

GSoC PROPOSAL 2024

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COURSE- B.Tech (CSE)

GRADUATION YEAR- 2026

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What I expect to complete in this project including a detailed description of the project and a project plan :

PROJECT- Refactor Android Client & Rewrite using Android SDK

Week 1-2: Familiarization Phase

Tasks:

- Understanding the Mifos Codebase
- Android SDK Exploration
- GSoC Coding Standards

Deliverables:

- A strong working knowledge of the existing Mifos Android client's structure and logic.
- A development environment configured with the latest Android SDK and necessary tools.
- Internalized understanding of the Mifos project's coding standards and version control workflows.

Week 3: Design and Planning Phase**Tasks:**

- Refactoring Approach Design: Analyze the Android client, prioritizing core components for refactoring based on complexity, maintainability, and the potential benefits of using newer SDK features.
- Migration Strategy: Outline a high-level migration plan for the selected components, focusing on key libraries and tools from the Android SDK that will replace outdated functionalities. Consider dependencies and inter-component integration points.

Deliverables:

- A list of prioritized components for refactoring.
- A basic migration strategy for the selected components, outlining key SDK replacements and a general approach.

Week 4-7: Implementation Phase**Tasks:**

- Refactoring Core Components: Begin refactoring the identified components according to the plan. Implement the migration strategy, leveraging the latest Android SDK features, libraries, and best practices. Maintain clean, well-commented code.
- Unit Testing: Write comprehensive unit tests for each refactored component, using testing frameworks like JUnit or Mockito.

Deliverables:

- Refactored code for the targeted components, demonstrably utilizing the latest Android SDK functionalities for improved performance and maintainability.

- Thorough unit tests for the refactored components.

Week 8-9: Testing and Refinement

Tasks:

- Integration Testing: Integrate the refactored components into the complete Mifos Android client, conducting integration tests to verify seamless operation.
- Performance Evaluation: Measure and compare the performance of refactored components against the originals, using profiling tools to identify areas for optimization.

Deliverables:

- Verification that the refactored components integrate successfully with the broader Android client and function as expected.
- Performance benchmarks of refactored components, highlighting improvements or areas for further optimization.

Week 10-11: Documentation and Communication

Tasks:

- Refactoring Process Documentation: Create clear documentation explaining the refactoring decisions, specific code changes and rationale.
- Communication with Mentors: Maintain regular communication with mentors, providing progress updates, discussing challenges, and receiving feedback.

Deliverables:

- Documentation explaining the refactoring process for future developers.
- Logs/reports of progress, challenges, and feedback from mentors.

Week 12-13: Finalization and Code Review

Tasks:

- Code Review and Refinement: Submit refactored code for review by mentors. Incorporate feedback, address bugs, and ensure code adheres to standards.

- Final Testing and Bug Fixing: Conduct final testing on the complete Mifos Android client with integrated refactored components. Fix any critical bugs that arise.

Deliverables:

- Mentor-approved code that meets project quality standards.
- A stable and functional Mifos Android client with refactored components fully integrated.

Why am I the right person for this project?

I've been trying to get familiar with the Mifos Organisation codebase for a long time. Raised a few PR's and even got them merged. I've started Android from Jetpack Compose and Mifos is also shifting to Jetpack Compose completely. Few other reasons include my dedication to this community as I will be only applying to this organization only. I will be able to work full time throughout the summer this year on this project. I'll complete my tasks within deadlines properly and the quality of the code will match the standards that future developers will enjoy working on my code. And I personally believe that I'll fit in this community. I want to go with Android Development in future and thus, I found this as my best choice to go with.

If in college, current area of study:

Yes, I am a second year Engineering student currently studying in BIT Mesra. I'm pursuing B.Tech in Computer Science.

Contact information and preferred method of contact:

Email: vikashgathala@gmail.com

Github: [Vikashgathala](#)

LinkedIn: <https://www.linkedin.com/in/vikash-ghatala-0305b3184/>

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Career goals:

Currently, I'm focusing on DSA using C++ and learning Android development. I am aiming my career in Android and iOS development. I've also got interest in AIML after a few tools that came into the market like ChatGPT, Gemini and Devin. I would definitely build my skills into this too to make something amazing in my career.

This year I'm focusing on GSoC in Mifos and will continue to contribute to this in future too.

Links to source code I have written or websites I have built:

Website (Portfolio): vikashgathala.tech

Simple portfolio website completely made by me focusing on animations, smoothness and beautifully placing the elements.

Currency Converter (Quick Android Project): Open sourced on [GitHub](https://github.com).

A small Android app project, built with Jetpack Compose, showing live currency conversion rate across 33 different currencies. Fetches data from freecurrencyapi using retrofit 2 and perfectly integrates the MVVM, API and States.

If I have visited your Gitter channel:

No, I never visited Mifos's Gitter channel but I've been a part of your Slack community from a while with display name **@Vikash Ghatala** and my member ID is **U06CP1QQ3C0**.

Have I contributed to other open source projects?

No, I haven't contributed to any other projects yet and only targeted Mifos as I started my open source journey not much long ago.

Have you any previous experience with Angular/Java/Spring/Hibernate/MySQL/Android?

I've built a few small projects in Android using Jetpack Compose. I started Android development half a year ago so I have decent experience in this.

I've also completed a Java course in my University so I've got a decent grasp over Java.

What other commitments do you have this summer?

I don't have any other commitments this summer. I'm only targeting GSoC this summer. Other than that, I have planned to enhance my skills in Jetpack Compose which will be done in parallel while contributing to Mifos.

Have I deployed and run the Apache Fineract platform?

No, I am aiming to contribute to Android Development in Mifos so I didn't deploy the Fineract or Community app.

Have I submitted any patches or source code to Mifos or Apache Fineract yet?

Yes, I have contributed to Mifos. Here are the links to those PR's.

[docs #2520 : Updated README.md screenshots](#)

[fix #2474 - improves text visibility in about us section](#)

[Fixes #2463 - Fixed the startup logo to look in 1:1 aspect ratio](#)

What motivates me the most about working with the Mifos Initiative for Google Summer of Code?

GSoC has been my dream since the day one I came to know about this. I find this a lot more interesting than a classic kind of intern. Working with a team which has the best people around the world is really a great thing. Summer full of coding with a great community is the best way to grow, I think.

Mifos has been my top and only priority for a few months. I found its codebase more proper and its community is really helpful. I met with a few fellow contributors and collaborators who were ready to help me in every issue politely, which I've been searching for a while.

Have I previously participated in the Google Summer of Code?

No, this will be the first time I'll be participating in GSoC.

Am I applying to multiple organizations this year?

No, I'll be only applying to Mifos this year.