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X Pro Editor (Video Editor Application using Flutter)

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ABSTRACT: Video editing users face a significant challenge in switching between devices while editing their videos. Advanced video editing applications, which allow for this kind of mobility, are often prohibitively expensive, making them inaccessible for many users who simply cannot afford them.

As a result, we have taken it upon ourselves to create a more user-friendly application that is accessible and efficient in allowing users to switch between devices seamlessly. We recognize the importance of providing a tool that allows users to move between devices with ease, so that they can edit their videos on the go, without being restricted to a single device or location.

Our application has been designed to address these challenges by providing a cost-effective, yet powerful, solution that makes it easy for users to switch between devices while editing their videos. With our tool, users can enjoy the flexibility of editing their videos on the go, no matter where they are or what device they have available.

We have developed a web application and a mobile application that are interconnected with user accounts. This system enables users to access their data and continue their video editing or creation seamlessly, regardless of whether they are using the website or the mobile application.

With this integrated system, users have the flexibility to switch between the web and mobile platforms based on their preferences or convenience. They can start a video editing project on their computer, then continue working on it from their mobile device while they are on the go. Alternatively, they can begin editing on their mobile device and continue on their computer later on.

This web and mobile application system is designed to ensure that users' work is always up-to-date and accessible, no matter what device they use. Furthermore, users can store their data securely in their accounts, allowing them to access their work from any device, without the need for external storage devices.

KEYWORDS: IDE, Android studio, Fuchsia, NDK, LLVM, DART, FIGMA, Video Editing Software

I. INTRODUCTION

The advancement of technology has had a significant impact on our daily lives, allowing us to accomplish tasks with the touch of a button. Software applications have played a crucial role in simplifying people's lives in unexpected but revolutionary ways, utilizing advanced technologies such as AI to fulfil tasks easily and instantly.

Among the software applications that have become a necessity for many career opportunities is video editing software. Video editing software is a computer program that enables users to manipulate and modify video footage, audio, and other multimedia elements to create a cohesive, polished video project. These programs provide a range of tools and features to facilitate the editing process, such as trimming, cutting, and splicing clips, adding transitions, special effects, text overlays, and audio tracks, color grading, and more. Video editing software can be used for various purposes, including professional film and TV production, advertising, social media content creation, education, and personal video projects. Some popular examples of video editing software include Adobe Premiere Pro, Final Cut Pro, and iMovie.

To develop such applications, various open-source IDEs are available in the market, including Android Studio, Flutter, etc. We have utilized Flutter to create a video editing software application that is web-based and android-based, providing users with the ability to continue editing their videos on either device without interruption.

To access their data, users can log in to their accounts, ensuring that their work is always up-to-date and secure. The web-based and android-based software we have created provides a convenient and user-friendly solution for video editing enthusiasts, empowering them to create professional-quality videos with ease. The integration of both platforms provides users with flexibility and accessibility, allowing them to complete their video editing projects wherever they are and on any device they prefer.

II. FLUTTER

With the increasing demand for mobile applications on multiple operating systems, developers have been faced with the challenge of creating different applications for different OS such as Android and iOS, which can be overwhelming. To overcome this challenge, Flutter was created, a framework that allows developers to create applications that can run smoothly on both Android and iOS, as well as on the upcoming operating system, Fuchsia. Fuchsia is an ongoing project by Google, which is set to revolutionize the IoT and mobile phone industry with its innovative features. Flutter, released in May 2017, is a free and open-source mobile UI framework created by Google. What makes Flutter exceptional is that it depends on the device's OEM widgets instead of consuming web views. Flutter uses a high-performance rendering engine to render each view component using its own, which allows developers to build high-performance applications that are as efficient as native applications can be. Flutter's architecture is based on a compilation process, where the engine's C or C++ code is compiled with Android's NDK and LLVM for iOS, respectively, while the Dart code is compiled into native code. One of the major advantages of Flutter is its Stateful hot reload feature, which is a significant factor in boosting the development cycle. Stateful hot reload allows developers to make changes to the source code and see the changes reflected in the running application instantly without changing the inner structure of the application, thereby preserving the transitions and actions of the application. In conclusion, Flutter is an exceptional framework that allows developers to create high-performance mobile applications for Android, iOS, and the upcoming Fuchsia operating system. With its reliance on OEM widgets and its high-performance rendering engine, Flutter provides a user-friendly and efficient platform for building applications that can run smoothly on any device. Its Stateful hot reload feature further enhances the development process, making it easier for developers to create and test their applications quickly and efficiently.

