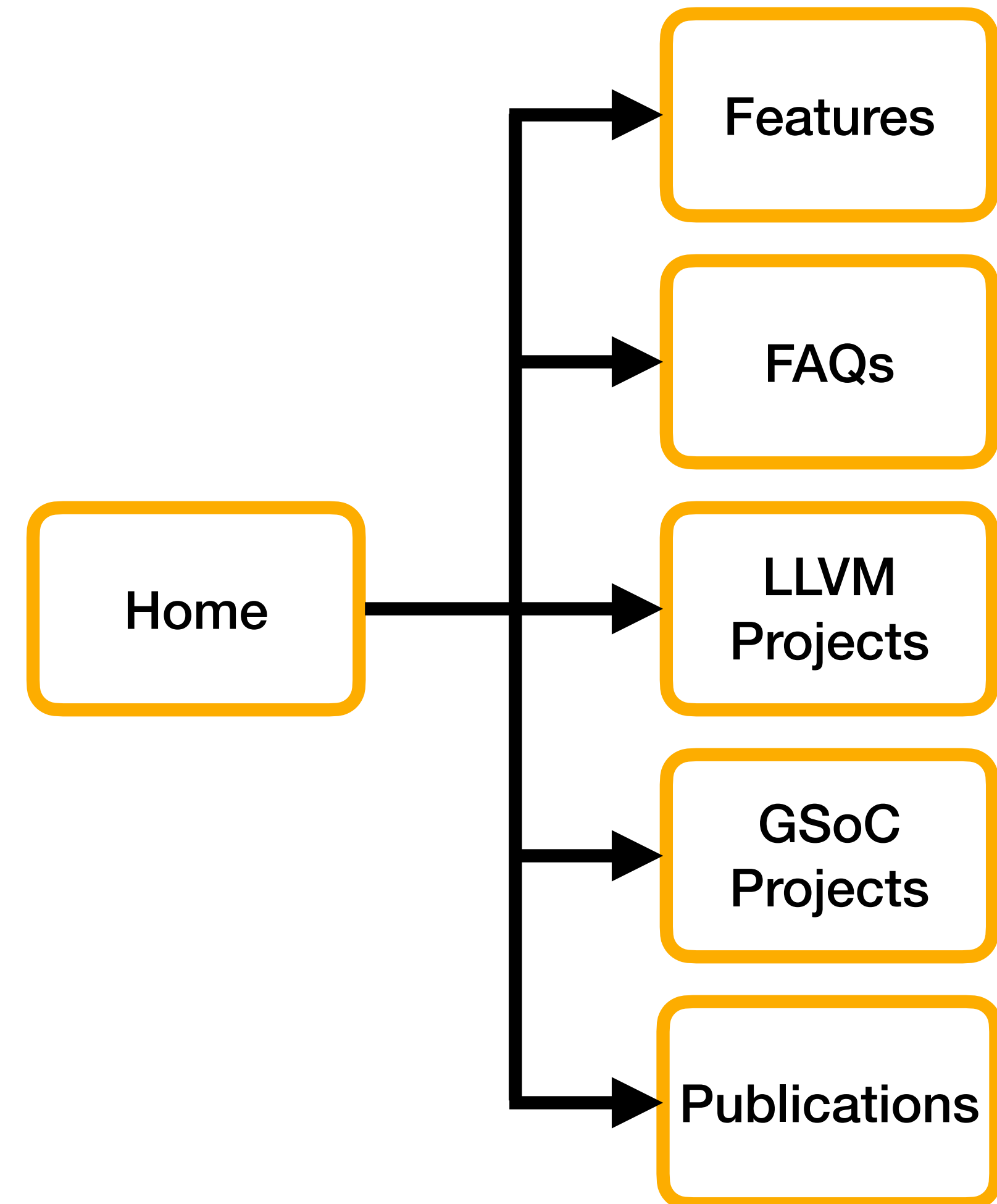
Project Scope

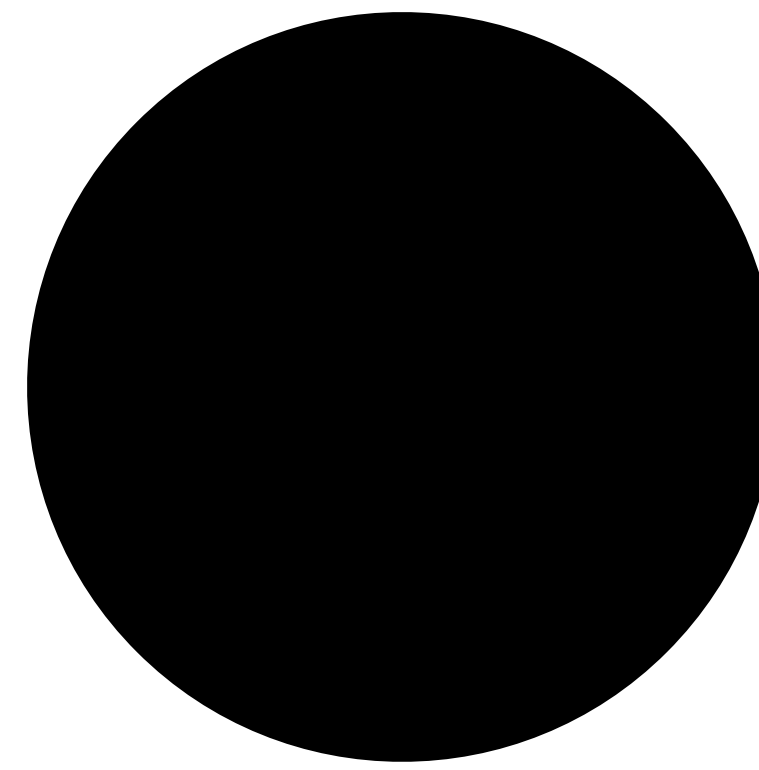
Objective: Redesign the LLVM website to improve user experience and engagement.

Key Areas of Focus:

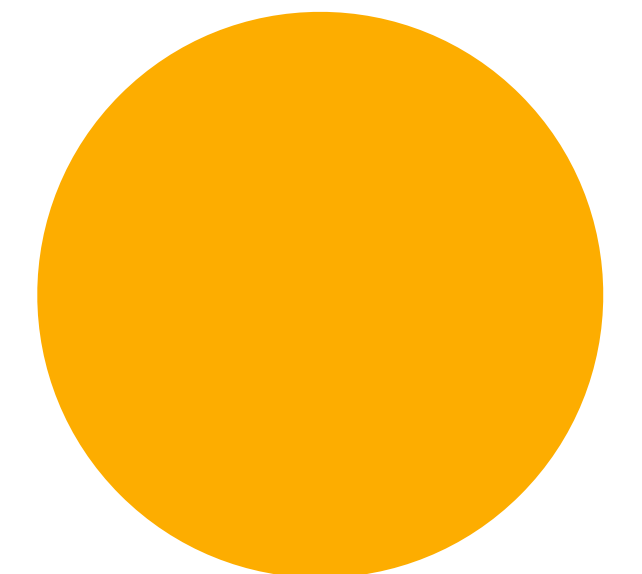
- Modernize design and layout
- Accessibility and usability
- Maintainability

