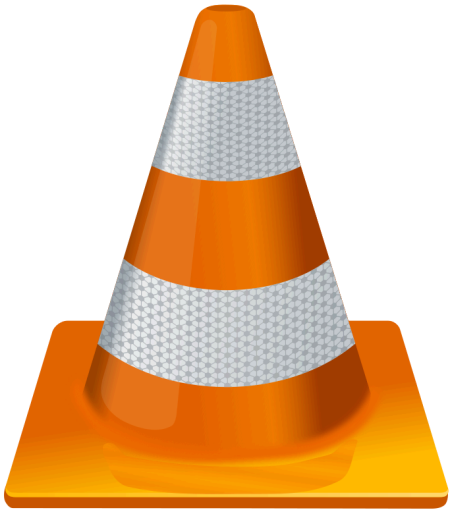

VLC Qt Interface Redesign

Proposal for Google Summer of Code 2024 Contribution

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Introduction

VideoLAN's VLC is a free and open-source cross-platform multimedia player and framework that plays most multimedia files, including DVDs, audio CDs, VCDs, and various streaming protocols.

The VLC media player desktop application is undergoing a redesign of its Qt interface. This redesign endeavor can be broadly distinguished into two segments — the user interface development, and the application logic development.

1. The user interface code is being implemented with QML and JavaScript. The user interface of VLC, in terms of its visual components and descriptions of how they interact and relate with one another, is concerned here. The QML components are interconnected in a dynamic manner and these components can be easily reused and customized.

2. The application logic code is being implemented with Qt/C++. The data models and various other application logic functionalities of VLC, which can be used/invoked from QML, are concerned here. The Qt/C++ types are registered with the QML type system to enable these types to be used within the QML code.

This Google Summer of Code 2024 project aspires to contribute to the VLC Qt interface redesign towards innovating the new VLC 4.0 in a mixture of QML, JavaScript, and Qt/C++, unlike 3.0.x versions of the media player written in Qt Widgets. It involves working on both the user interface plus the application logic part. The objectives broadly comprise refining the existing functionalities, coupled with building new features to develop a more aesthetic, accessible, usable, and overall more performance-efficient Qt interface for VLC.

The modern interface will eventually offer simplicity and enhanced user-friendliness, along with encompassing a better “media center” ambiance.

- **Proposed Mentor:**

  Pierre Lamot
- **Project Duration:**

  350 hours
- **Project Requirements:**

  Qt/C++, QML

About Me

Hey there! I am Ashutosh Verma, alias Ash V. I am a B.Tech. pre-final year student at the Indian Institute of Technology (BHU) Varanasi, one of the renowned IITs in India.

I have experience working with several programming languages, including C, C++, HTML, CSS, JavaScript, Bootstrap, React, React Bootstrap, Node.js, Express, Mongoose, MongoDB, and SQL. I have explored competitive programming (CP), data structures and algorithms (DSA), and full-stack web development. And am currently working actively with Qt-QML, which is the sole requirement of this project.

I initiated programming in my first year of college with the C language, later switching to C++ and delving into more development technologies. It has evolved into a passionate interest in coding for software development, alongside problem-solving in data structures and algorithms.

Learning about open-source has motivated me to explore it, and I find myself incredibly interested in it. Working as an open-source contributor gives me the experience to navigate large codebases, collaborate with other developers, and have an excellent opportunity to learn novel technologies and concepts that help me grow as a developer.

The first open-source event I participated in was with my friends as part of a team in HackSquad, which took place throughout October ’23. Encouraged by the spirit of open-source, I have become eager to contribute to significant real-world projects. After analyzing several projects, I eventually landed on VLC and have decided to become involved.

My Contributions to Open-Source

- **In VLC**
  - **Created Issues:**

    https://code.videolan.org/videolan/vlc/-/issues/?sort=created_date&state=all&author_username=tvermaashutosh

  - **Created Merge Requests:**

    https://code.videolan.org/videolan/vlc/-/merge_requests?scope=all&state=all&author_username=tvermaashutosh

- **In HackSquad**
  - **Registered as the team member Ash Verma:**

    https://www.hacksquad.dev/team/exodus-nEplK

Why VLC?

For several solid reasons, I am keen to contribute to the VLC media player project in this year's Google Summer of Code.

To begin with, it's no exaggeration that the VLC media player is among the most versatile and widely used media players globally. Its robustness, compatibility with various media formats, ability to play most codecs without requiring additional codec packs, and the set of features it provides have earned it the trust of users across diverse platforms and devices, myself included.

VLC's status as an open-source project highlights its commitment to continuous improvement and evolution. VideoLAN's team of volunteers who believe in *"the power of open-source to rock the multimedia world"* are the people who compose and lead this project.