III. DART

Flutter employs the Dart programming language to develop applications. Dart is a language that is created and maintained by Google and is widely used within the company. Dart has been designed to build large-scale web applications, such as AdWords, and it was originally developed to replace and succeed JavaScript. Dart has most of the essential features of JavaScript's next standard (ES7), like "async" and "await" keywords.

However, to make it easier for developers who are not familiar with JavaScript, Dart has a Java-like syntax. The language is modern and optimized for performance, allowing Flutter applications to renew the view tree on every new frame, unlike other systems that use reactive views.

Although this behavior can lead to a drawback of creating numerous objects, which may only survive for a single frame, Dart is equipped with a "Generational Garbage Collection" mechanism, which handles such scenarios at the memory level, freeing up the memory occupied by such short-lived objects.

The use of Dart in Flutter provides developers with a robust language that can handle large-scale applications while offering modern features and syntax, making it easier to develop applications that run smoothly and efficiently.

IV. FIGMA

Figma is a comprehensive web-based interface design tool that offers a range of collaborative and offline features. It enables designers to work together seamlessly in real-time, with desktop applications available for macOS and Windows that provide additional functionality even when offline.

The main objective of Figma is to support user interface and user experience design, and it comes equipped with a robust set of vector graphics editor and prototyping tools to help achieve that goal. Figma's real-time collaboration capabilities enable multiple designers to work on the same design project concurrently, making it an ideal tool for remote teams.

The availability of Figma's mobile application for Android and iOS allows convenient access and real-time interaction with Figma prototypes on mobile phones and tablets. This functionality is particularly helpful for designers and developers who need to test how their designs will look and feel on different devices.

Overall, Figma is a powerful and versatile tool that helps designers and developers create exceptional user experiences while streamlining the design process through real-time collaboration and robust features.