Site Map



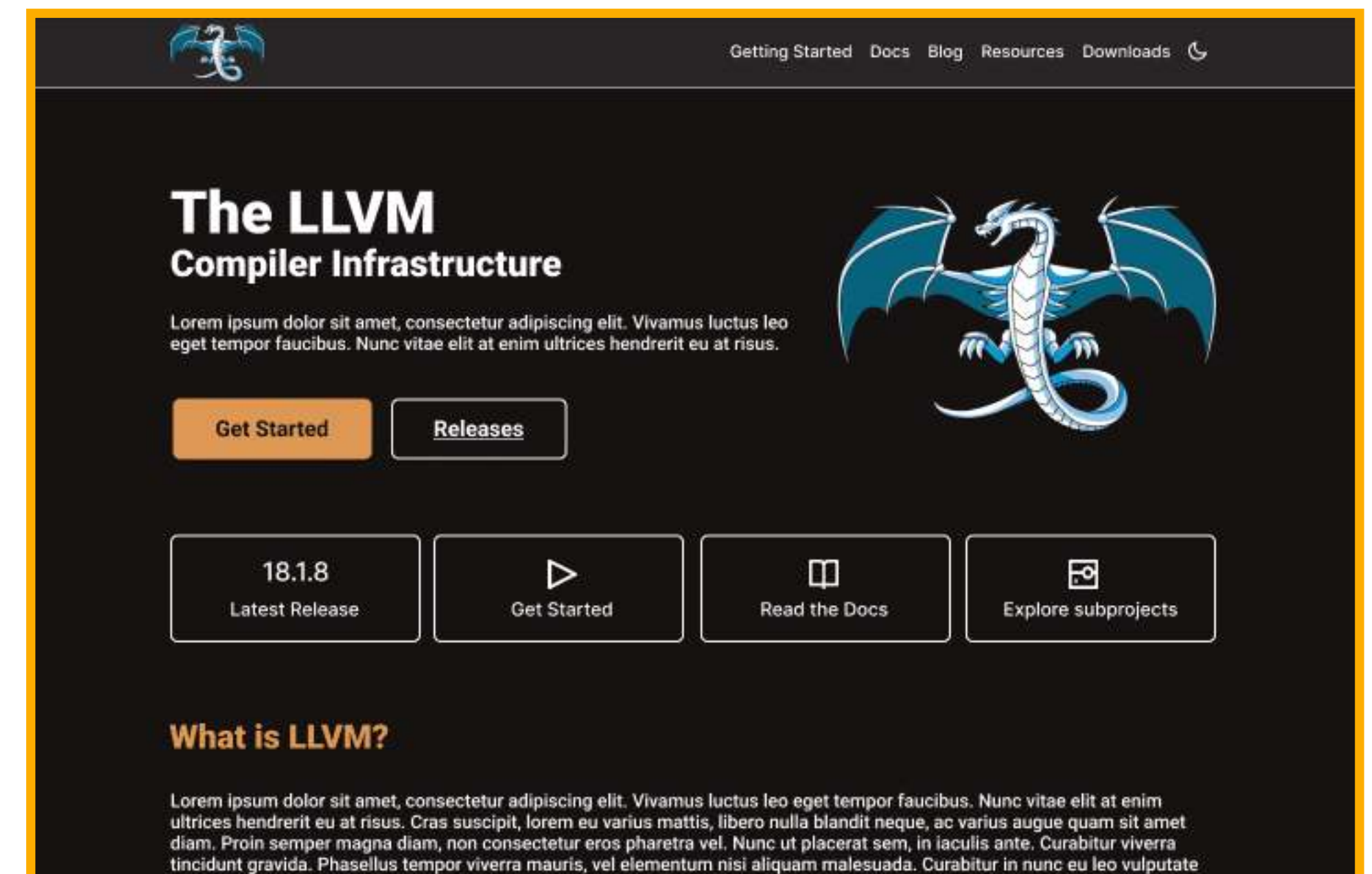


Achievements & Progress

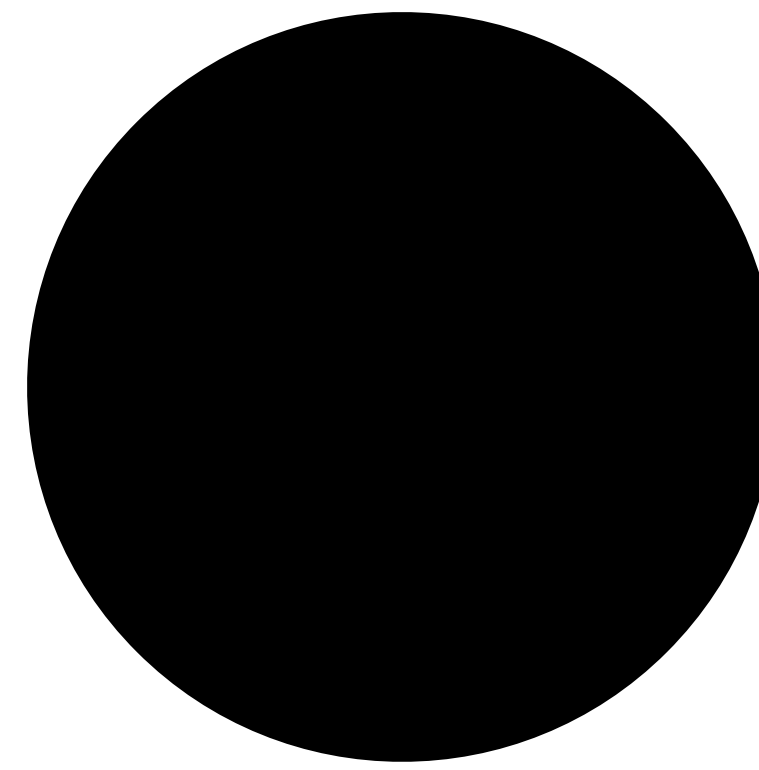


Achievements & Progress

