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Conversion Tools

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Abstract: Mobile application development and use has exploded since the release of Google's Android operating system. The conversion tool is an application that offers a wide range of free conversion utilities such as length converters , area converters, encryption & decryption, password generators and many other tools. The target audience for this application is students.
Keywords: Android App, Android Studio, Conversion Tools, Mobile Phones, Cryptography, Unit Converter.

I. INTRODUCTION

Today, as the developing of hardware of mobile is getting better, the performance index is much higher than the actual requirements of the software configuration. Phone's features more depend on software. As the Android operating system is getting more popular, the application based on Android SDK attracts much more attention. But now, some of the Android application interface is too cumbersome, pop-up ads is overmuch and the function is too single, these cause some inconvenience to the users. The application is developed based on Java and Android SDK. The interfaces of these Android apps are pretty and the operation is smooth. What's more, the cumbersome interface and excessive advertising are eliminated, so that users are able to manipulate this app more conveniently and smoothly.

Conversion Tools are simple, smart and one of the most useful android app which provides wide range of conversion tools that are used in daily life by people. It is not only used by students but also by industry professionals.

There are so many available on the play store and on the internet however they don t have as many functions as we want them to or are too complicated to use. So we have created a simple converter app that is easy to use and also one that has many functions in it. This application is an android app which can be run on any android compatible tablets and mobile phones.

II. EXISTING SYSTEM

Currently , there are so many different unit converter android applications that are available in the play store.

When the existing android apps were studied , it was found to have some problems.

The problems that were found were that the GUI was old and the existing system was time consuming and not very efficient to use.

The existing system only offers basic unit conversions length , volume and etc. which doesn t appeal to many of the users. And even while offering these basic conversion, almost all of the existing systems have ads popping up while users are calculating which can be an annoyance.

The GUI of the existing system is not appealing to the eye hence doesn t attract most users.

And even now , there are some people who are not technologically sound who still perform manual calculations for e.g.: if a student doesn t know the formula for a particular question , they will first check the formula from their book and then start using it. This process is very time-consuming and not to mention there might be inaccuracy in the calculation. The process also wastes our energy.

There comes a problem with data integrity while using this manual method. This kind of system also involves paper work.

The drawback of the existing system was what led to the development of the new application which is very user friendly and effective .

While developing the new system, all of the requirements of the end user was taken into consideration.

These have been the maximum efforts towards overcoming the drawbacks of the existing system , while the new system was designed and developed.

III.PROPOSED SYSTEM

Our primary goal with the new system was to overcome the drawbacks of the existing system. We did a small survey of the drawbacks that the existing system has before we began working towards our app.

We have designed our app in such a way that a student of any age group, an industry professional or anyone who needs to perform calculations can do so without any problems and get accurate results.

We have provided a wide range of conversion tools with maximum optimization in our app. So you will not have to download separate standalone utility applications to perform other calculations.

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The proposed system is extremely user friendly with an attractive and minimalistic output screen i.e. it will be trouble free to use and also appealing to the eye.
The proposed system will be able to eliminate the wastage of time and energy.
The proposed system can be used at any location and at any time.
The proposed system ensures data accuracy and also time saving.
The proposed system will be free of cost.
The proposed system will eliminate the need of manual calculations.
It will have a relatively fast approach , will be highly reliable and will produce efficient results.
With the help of this new system , we will be able to improve productivity.

IV. SCOPE OF SYSTEM

As we have mentioned above , we have provided a wide range of conversion tools that will be of help to students of any age group, an industry professional or anyone who needs to perform any calculation. Our app is easy to use , it has a simple interface and it will provide accurate results.
We have included features to allow people to calculate BMI, Age ,Volume , Temperature, Data conversion(from MB to GB and etc.), Mass, Length, Conversion from binary to octal to hexadecimal and etc, Speed ,Area , Generate Passwords , Encrypt & Decrypt messages and more.
As the target audience for the app is students, we have included a section for students to see the list of formulas for the subjects: Mathematics ,Physics and Chemistry all in one app. And as per the current trend , we have included a dark theme which can be chosen according to the user's preference.