Some of the pictures of Figma:-

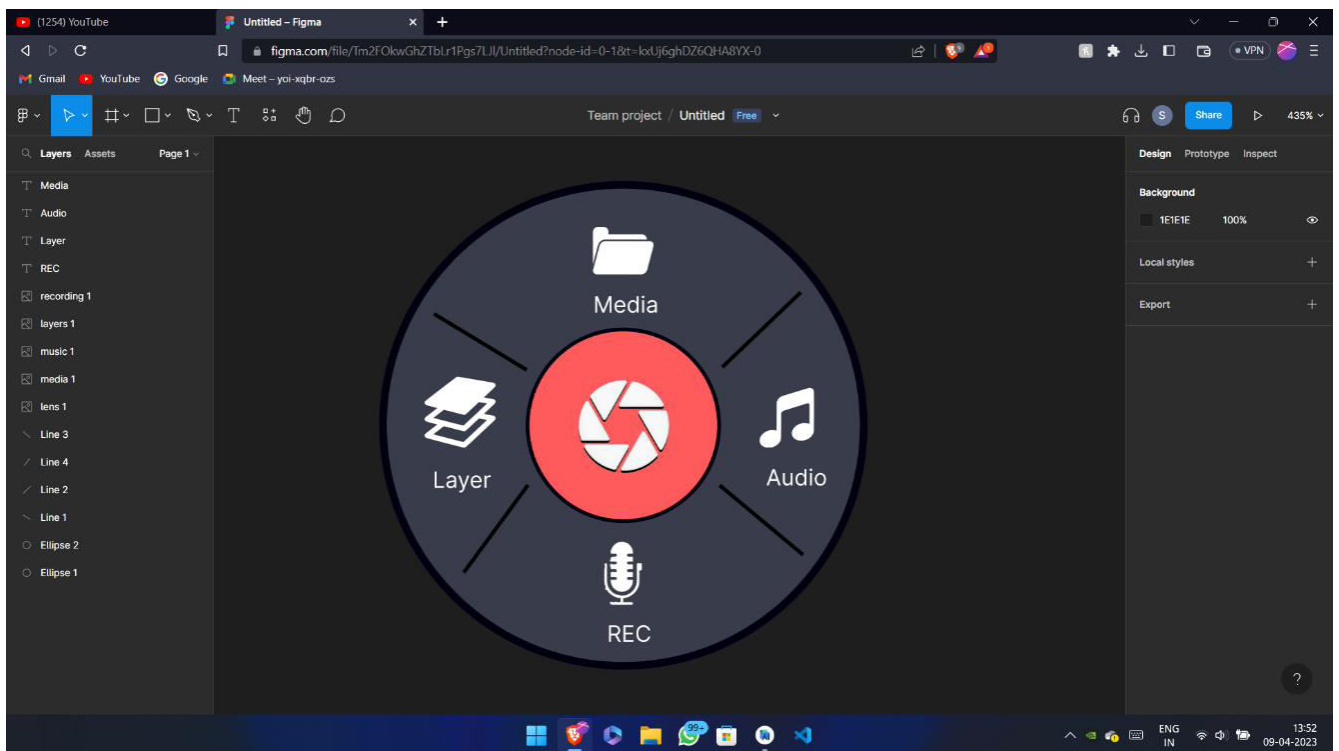


FIG 1:- DEMONSTRATION OF FIGMA

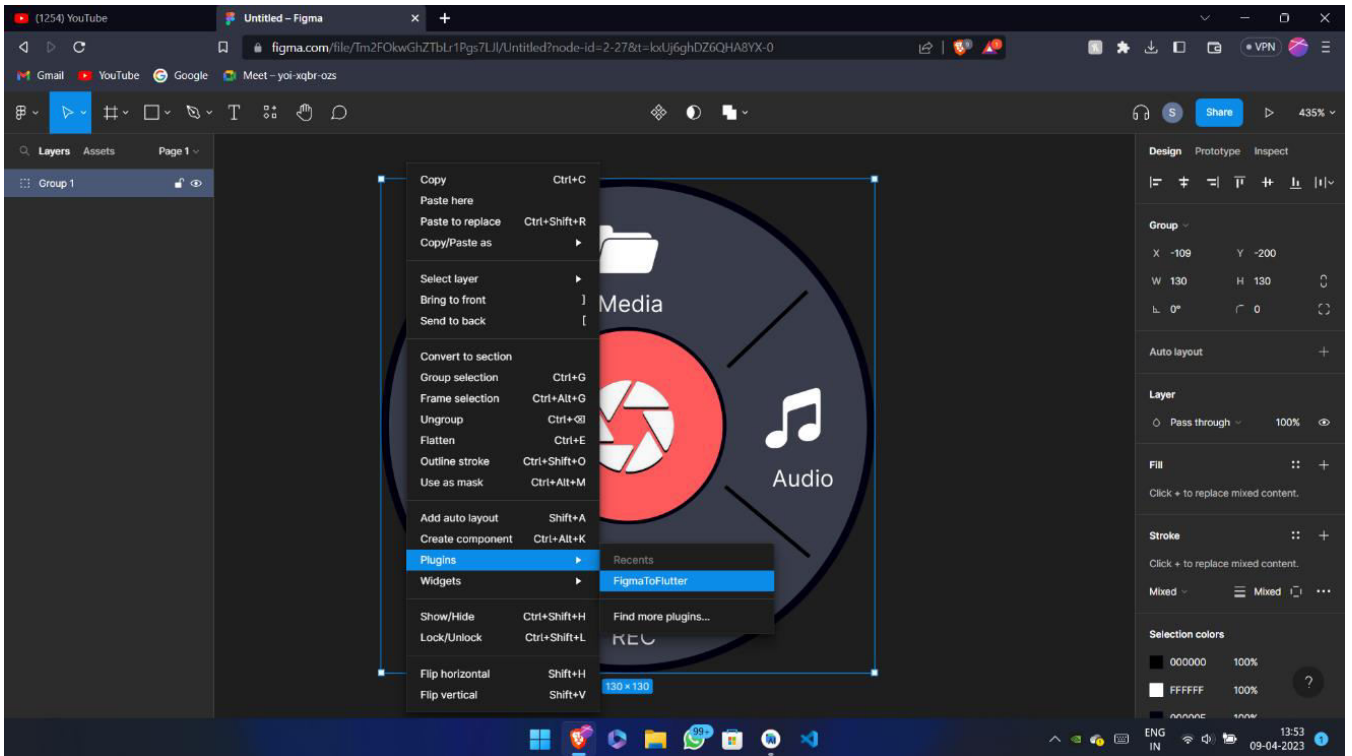


FIG 2:- PLUGIN FEATURE OF FIGMA

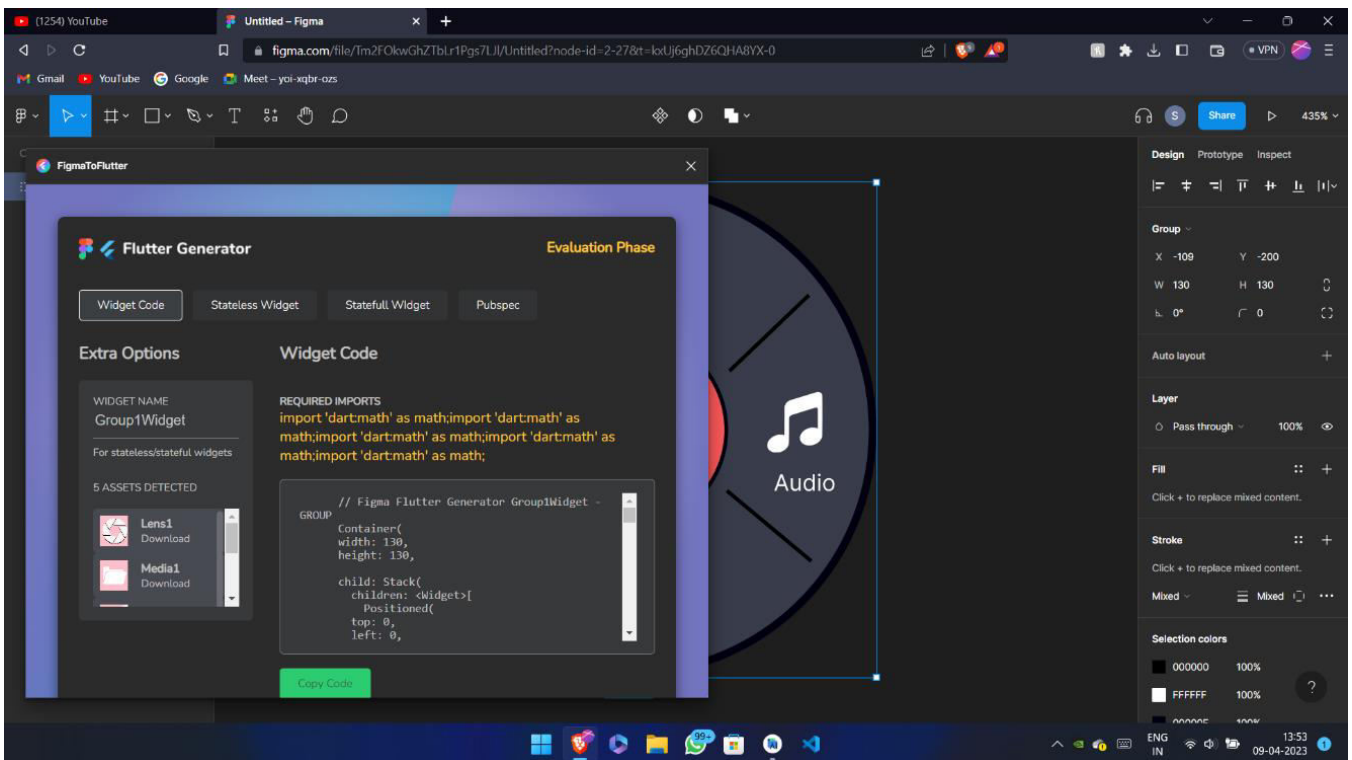


FIG 3:- FIGMATOFLUTTER

V. REQUIREMENTS FOR EDITING SOFTWARE:

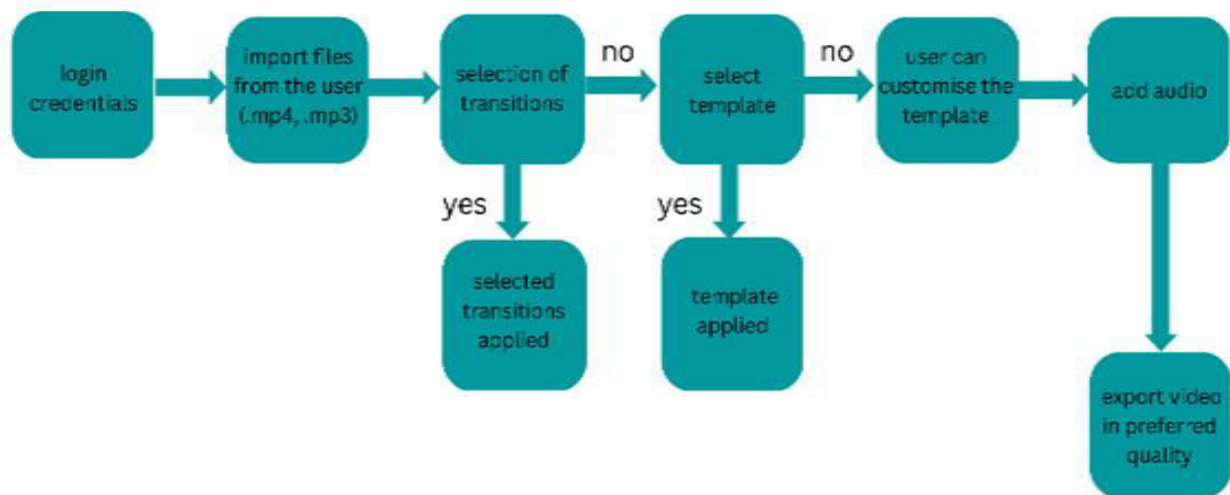
Efficient data processing is crucial for ensuring a seamless user experience while using video editing software. With the exponential growth of video content, the need for quick data processing has become even more important. In the past, video recording through handheld devices was limited to lower quality and required less storage. However, with the growing trend of using video editing for even the most basic commercials and everyday life, the amount of data generated and processed has increased significantly.

To ensure that the user's data is not lost, we need to implement a storage solution that is reliable and easily accessible. Storing data on the local machine's volatile memory can lead to data loss and inconvenience for users. Therefore, we propose the use of cloud computing, which replaces physical storage with virtual storage. This would allow users to easily store and retrieve their data, without worrying about data loss.