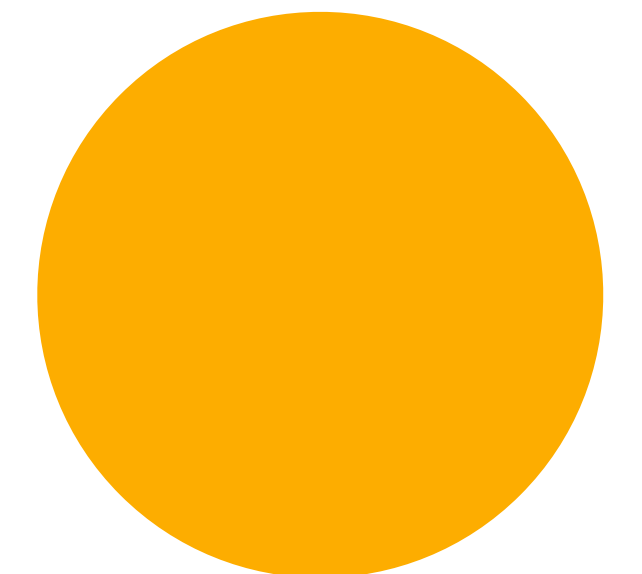
- Content Audit
 - Survey (Current Website)
 - RFC
- Create Design Mockups
- Survey for feedback on designs



