VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI – 590018

PROJECT REPORT ON

"Notes Application"

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE & ENGINEERING

MOBILE APPLICATION DEVELOPMENT [18CSMP68]

Submitted by

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DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

A.J. INSTITUTE OF ENGINEERING & TECHNOLOGY

NH-66, KOTTARA CHOWKI, MANGALURU – 575006

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A. J. INSTITUTE OF ENGINNERING & TECHNOLOGY

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

AJIET

CERTIFICATE

This is to certify that the project entitled **"NOTES APPLICATION "** is carried out by Mr. **HRITHIK N R**, USN: **4JK20IS020**, and Mr. **KRITHIK KUMAR**, USN:**4JK20IS0025**, Students of sixth semester B.E. Information Science & Engineering, and submitted as a part of the course **MOBILE APPLICATION DEVELOPMENT [18CSMP68]** during the academic year 2022-2023.

It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The report has been approved as it satisfies the academic requirements in respect of Mobile Application Development Project prescribed for the said Degree.

Prof Navya S Rai	**Prof Rakesh M R**	**Dr Suresha D**
Project Guide	**Project Guide**	**Head of the Department**

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Examiners **Signature with Date**

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ABSTRACT

Note-taking is one of the more common and ever-present learning activities that form an important part of all daily lives. The potential of using technology to enhance note-taking activities has recently come under the spotlight. In a busy schedule, we tend to forget many important things easily, and to remember these things we need to note down things in a piece of paper. In such busy schedules people need some personal assistant or a reminder to remind them about the important work that needs to be done. This android application will help to remind, to do such important things. These notes android application can help us to note the daily task which needs to be done. Important meetings, events etc. can be recorded with great ease through the use of this application. This application will allow the users to organize the data in a simpler and easy way. In this application users can view all the Notes, likewise also can manage old and new notes.

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CHAPTER 1

INTRODUCTION

In today's busy life schedule, sometimes we forget to remember even the basic things. Many people carry a small notepad with them and write down in it whatever they want to remember. But it is not easy to manage the paper note. These days we can use the skill and technique of digital note-taking. This Notes app helps us to remember the personal work that we need to complete for the day. It also reminds us of the reminder that we had set for the particular day. The Notes Application provides a simple and intuitive interface for users to jot down their thoughts, ideas, reminders, and any other important information they want to keep handy. It serves as a digital notepad, eliminating the need for carrying around physical notebooks or scraps of paper. It provides a place to save all your creative ideas, thoughts, and critical project details, and access them quickly whenever needed.

1.1 About the project

- Many people have faced problems maintaining their notes in one place over the years.
- Managing their daily notes and referring to them faster in the future is one of the challenges they face every day.
- Mobile Application is one of the major developments in the field of technology, which plays a large role in everyday life activities.
- As they are widely used and are easy to access, mobile applications can be used effectively for this job.
- It helps to store and simply organize the notes. It provides a place to save all your creative ideas, thoughts, and critical project details, and access them quickly whenever needed.
- Allow users to share their notes through various methods, such as email, messaging apps, or social media platforms.
- Allow users to attach images, audio recordings, or other multimedia files to their notes, enhancing their functionality and visual appeal.
- This Notes app helps us to remember the personal work that we need to complete for the day.

1.2 Scope of project

- This project proposes a “Notes App” to keep track of the all the notes a person has made earlier.
- Notes app have the functionality to add new notes and delete the notes from the database and the time of creation of note is visible.
- Provide options for users to organize their notes. This can include categorizing notes into different folders or tags, adding labels or color codes, and using search functionality to find specific notes.
- Allow users to share their notes through various methods, such as email, messaging apps, or social media platforms.
- We have used Realm Database to store the notes and made simple notes application with recycler view to show the list of notes with beautiful design.
- Allow users to attach images, audio recordings, or other multimedia files to their notes, enhancing their functionality and visual appeal.

1.3 Purpose of project

- Users can create and edit notes using a text editor. They can enter and format text, add bullet points, create headings, and apply various formatting options.
- Notes applications provide the ability to attach multimedia elements to notes, such as photos, audio recordings, or sketches. This allows users to enhance their notes with visual or audio content.
- Notes applications allow users to share their notes with others or collaborate on them in real-time. This can be useful for group projects or when multiple individuals need access to the same information.
- With its user-friendly interface and convenient features, the Notes Application helps users stay organized, enhance productivity, and keep track of important information effectively.