V. DESIGN OF HOMEPAGE

Design is the first step in the development phase of any application. Once the software and hardware requirements have been met , the software design activities are of main importance next. It involves three technical activities : design , coding , implementation & testing .
We have designed the app keeping in mind that students of any age and even adults who are not good at using phones are able to use this app with ease.
The two figures below show the design of the homepage of our app. Fig 1 shows the homepage of the app in Light Theme which is default and Fig 2 shows the design of the homepage in Dark Theme. The user can switch the Dark Theme on or off from the settings screen of the app.



Fig. 1 The homepage in Light Theme

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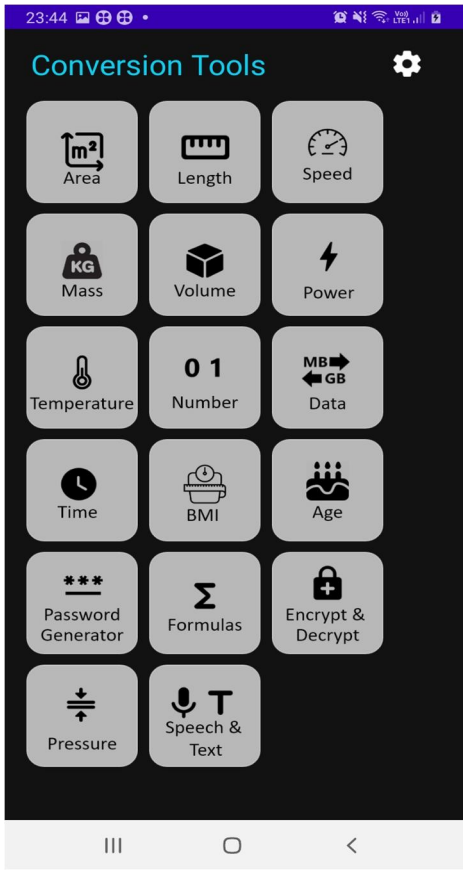


Fig. 2 The homepage in Dark Theme

VI. FUNCTIONALITIES

The app allows the users the following functionalities to choose from and use accordingly:

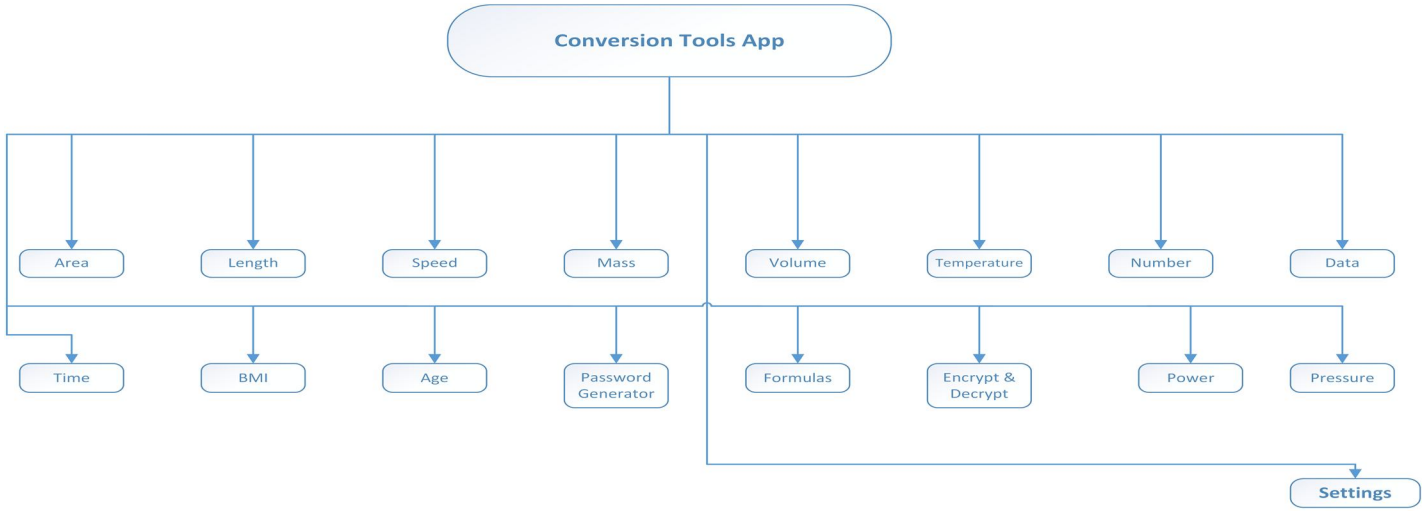


Fig 3.1 Functionalities present in the app

Some of the functionalities that make this app different from the other conversion tools available on the PlayStore is that we have included section where the user can encrypt & decrypt messages or text of any sort. For ex: if I send an encrypted text to a friend through any social media app , they can copy that text and decrypt that message on their app in their phone.

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The figure below shows how the user can encrypt text:

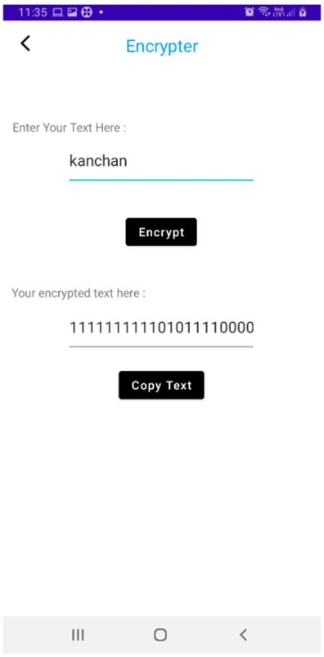


Fig. 3.1 The selection screen for the user

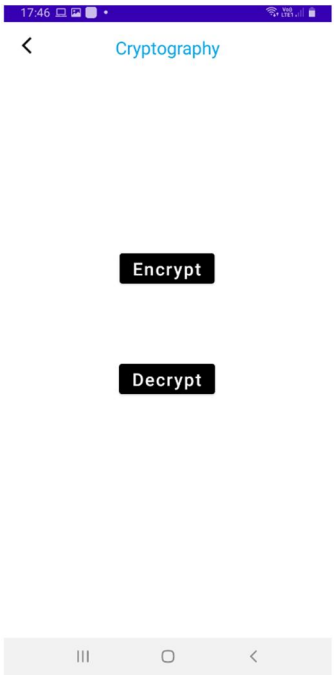


Fig. 3.3 Encryption example

To decrypt in another android device , the user has to copy this encrypted text and send it over to the other device. Then in the other device, the user has to copy this encrypted text and paste it in the decrypt screen as how in the figure below:

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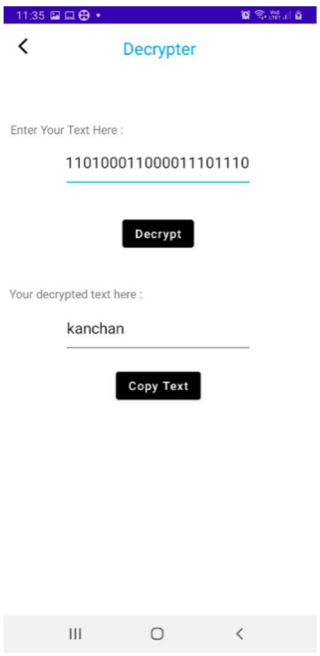


Fig 3.3 Decryption example in second device

The other section that we have added is the formula section for students and it is divided into three subjects(Mathematics , Physics and Chemistry) as shown below:

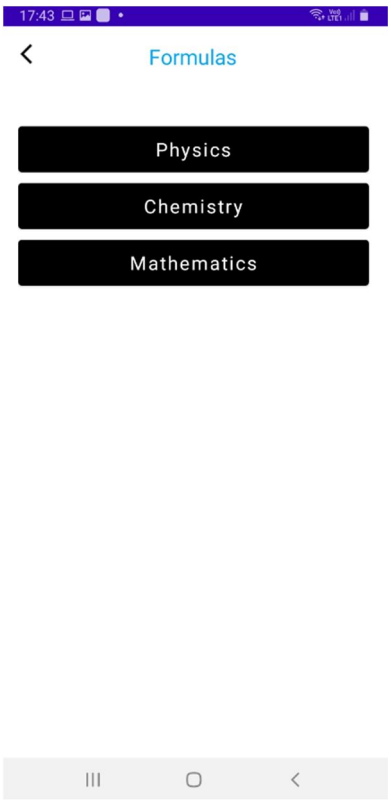


Fig 3.5 Formula screen

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Another section in the app that is different is that we have included a section for speech and text conversion where the user can choose to either convert their written text to speech or vice versa as shown in the figure's below:

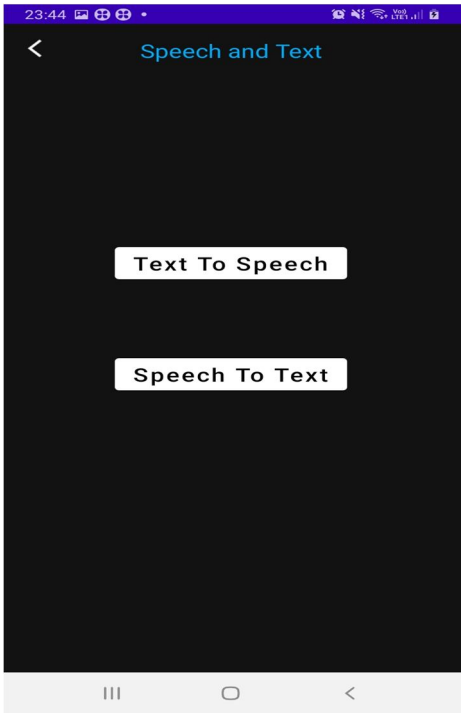


Fig 3.6 Screen for Speech & Text Conversion

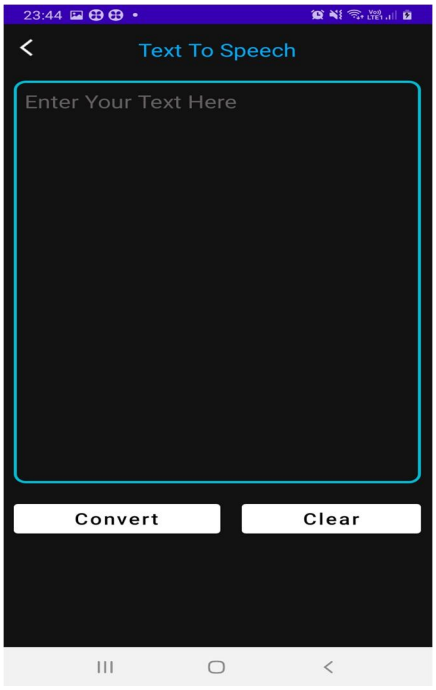


Fig 3.7 Text to Speech Conversion Screen

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Fig 3.8 Speech to Text Conversion Screen