Screenshots of Website Mockups

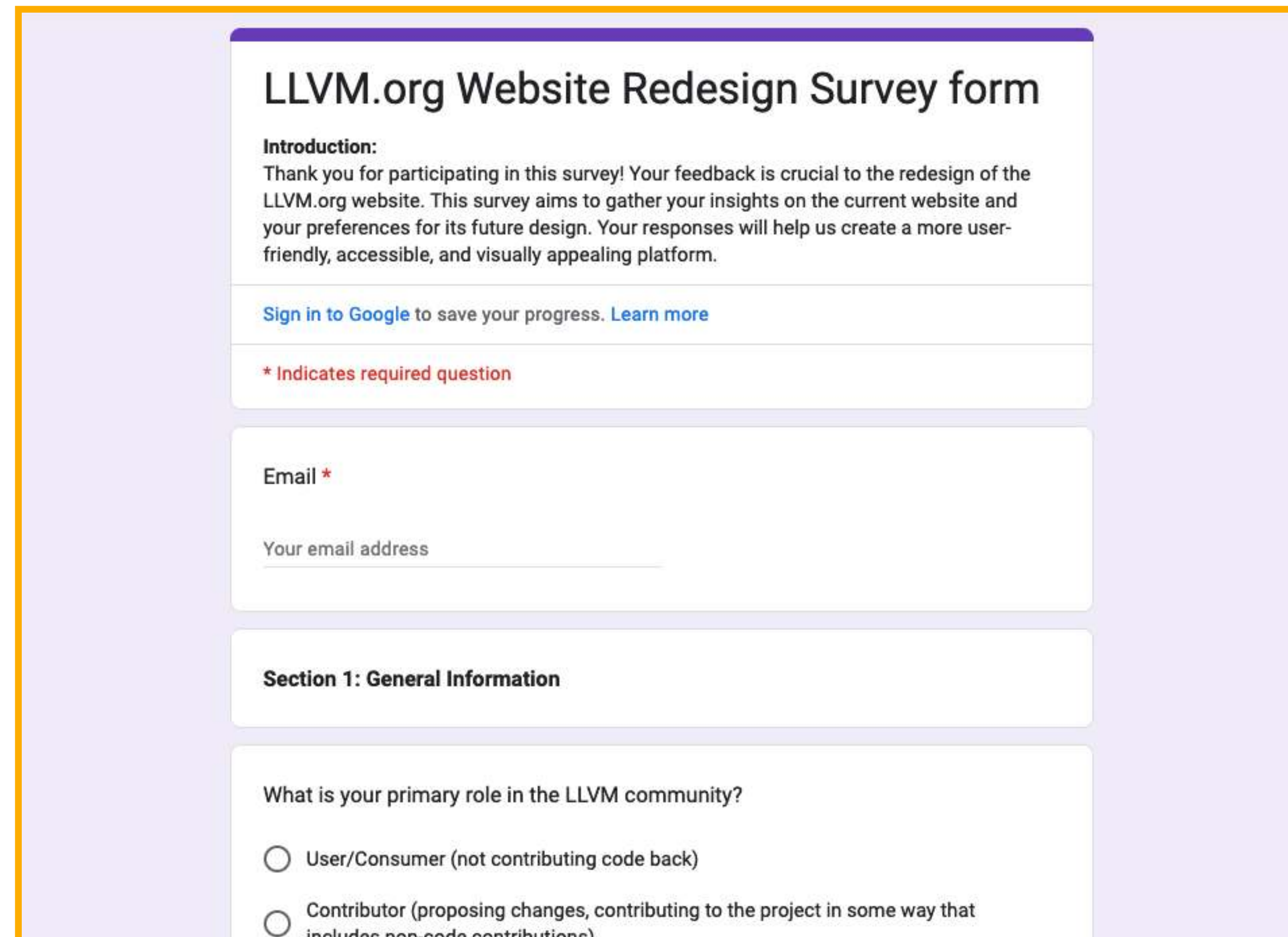


Survey on Current Website



Content Audit

Survey on Current Website



The screenshot shows a survey form titled "LLVM.org Website Redesign Survey form". It includes an introduction paragraph, a sign-in link, a required field for email, and a section for general information with radio button options for user roles.

LLVM.org Website Redesign Survey form

Introduction:
Thank you for participating in this survey! Your feedback is crucial to the redesign of the LLVM.org website. This survey aims to gather your insights on the current website and your preferences for its future design. Your responses will help us create a more user-friendly, accessible, and visually appealing platform.

[Sign in to Google](#) to save your progress. [Learn more](#)

* Indicates required question

Email *

Your email address

Section 1: General Information

What is your primary role in the LLVM community?