CHAPTER 2

SOFTWARE REQUIREMENT SPECIFICATION

The purpose of this Software Requirement Specification (SRS) document is to outline the requirements for a note's application. The notes application aims to provide users with a convenient and efficient way to create, organize, and manage their personal notes. This document will cover the functional and non-functional requirements, as well as any constraints or assumptions associated with the development of the application.

2.1 Functional Requirements

Notes are a great way to keep track of information for yourself. Using Notes application, we can do the following tasks

- **Create notes:** Users should be able to create new notes with a title and body text.
- **Edit notes:** Users should be able to edit existing notes.
- **Delete notes:** Users should be able to delete existing notes.
- **Organize notes:** Users should be able to organize their notes into folders.
- **Search notes:** Users should be able to search for notes by title, body text, or folder.
- **Share notes:** Users should be able to share notes with other users.
- **Back up notes**: Users should be able to back up their notes to the cloud.
- **Sync notes:** Users should be able to sync their notes across multiple devices.
- **Performance:** The application should be responsive and should not lag or crash.

2.2 Non-Functional Requirements

Here are some of the non-functional requirements for an Android notes application. More complex applications may have additional non-functional requirements, such as the ability to work offline or the ability to be used in multiple languages.

- **Security:** The application should be secure and should protect user data from unauthorized access.
- **Usability:** The application should be easy to use and should have a user-friendly interface.
- **Accessibility:** The application should be accessible to users with disabilities.
- **Scalability:** The application should be able to handle a large number of users and notes.
- **Extensibility:** The application should be extensible and should allow users to add new features and functionality.

2.3 Mobile Requirements

To design a mobile notes application for the Android platform, you need to consider several requirements. Here are some essential mobile requirements for an Android notes application:

Platform Compatibility: The application should be compatible with various Android versions and screen sizes to ensure a broad user base. It should support both smartphones and tablets.

User Interface (UI) Design: The UI should be intuitive, user-friendly, and visually appealing. It should provide easy access to note creation, editing, organizing, and searching features. Consider using Material Design guidelines to ensure consistency with the Android platform.

Note Creation and Editing: Users should be able to create new notes and edit existing ones easily. Provide features like text formatting (bold, italics, underline), bullet points, numbering, and the ability to add images or attachments to notes.

Note Organization: The application should allow users to organize their notes efficiently. Implement features like creating notebooks or categories, adding tags or labels to notes, and providing a search function to quickly find specific notes.

Synchronization and Backup: Users should be able to synchronize their notes across multiple devices or platforms. Implement cloud-based synchronization or backup functionality, such as integration with services like Google Drive, Dropbox, or OneDrive.

Offline Mode: Users should be able to access and edit their notes even without an internet connection. Ensure that the application allows offline access to previously synchronized notes and automatically synchronizes changes when an internet connection is available.

Reminders and Notifications: Implement features for setting reminders and receiving notifications for important notes or tasks. This can help users stay organized and stay on top of their priorities.

Security and Privacy: Ensure that the application provides robust security measures to protect user data, such as encrypted storage, secure authentication, and options for passcode or biometric lock for accessing the application. Respect user privacy and clearly communicate the data handling practices.

Sharing and Collaboration: Include the ability to share notes with others via email, messaging apps, or social media. Consider adding collaboration features that allow multiple users to work on the same note simultaneously.

Customization: Provide options for users to customize the application's appearance, such as themes, font sizes, and color schemes, to suit their preferences.

Performance: The application should be responsive and perform well, even with a large

number of notes. Optimize loading times, scrolling, and search functionalities to provide a smooth user experience.

Integration with Device Features: Leverage Android device features like sharing content from other applications to create new notes, using the camera or microphone for adding multimedia content, or accessing the device's storage for importing/exporting notes.

2.4 Hardware Requirements

It is also important to consider the specific needs of your users when determining the hardware requirements for your Android notes application. Here are some of the hardware requirements for an Android notes application:

- **Processor:** A minimum of a 1.5 GHz processor is recommended for smooth performance.
- **RAM:** A minimum of 2 GB of RAM is recommended for smooth performance.
- **Storage:** A minimum of 8 GB of storage is recommended for storing notes and other data.
- **Screen:** A minimum of a 5-inch screen is recommended for ease of use.
- **Camera:** A camera is not required, but it can be useful for taking pictures or screenshots to add to notes.
- **Internet connection:** An internet connection is not required for basic note-taking, but it is required for some features such as syncing notes to the cloud or sharing notes with others.