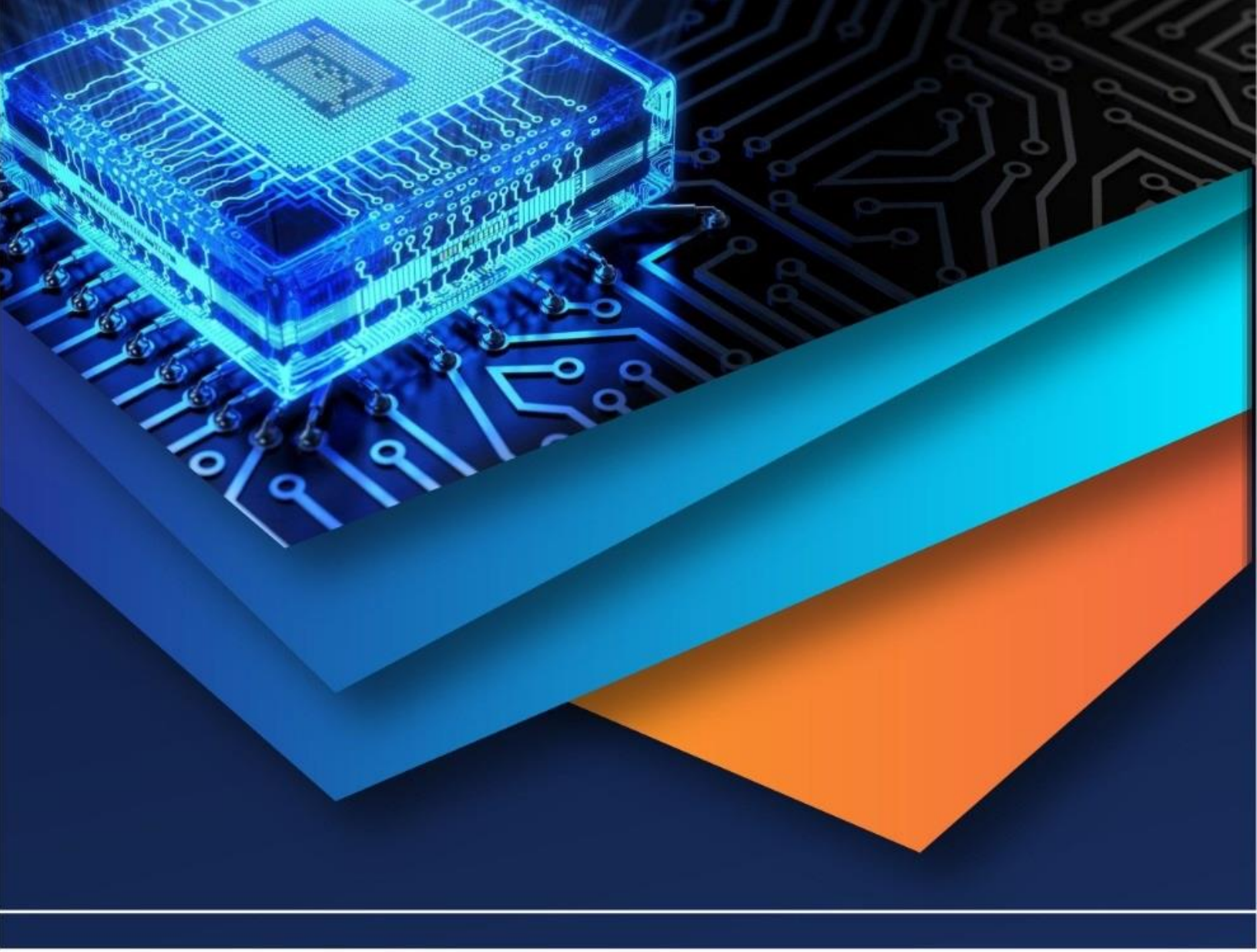
VII. CONCLUSION

Android smartphones are in the hype in the 21st century. The scope of android applications is increasing day by day. The app was designed in such a way that future modifications can be done without any hassle. It provides a friendly and minimalistic graphical user interface (GUI) which proves to be better when compared to the existing system. It allows the user multiple functions to choose from and use. The utility and efficiency of the app is high. It effectively overcomes the delay in calculation .The system has adequate scope for modification in future if it is necessary.

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