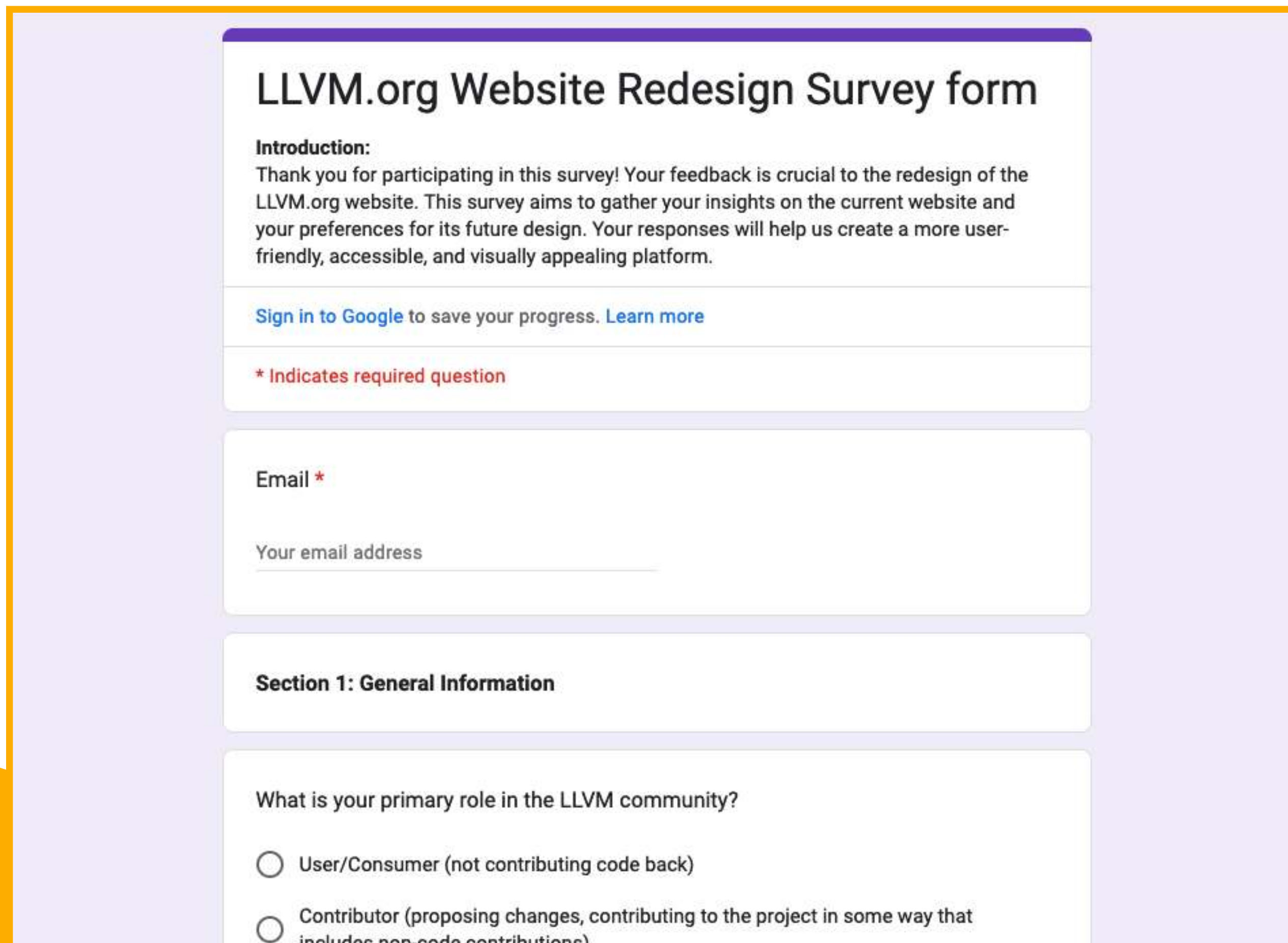
☐ User/Consumer (not contributing code back)

☐ Contributor (proposing changes, contributing to the project in some way that includes non-code contributions)