2.5 Software Requirements

It is also important to consider the specific needs of your users when determining the software requirements for your Android notes application. Here are some of the software requirements for an Android notes application:

- **Operating system:** The application should be compatible with the latest version of the Android operating system.
- **Development environment:** The application should be developed using the latest version of the Android SDK and Android Studio.
- **Programming language:** The application should be written in Java or Kotlin.
- **Libraries:** The application may require the use of third-party libraries, such as the Material Design library or the Realm database library.
- **Testing:** The application should be thoroughly tested to ensure that it works correctly on a variety of devices and in a variety of situations.

CHAPTER 3

DESIGN OF NOTES APPLICATION

In the context of an Android notes application, the term "design" refers to the visual and interactive aspects of the application's user interface. It encompasses the layout, colors, typography, icons, and overall aesthetic appeal of the application. A well-designed notes application focuses on providing a clean and intuitive user interface, making it easy for users to navigate, create, edit, and organize their notes. The design should prioritize readability, ensuring that the text is easily legible and the interface elements are appropriately sized and spaced. The design of an Android notes application plays a crucial role in enhancing the user experience and creating an engaging and enjoyable environment for note-taking.

3.1 Data Flow Diagram

A data flow diagram is a graphical representation that illustrates the flow of data within a system. It visually depicts how data moves through various processes, stores, and external entities in a system.

