Battery Saver in Android Studio

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Abstract: Now a day 75 % of people or even more than that use Android Operating System in the world. Android Operating System has groundbreaking features like Mobile Hotspots, Calling, Texting, Gaming, WIFI, Bluetooth, etc in such small devices that fit in the palm. In between these revolutionary features, we are going to talk about the main feature which is its battery. Because of Battery, it is portable meaning, it can be carried anywhere and it doesn't need to be connected continuously to an electric socket like desktops, TVs, etc while using it. But still, it needs to be charged at least once a day. Android Operating System uses a lot of resources which in turn reduces the battery charge too quickly. To tackle this situation much research has been done to optimize the Battery quality of android devices but with a limited supply of energy, the battery can't withstand android applications for a long-time. There are various ways to enhance power management. One of them is a battery saver application. This application can help the user to reduce power consumption slightly.

Keywords: Smartphone Android Operating System, Battery Saver.

I.   INTRODUCTION

In the present as well as the future, Android Operating System is essential for any person in any stream. Let it be a student, worker, employee, manager, trustee, etc. To satisfy their needs Mobile phones should be charged and operational 24/7. Because the revolutionary features of Android Devices can come in handy if any emergency occurs. But the portable battery has a limitation because of which it needs to be recharged at least once a day. Some Android Device has a capacity of more than one day.

Therefore, we studied different type's battery applications from the Google Play store and tried to run them on Virtual Android Devices. Results will be shown in the main paper. We will pick only one android battery saver application that is the most efficient and easy to use and understand.

As time went on, more and more android developers developed sophisticated applications that used a lot of RAM and Battery charge. Even hardware got new upgrades such as an extra sim slot, SD card, Camera, Flashlights, etc. The developers and researchers estimated that Wi-Fi, Location, Third Party Ads, and other Third Party applications eat up very high usage of power.

II.   LITERATURE SURVEY

Android Battery has limited charge therefore; they should be kept either for charging or to conserve/preserve the battery. So that it becomes handy for emergency purposes. There are various kinds of functions, features, and applications in an android device. Each function requires a particular amount of battery consumption as we use it in our day-to-day life. It happens more often that an app or function uses more than the necessary amount of battery required.

This makes you recharge your android device again and again. Also continuously charging your device may result on damaging the battery or reducing the battery life. As you need to use your android device, again and again, it is necessary that your device keeps up with you and enables you a longer period for usage. This application is a good measure to preserve your battery.

This application will make efficient use of the android screen. We are making an application that will save battery by switching off the pixels of the android screen. This will help in reducing battery usage slightly.

III. PROJECT SCOPE

Saving power of Android-enabled devices has become a significant issue with 400,000 such devices being activated daily the battery life has not increased at the same pace to support the power demand Thus much research has been carried out to investigate how to minimize the power consumption in smartphones.

This battery saver is useful only for reading or texting purposes. You cannot watch movies, play games, etc because it requires a full screen and sometimes even full power of RAM, processors, network, location, etc based on what you are using. Other things like location, cache memory, etc can be optimized from the settings application. We won't be showing how to do it in this paper. Point to be noted, "THIS APPLICATION CAN REDUCE THE BATTERY CONSUMPTION SLIGHTLY". This information will help people understand the efficient way to use the 'Screen Hider Application as well as Battery Saver Mode in Settings.
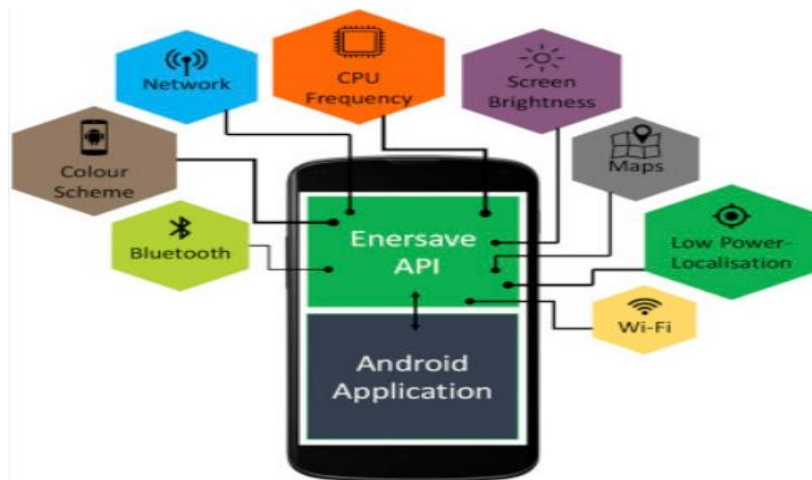
IV. METHODOLOGY

In this project, we will build an application that saves the battery by shutting down the pixels on the unwanted side of the screen black. In other batteries are many functions like cooling the temperature of the battery, cleaning the memory, cleaning cache, junk files, etc. Our app doesn't contain such features, because most of these functions are available in Android Settings App. This application will reduce battery usage by turning off the pixels of half screen in its initial opening. The name of the application is 'Screen Hider". If Battery Saver Mode is used during playing games, watching movies, etc, it affects the accessibility of the mobile and sometimes might use more battery than when the battery saver mode is off. when using Battery Saver Mode, we can use it only when we don't use our mobile for high-end tasks which require most of its RAM, Memory, CPU cores, Brightness, Location, etc.

Below are the features we are going to include in our android application project. When you opened the application for the first time, it will show you the interface given.

1. When the application starts it will display a screen where at the top there is the application icon, in middle, there is a string or a sentence written: "Welcome to the application that helps you save battery and gain more privacy when reading content on your device". Below shows that the application is stopped or started and below there is a button "Start". At the bottom of the screen are the names of the people who made the application.

2. After clicking start, it asks for permission for putting screen pixels in the off state. It also shows the text written on it "For this to work, you will be prompted in the next screen to enable the drawing over other application permission". After clicking proceeds, it directs toward the settings which ask for permission to display over other apps.

3. After allowing, press back and press the Start button to start the service.

4. The application will start, half the screen of the mobile will be covered in pixels in the off state, and on that will be written "the application has started, to continue the tutorial, tap on the black area".

5. As soon as you tap on the black area, half side of the screen will become functional again and the other half of the screen will become black showing the interface "You saw that by tapping on the black area, the viewpoint has been switched there Tap again".

6. Then after tapping again the screen changes and you can see that both the top side and the bottom side of the screen have become black and the screen in the middle is visible on the mobile. There is an interface written as "You can interact with your original content through the viewport as usual".

7. Again tapping on the black area will make the screen visible of the above and the below position while becoming black again showing the interface as "Pressing the 'X' button will quickly stop the application. Tap on the black area to continue"

8. Again the interface will show "Thank you".

9. Pressing on the 'X' button will close the application and the whole screen will become visible again

V. CONCLUSION

From this project, we understand the working of our "Screen Hider" or "Black Screen Battery Saver". The pros and cons of battery-saver applications will be discussed. The Battery is limited and the only way to extend it is by optimizing it with our battery saver. Android Mobile phones are a need in today's world and we need to understand their battery optimization to use them anywhere at any time. Awareness is necessary so that it will help people to use mobile phones more efficiently.

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