Screenshot of Survey form

Content Audit

Survey on Current Website



LLVM.org Website Redesign Survey form

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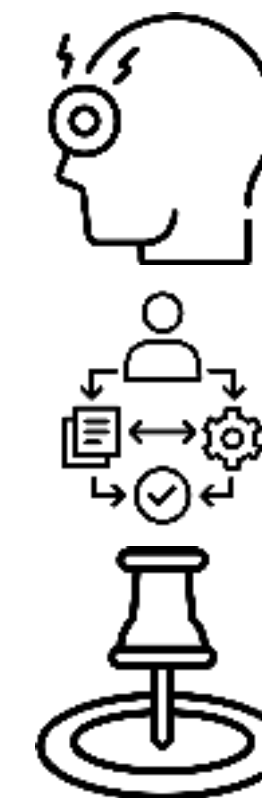
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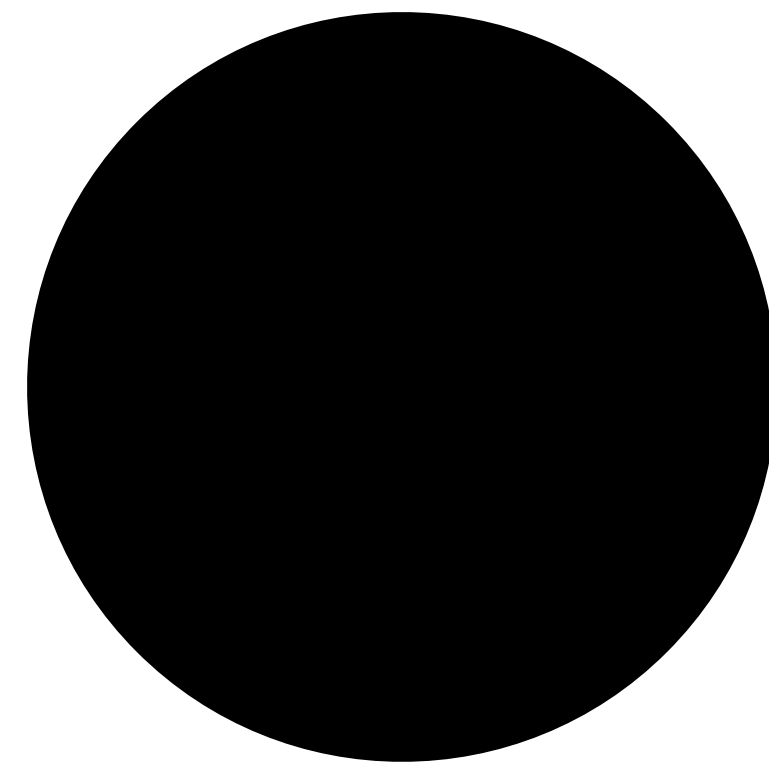
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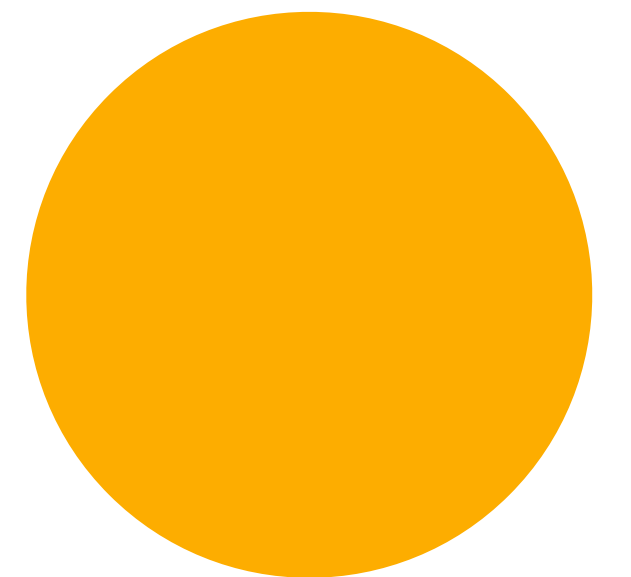
Screenshot of Survey form