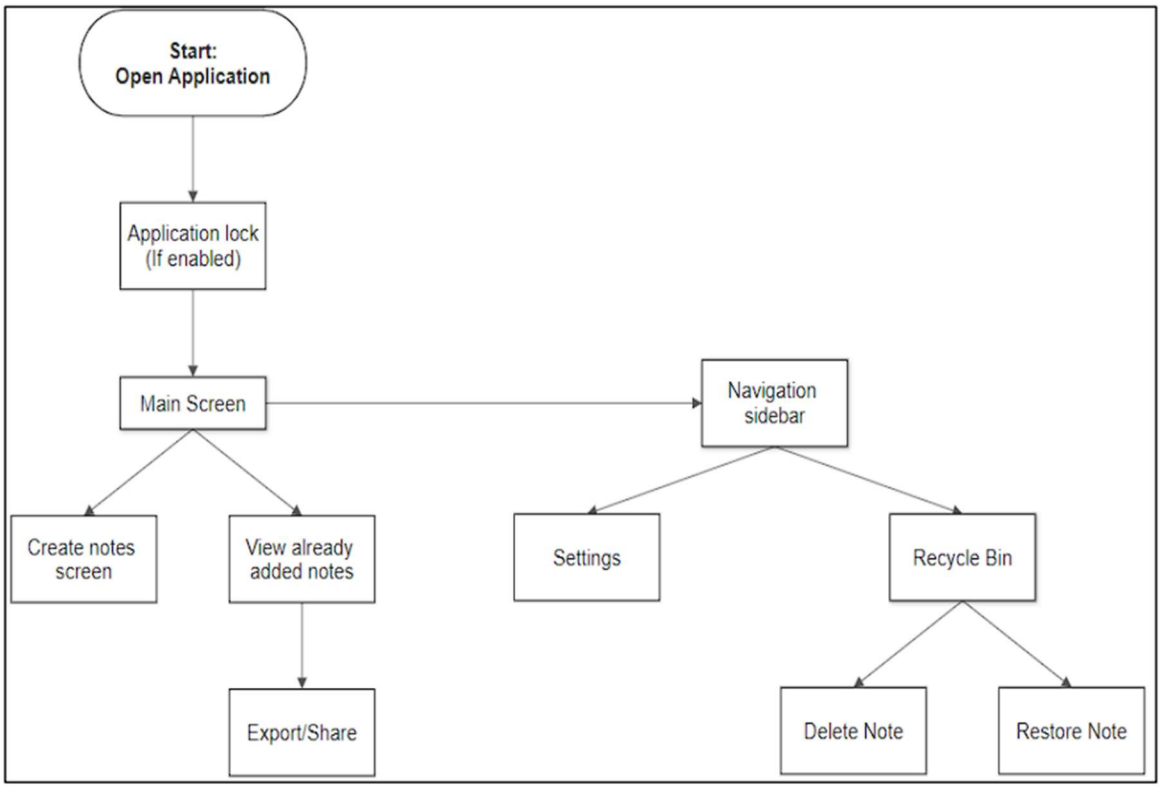

Figure 3.1 Dataflow diagram

Figure 3.1 shows the Dataflow diagram of the Android Notes Application. DFDs are commonly used in software engineering and business analysis to model and analyse information systems. DFDs can be represented at different levels of abstraction, known as DFD levels. The highest level is the Context Diagram, which provides an overview of the entire system, showing the interactions between external entities and the system as a whole. The context diagram typically consists of a single process representing the entire system. In the lower levels of the data flow diagram, more detailed processes and data flows are represented. Each process from the higher level can be broken down into subprocesses, creating a hierarchy of DFDs that provide a more detailed understanding of the system's functionality and data flow. It is important to note that DFDs focus on the flow of data rather than the specific implementation details or algorithms within each process. They are useful for understanding the system's data requirements, identifying potential bottlenecks, and communicating system functionality to stakeholders.

The project architecture for the Android notes application can be outlined as follows:

- **Open Application:** The user opens the application on their Android device, either from the app drawer or home screen.
- **Application Lock (if enabled):** If the user has enabled the application lock feature, they will be prompted to authenticate themselves, typically through a PIN, password, or biometric authentication.
- **Home Screen:** Once authenticated, the user is presented with the home screen of the notes application. Here, they can view the notes they have already added.

  a) View Already Added Notes: The user can scroll through the list of existing notes on the home screen. Each note is typically displayed with a title, summary, and other relevant information. The user can tap on a note to view its full content.

  Export/Share: The user may have the option to export or share a note, allowing them to send the note content via email, messaging apps, or other sharing methods.

  b) Create New Note: The user can create a new note by tapping on a button or using a designated area on the home screen. This action takes them to the note creation interface.

  Export/Share: Similar to viewing the existing notes, the user may have the option to export or share the newly created note.
- **Navigation Sidebar:** The notes application may include a navigation sidebar accessible through a button or swipe gesture. This sidebar provides additional functionality and options for the user.

a) Settings: The user can access the application's settings through the navigation sidebar. Here, they can configure preferences, customize the application's behaviour, or adjust various options.

b) Recycle Bin: The recycle bin feature may be present in the navigation sidebar, allowing the user to manage deleted notes.

c) App Info: It typically refers to the information associated with a mobile application. This includes details about the app's features, functionalities, version, developer, and other relevant information.

- **Restore Note:** When a note is deleted, it is moved to the recycle bin. The user can choose to restore a note from the recycle bin back to the home screen, making it accessible again.
- **Delete Note:** If the user decides to permanently delete a note from the recycle bin, they can use the delete option. This action removes the note from the application entirely.

CHAPTER 4

IMPLEMENTATION

Implementation is defined as specific set of activities designed to put into practice an activity or program of known dimensions. Implementation processes are purposeful and are described insufficient details such that independent can detect the presence and strength of the "specific set of activities" related to implementation.

4.1Details of the language

The term programming languages usually refers to the high-level languages. Each programming languages has a unique set of keywords and special syntax for organizing program instructions. Programming languages is a set of commands, instructions and other syntax use to create software programs. Our project is implemented using Java programming language.

4.2 Java Environment

The Java development environment consists of the Java Development Kit (JDK), an Integrated Development Environment (IDE), and optional tools. The JDK includes the Java compiler, runtime environment, and libraries required for Java development. IDEs like Eclipse, IntelliJ IDEA, or NetBeans provide a user-friendly interface with code editing, debugging, and project management features. Build tools like Apache Maven or Gradle automate project building and dependency management. Testing frameworks such as JUnit or TestNG help in writing and executing automated tests. By setting up this environment, developers can write, compile, and run Java code efficiently, manage dependencies, and ensure code quality through testing. It provides a robust platform for developing Java applications. Java environment includes many development tools and hundreds of classes and methods. The development tools are part of the system known as Java Development Kit (JDK)and the classes and methods are part of the Java Standard Library (JSL).also known as Application Programming Interface (API).

4.3 Java Media Framework

The Java Media Framework (JMF) is a recent API for Java dealing with real-time multimedia presentation and effects processing. The Java Media Framework (JMF) is a multimedia framework that enables developers to incorporate multimedia functionality into Java applications. It provides a platform-independent API for handling audio, video, and other

media types. However, it is important to note that JMF is not specifically designed or supported for Android development. For Android, developers should rely on the Android Multimedia framework, which offers a comprehensive set of APIs and components tailored for multimedia playback, recording, and processing on Android devices. The Android Multimedia framework includes classes like Media Player, Media Recorder, and Media Codec, which provide robust multimedia functionality specifically optimized for the Android platform. Utilizing the Android Multimedia framework ensures compatibility and optimal performance in Android applications. The beta JMF 2.0 specification will be used for this report, as they currently reflect the features that will appear in the final version.