Participating in the VLC project would allow me to work with potent and experienced developers and gain valuable insights into software development best practices, codebase management, and project coordination. This experience would be invaluable for my growth, contributing to my personal plus professional development.

Contributing to such a well-known and influential project will not only be personally fulfilling but would also present me with a valuable opportunity to make a meaningful impact within its large user community.

I thus will be extremely pleased to contribute to this fantastic project due to its widespread use, strong open-source community, and possibility for impactful contributions.

Deliverables

The concrete outcomes that I strive to deliver through this Google Summer of Code ’24 project would be as follows:

1. Working the UI:

Work on the user interface of the VLC media player desktop application using QML (Qt Modelling Language). The new and fresh user interface of version 4.0 employs new designs and properly exposes each feature from the plethora of features contained in VLC.

2. Working the Logic:

Work on the logic part of the VLC media player desktop application using Qt-extended C++. The logic part of version 4.0 concerns data processing, business logic functionalities accessible from QML, and QML types defined in Qt/C++, for instance, the data models.

3. Integrations:

Integrate the new VLC desktop interface with VideoLAN’s cross-platform media library. As well as, integrate the QML part and the Qt/C++ part with each other.

4. Testing and Debugging:

Diligently test the new interface and fix bugs if any arise during the same. And, provide patches to several of the numerous FIXMEs and TODOs currently scattered in the codebase.

5. Report and Documentation:

Create and submit the GSoC final report on all the contributions made, the technical challenges faced, and the solutions implemented.

Some issues that correlate with my deliverables, which I aim to address in my contributions are:

- (#27275) Qt: Quick Layout: recursive rearrange warning when spamming fullscreen
- (#28497) VLC 4: QAbstractItemModel warning in the Browse section
- (#28423) Qt: Changing the limit or offset on a model resets the models
- (#28309) Qt: Show only playable items in the Media Library
- (#28556) Incorrect artist view being loaded
- (#28491) Adding a new cover to the file does not enable the "Save Metadata" button

Action Plan

My action plan/timeline for contributing to VLC during GSoC ’24 is outlined as follows:

Time Frame	Phase	Tasks
Upto May 1	Accepted GSoC contributor projects announced	• Continue to understand and get familiar with the VLC codebase. • Work on my open merge requests. • Continue to solve some smaller issues alongside. *(Just a mild note, I will be having my college end-semester exams from April 25 to May 10.)*
May 1 - 26	Community Bonding period	• Interact frequently with my mentor, Pierre, about this project's details and deadlines. • Communicate with my mentor about incorporating any changes to my deliverables. • Learn more about Qt/C++ and QML.
May 27 - July 7	First phase	• Continue to communicate with my mentor to discuss new ideas and features.

		• Start to work on (#27275) Qt: Quick Layout: recursive rearrange warning when spamming fullscreen and discuss its possible solutions with my mentor. • Address (#28497) VLC 4: QAbstractItemModel warning in the Browse section. • Communicate with my mentor and seek some help for (#28423) Qt: Changing the limit or offset on a model resets the models, as according to my mentor, this would require a bit more experience with the codebase. • Continue to solve other smaller issues alongside. • Document all my accomplished tasks simultaneously to have a reference while creating my final GSoC report.	
July 8 - 12	Midterm evaluation period		
July 12 - August 19	Second Phase	• Continue to provide updates to my mentor via consistent communication. • Begin exploring the approach to work on (#28309) Qt: Show only playable items in the Media Library.	

		• Communicate with my mentor and get some initial guidance for addressing (#28556) Incorrect artist view being loaded. • Solve the issue (#28491) Adding a new cover to the file does not enable the "Save Metadata" button. • Continue to solve other smaller issues alongside. • Thorough testing and debugging of my contributions.	
August 19 - 26	Final week	• Submit my final report on all the work I did during the GSoC period.	

Legend:  *(In terms of significance of tasks + amount of tasks completed)*

My Availability

My college summer vacations begin on **May 11** and conclude on **July 17, 2024**. Given the noteworthiness of being accepted to contribute to this project, I am seriously committed and dedicated to it during this period.

After the summer break ends, I intend to continue allocating around **30 hours** of work per week to this until its completion.

“ If accepted to contribute to VLC as a GSoC student this year, I decide to put in my best efforts to submit quality work (code) and have regular communication with my mentor and the broader community during these 12 weeks. I also plan to sustain my involvement in this project even after GSoC ends. Should it be that I can't make it this time, I will continue to contribute to the VLC media player project to the best of my ability and will reapply for GSoC at it, next year. ”

Excitedly looking forward to joining the VLC developers' team this GSoC!

Thanks and Regards,
Ashutosh Verma (Ash V)

Signing off with a cool VLC cone!