- Key pain points
- Use case insights
- Starting point

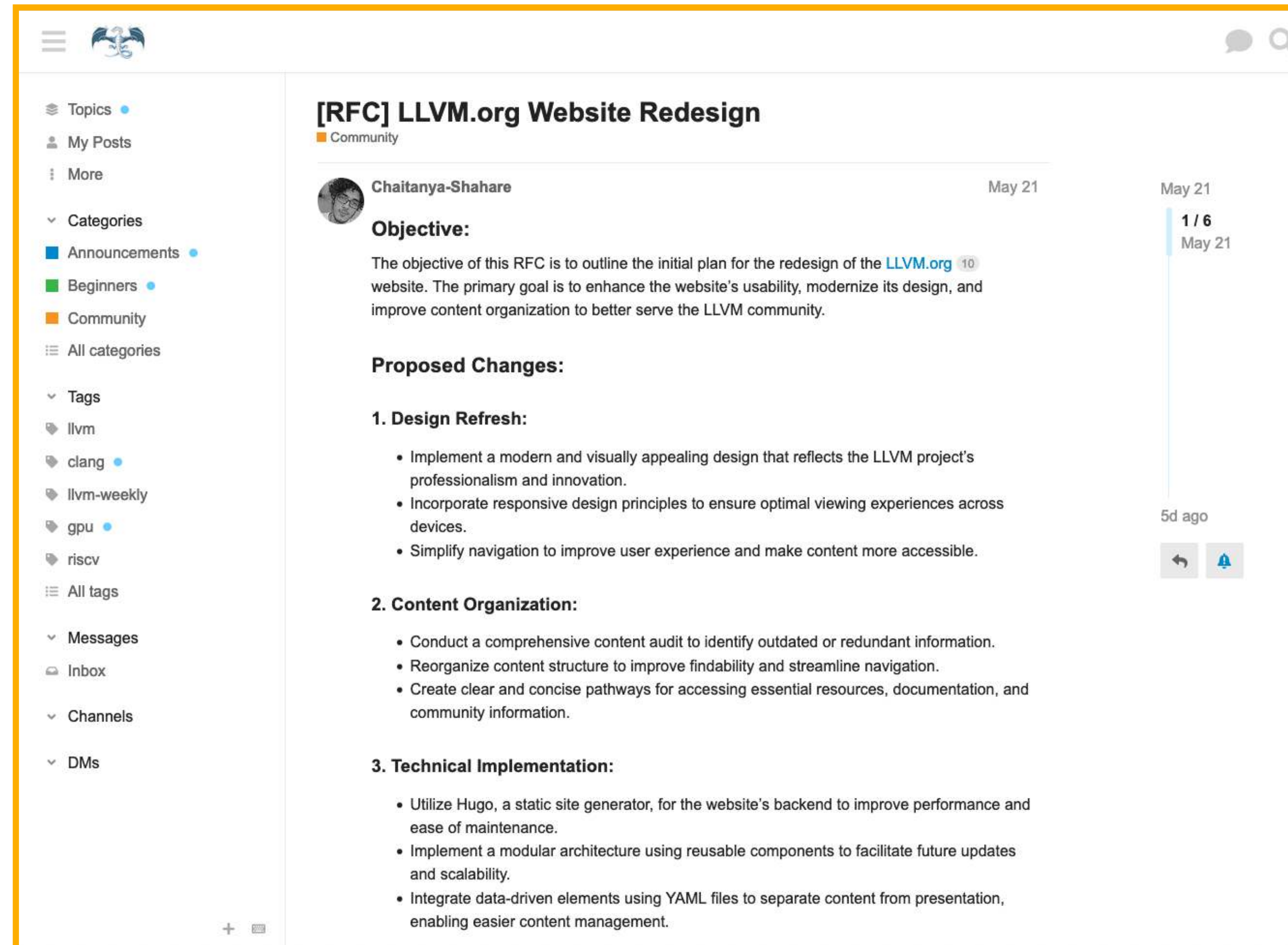


RFC for Community



Content Audit

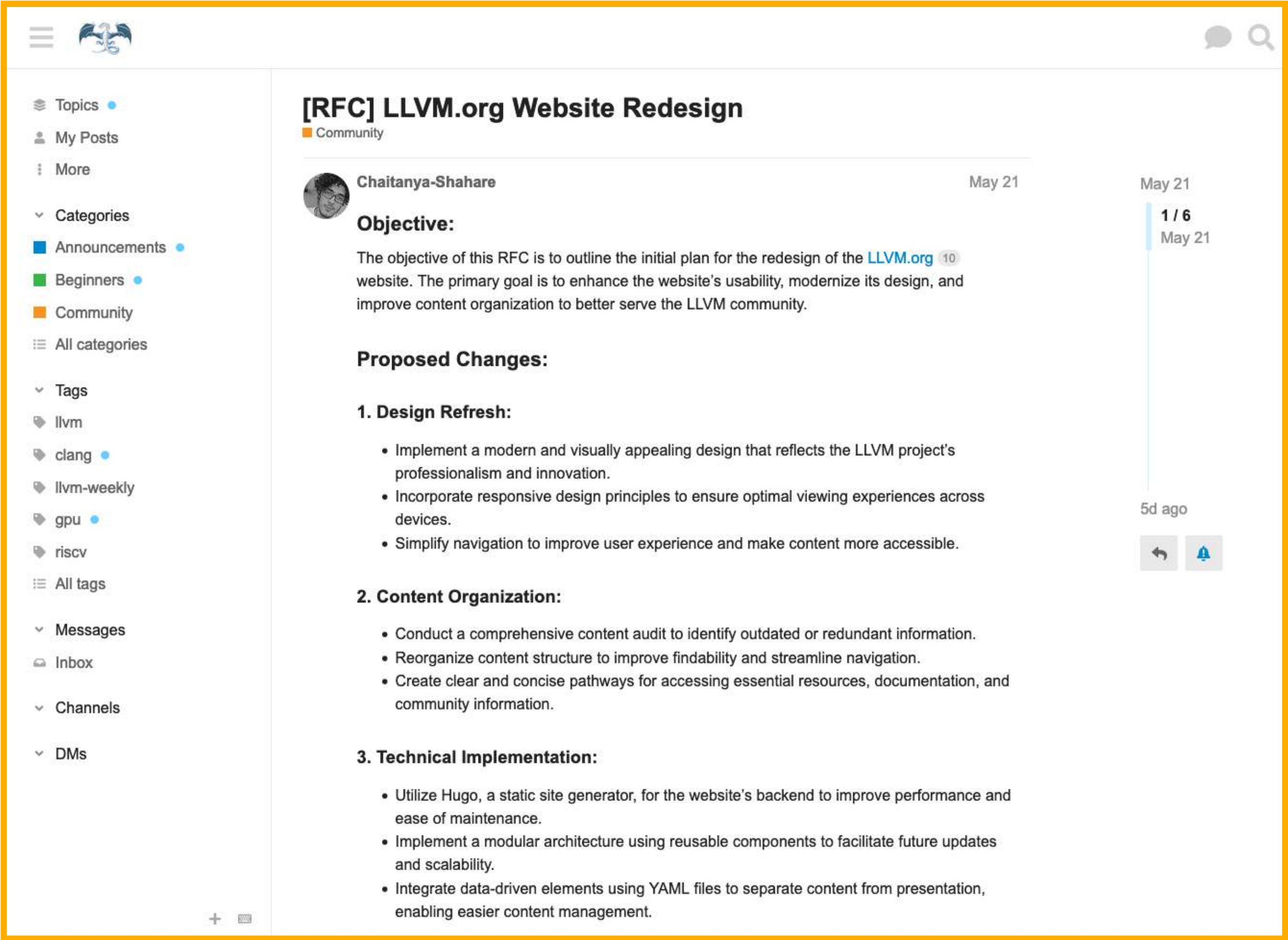
RFC For Community



Screenshot of RFC

Content Audit

RFC For Community



Screenshot of RFC



Community Feedback



Increased Engagement



Identified Key Priorities



Designing Mockups



Designing Mockups



- Visualizing Ideas



- Identifying Improvements



- Facilitating Feedback



The LLVM Compiler Infrastructure

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What is LLVM?

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The LLVM Compiler Infrastructure

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Sub Projects

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[Read more](#)

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Discourse Forum



Discord



Developer Meetings



IRC Channel



The LLVM
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LLVM
Features

Dev. Resources
Doxygen

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LLVM Foundation



The LLVM

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[Get Started](#)[Releases](#)**18.1.8**

Latest Release

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What is LLVM?

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Resources

- Doxygen
- Sources (GitHub)
- Code Review
- Bug Tracker
- Buildbot
- Green Dragon