4.4 About Android

Android is an open-source mobile operating system developed by Google. It is designed for touchscreen devices like smartphones and tablets. Android is based on the Linux kernel and uses Java as its primary programming language. It provides a customizable user interface, a rich application framework, and access to a vast ecosystem of apps through the Google Play Store. Android supports multitasking, allowing users to switch between apps seamlessly. It offers connectivity options like Wi-Fi, Bluetooth, NFC, and mobile data. Android integrates with various Google services such as Gmail, Maps, and Drive. Security features, regular updates, and app sandboxing ensure user data and device safety. Android's popularity has made it the dominant mobile OS, powering a wide range of devices worldwide. Android is developed by a consortium of developers known as the Open Handset Alliance and commercially sponsored by Google. It was unveiled in November 2007, with the first commercial Android device, the HTC Dream, being launched in September 2008. Most versions of Android are proprietary. The core components are taken from the Android Open-Source Project (AOSP), which is free and open-source software (FOSS) primarily licensed under the Apache License.

4.5 Android Architecture

Android is architected in the form of a software stack comprising applications, an OS, run-time environment, middleware, services, and libraries. Each layer of the stack, and the corresponding elements within each layer, are tightly integrated and carefully tuned to provide the optimal application development and execution environment for mobile devices. The Android software stack is a Linux kernel and a collection of C/C++ libraries exposed through an application framework that provides services for, and management of, the runtime and

applications. The Android software stack is composed of the following: -

- Linux kernel
- Libraries
- Android run time
- Application framework
- Application network

4.6 Linux Kernel

The Linux kernel is the core component of the Linux operating system. It acts as an interface between the hardware and software layers, providing essential functionalities and services for the operating system and its applications. The kernel manages system resources, including memory, CPU, devices, and file systems. It handles process scheduling, memory management, input/output operations, and device drivers. The Linux kernel is known for its stability, scalability, and open-source nature, allowing developers to modify and enhance its code. It supports a wide range of hardware architectures and provides a platform for running various operating systems and applications. As an integral part of Linux-based operating systems, the kernel plays a crucial role.

4.7 Libraries

There are several libraries commonly used in Android notes applications to enhance functionality and simplify development. Here are some popular libraries that can be utilized. It runs on top of the kernel Includes the following:

- C/C++ core libraries like Lick and SSL (for encrypted communication between clients and servers).
- A media library for playback of audio and video media.
- A surface manager to provide display management.
- Graphics libraries that include SDL and OpenGL for 2D and 3D graphics.
- SSL and Web Kit for integrated web browser and Internet security.

4.8 Android Run Time

The Android Runtime (ART) is the runtime environment used in Android to execute applications. It replaced the Dalvik Virtual Machine (DVM) starting from Android 5.0. ART

employs Just-In-Time (JIT) compilation, converting bytecode into native machine code at runtime for improved performance. It also introduces Ahead-Of-Time (AOT) compilation, where bytecode is compiled into native code during installation, resulting in faster startup times and reduced runtime overhead. ART brings enhancements such as improved garbage collection, better debugging support, and lower memory usage compared to the DVM. The transition to ART has led to faster app startup, improved responsiveness, and better battery efficiency, offering these benefits to Android applications without requiring any changes to the code.

CHAPTER 5

RESULTS

Results of the Android notes application provides a convenient and organized way to manage and track various outcomes, achievements, or findings. It allows users to document and categorize the results of their tasks, projects, experiments, or any other activities they want to keep track of.