By leveraging the concept of cloud computing, we aim to develop a software application that makes storage and editing of media data easier for users. This will help to ensure that users can access their data at any time, from anywhere, and on any device. With cloud storage, users can save their data securely and efficiently, and the data can be easily retrieved whenever needed.

In summary, the proposed video editing software application will utilize cloud computing to efficiently process large amounts of data, and provide users with a reliable and easily accessible storage solution. This will enhance the overall user experience and ensure that users can edit their videos seamlessly without any inconvenience.

Block Diagram



VI. CONCLUSION

In conclusion, the software will be a cutting-edge solution for mobile application development that utilizes the latest and most advanced technology available in the market today - Flutter. The Flutter framework allows the creation of high-performance mobile applications that run seamlessly on both iOS and Android platforms, providing a unified experience for users across devices.

To harness the full potential of Flutter, the software will be built using Dart programming language, a modern language that has been optimized for the development of high-performance mobile applications. With Dart, developers can easily create complex and feature-rich applications that can process vast amounts of data in real-time.



One of the standout features of this software is its ability to work simultaneously on both web and mobile platforms. This means that users can access their projects on the web and mobile applications, making it a truly versatile and flexible solution.

Moreover, this software will incorporate the latest templates and design trends, ensuring that users can create visually appealing and modern-looking applications that stand out in the crowded app marketplace. With these advanced features and capabilities, this software will be a game-changer in the world of mobile application development.

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