- LNT
- Scan Build
- llvm-cov
- Compile time tracker

Upcoming Events

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The LLVM Compiler Infrastructure

LLVM

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18.1.8

Latest Release



Get Started



Read the Docs



Explore subprojects

What is LLVM?

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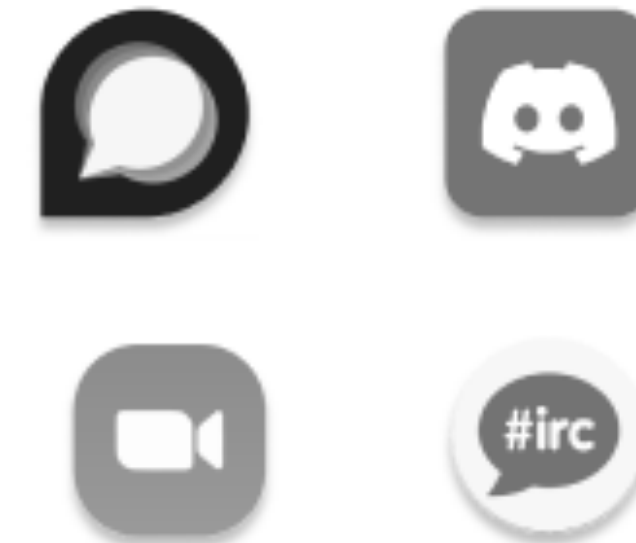
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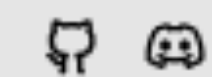
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Feedback on the Designs





Feedback on Designs

Design Feedback for LLVM.org Website Redesign

Welcome to the llvm.org Design Feedback Form! As part of our website redesign process, we are excited to gather your valuable input on the proposed design mockups.


[Sign in to Google](#) to save your progress. [Learn more](#)

* Indicates required question


Email *

Your email address

What hero section design do you prefer?



Without Logo (<https://>



With Logo (<https://www.figma.com/>



○ Gathering User Insights



○ Informed Iteration



○ Consensus Building

Screenshot of feedback form

Next Steps

Next Steps



- Iterate on designs



- Implement using HUGO



- Deployment & Hosting

Conclusion

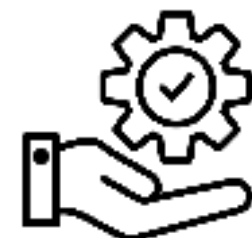
Conclusion



- Enhance User Experience



- Increase Engagement



- Simplified Content Management



Thank You!