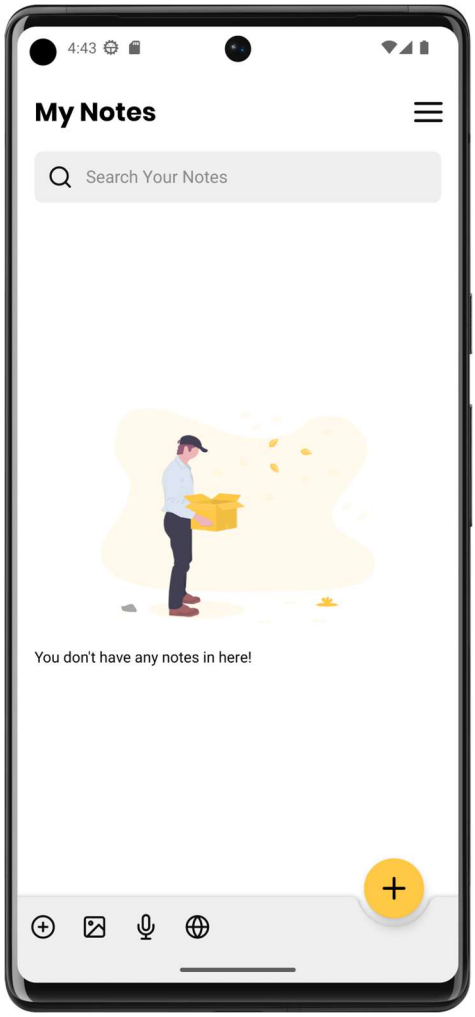

Figure 5.1.1: Home screen

Figure 5.1.1 shows the home screen of the Android notes application which serves as the main interface where users can access and manage their notes. It provides a centralized hub where users can view a summary or a list of their notes, giving them a quick overview of their existing notes and recent activity.

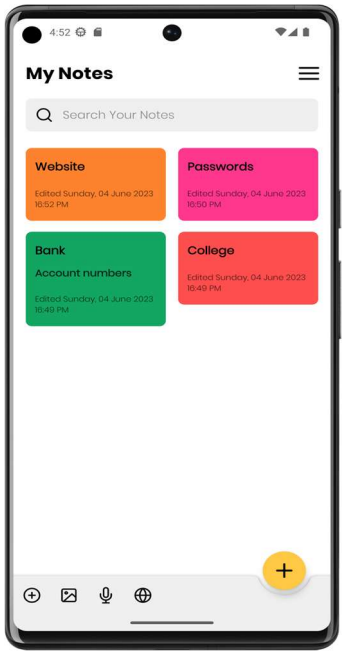

Figure 5.1.2: List of notes

Figure 5.1.2 shows the list of notes where users can view and access their collection of notes. This feature provides a comprehensive and organized display of all the user's notes, allowing for easy navigation and management.

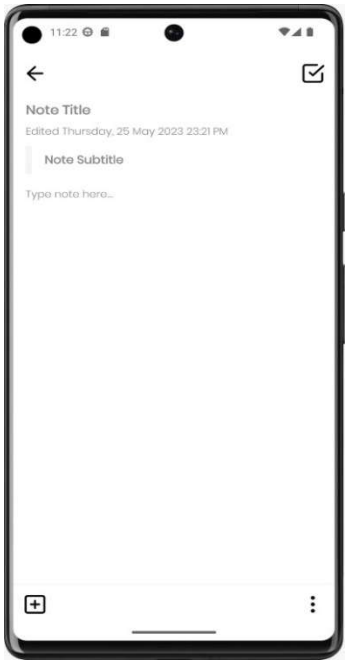

Figure 5.1.3: Add new note to screen

Figure 5.1.3 shows the add a new note feature that allows users to create and save new notes. Users can quickly enter the content of their note, whether it is text, images, or both, and save it within the application.

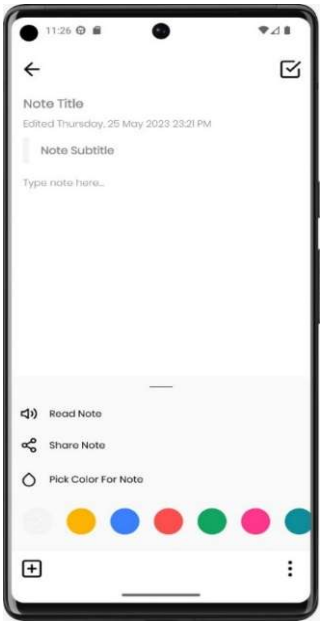

Figure 5.1.4: Add Color to note

Figure 5.1.4 shows the add colour to note feature which enhances the organization and personalization of notes, providing users with a more visually appealing and personalized note taking experience.

Figure 5.1.5: Text-to-Speech

Figure 5.1.5 shows the text-to-speech feature that converts written text into spoken words. With this feature, users can listen to their notes instead of reading them, making it convenient for those who prefer auditory information or have visual impairments.

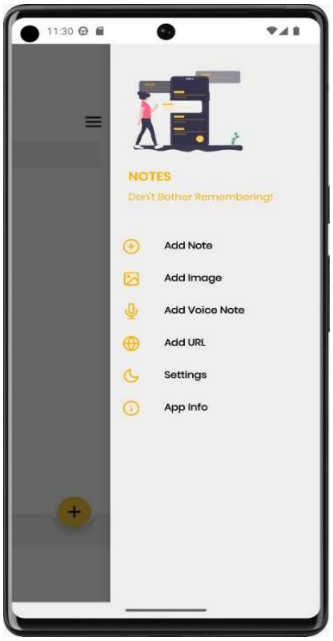

Figure 5.1.6: Side menu

Figure 5.1.6 shows the side menu of the notes application which consists of a list of options which enhances the user experience by offering an organized and accessible menu system, making it efficient for users to navigate through the various sections of the notes application.

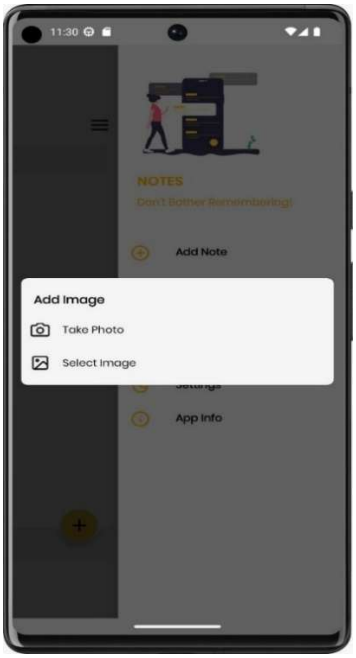

Figure 5.1.7: Add image to notes

Figure 5.1.7 shows the add image feature which allows the users to insert images into their notes. With this functionality, users can capture images using their device's camera or select existing images from the gallery and seamlessly integrate them into their notes.

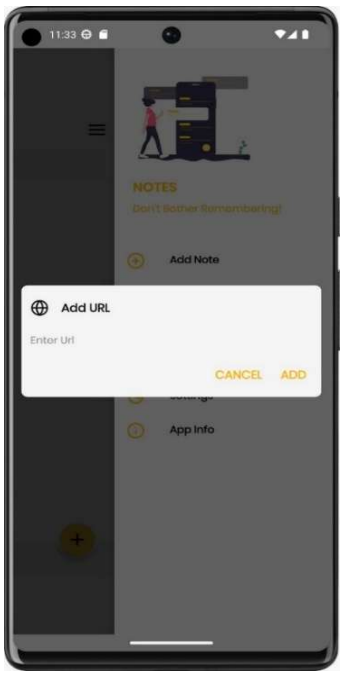

Figure 5.1.8: Add url to notes

Figure 5.1.8 shows the add URL feature which allows the users to include web links or URLs within their notes. It enables users to easily reference and access online resources directly from their notes.

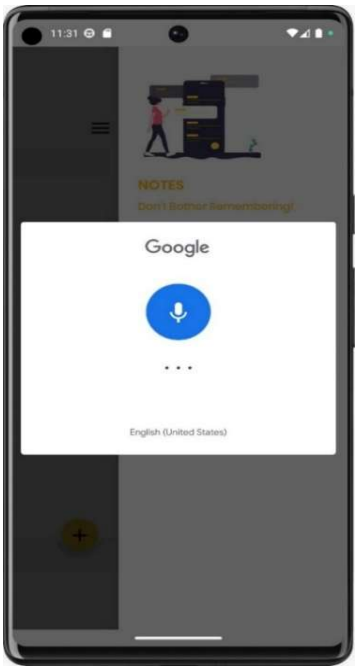

Figure 5.1.9: Add voice note

Figure 5.1.9 shows the add voice note feature in an which allows the users to record and attach audio recordings to their notes. With this feature, users can easily capture their thoughts, ideas, or any other information by speaking into their device's microphone.

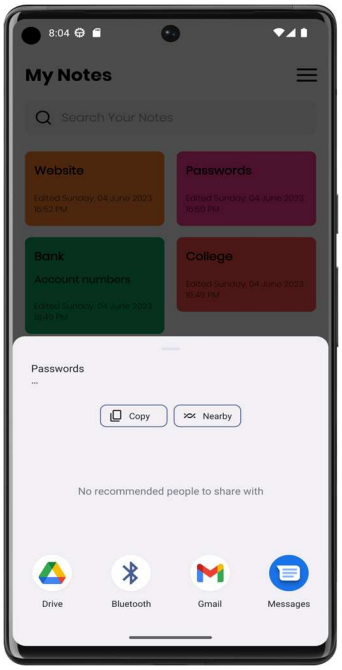

Figure 5.2.0: Share a note

Figure 5.2.0 shows the share a note feature which allows the user to share their notes with others. The ability to share notes promotes productivity and efficiency by eliminating the need for manual sharing or duplication of information.

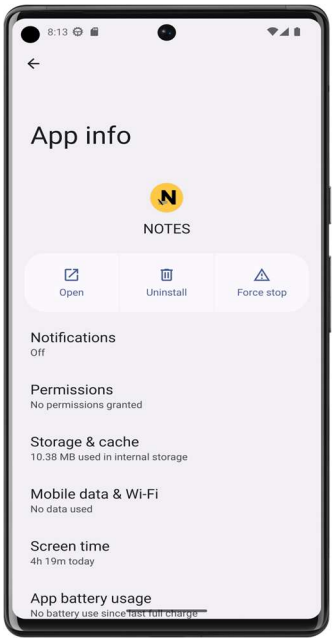

Figure 5.2.1 App Information

Figure 5.2.1 shows the app information of notes application which refers to the details and metadata associated with the application. It includes information that helps the users to understand the app's purpose, features, and other relevant details before installing or using it.

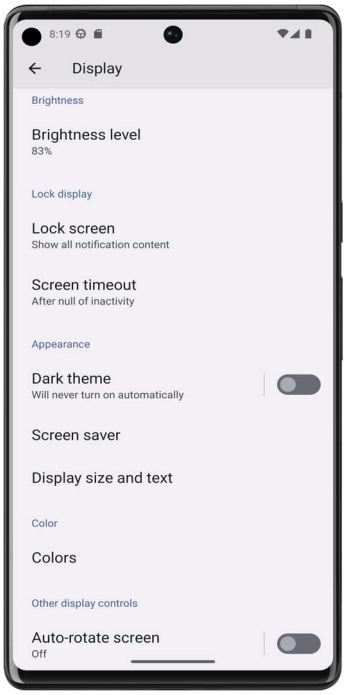

Figure 5.2.2: Setting of notes app

Figure 5.2.2 shows the setting of the notes application which provides a user interface where users can configure various preferences and customize the behavior of the application.

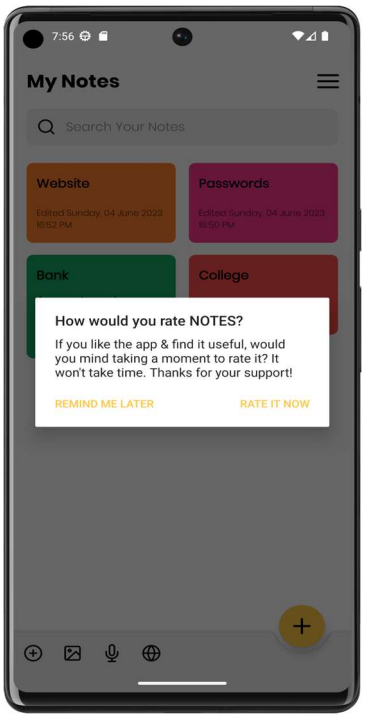

Figure 5.2.3: Rating the Notes App

Figure 5.2.3 shows the rating interface of the notes application which allows the users to rate the app according to their user experience. Rating a notes application depends on several factors that contribute to its overall usability and functionality.

CHAPTER 6

CONCLUSION AND FUTURE WORK

In conclusion, the Android notes application offers a convenient and user-friendly solution for managing notes on Android devices. With its intuitive interface and essential features like creating, editing, and categorizing notes, it provides users with an effective tool for organizing their information. However, there are several potential areas for future development and improvement. One possibility is implementing cloud synchronization, allowing users to access their notes across multiple devices and ensuring data backup. Collaboration features could enable users to share and collaborate on notes with others, fostering teamwork. Adding rich text formatting options would enhance the visual appeal and formatting capabilities of the notes. Integrating reminders and notifications would help users stay organized and on top of their tasks. Additionally, integrating the application with external services like calendars or task management tools would provide seamless integration and improve productivity. By considering these future developments, the Android notes application can continue to evolve and meet the changing needs of users, providing a comprehensive and efficient note-taking solution.

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