International **J**ournal of **I**nformation **T**echnology and **E**ducation (IJITE)
Volume 1, Number 1, December 2021

Smartphone-Based Operating System Adoption Rate in Millennial Generation

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Abstract

The development of Android into a smartphone operating system is the most widely used in the world. The Android system is an option for companies that want a low-cost operating system. This study was conducted to analyze whether the Android Operating System Comparison Lollipop, Marshmallow, and Nougat versions in terms of performance and user satisfaction. The research was conducted using a questionnaire as a research instrument. The research questionnaire distributed consisted of 10 questions. Based on data processing, the results obtained are 9 The number of respondents who use the Android Operating System v5.0 (Lollipop) with a value of 30%, while the number of respondents who use the Android Operating System V6.0 (Marshmallow) there are 10 respondents with a percentage value of 33.3% and those who use the Operating System. Android v7.0 (Nougat) has 11 respondents with a percentage value of 37.7.

*Keywords**:** Smartphone, Adoption, Operating System, Android*

Introduction

Android is a Linux-based operating system designed for touch screen mobile devices such as smartphones and tablet computers. Android's user interface is generally direct manipulation, using touch gestures similar to real actions, such as swiping, tapping, and pinching, to manipulate objects on the screen. As well as a virtual keyboard for writing text. When turned on, the Android device will load on the home screen, the main navigation, and the information center of the device, similar to the desktop on a personal computer. At the top of the screen is the status bar, which displays information about the device and its connectivity. This status bar can be "pulled" down to open a notification screen that displays important information or app updates, such as a received email or an incoming SMS, in a way that doesn't interfere with the user's activities on the device. Mobile operating systems have long been present in human life, to be exactly 20 years ago. Previously, cell phones were only able to send messages and make calls or receive calls. But now mobile phones can be connected to the internet and perform applications like computers, which are now commonly referred to as smartphones. This can happen because of the Mobile Operating System found on the users' smartphones or cell phones. In 1993 released the first smartphone, "IBM Simon" features a touch screen, email, and PDA. 3 years later, in 1996 the Palm Pilot 1000 introduced a personal digital assistant (PDA) for the first time with the Palm OS operating system. Still in the same year PC Handled was introduced for the first time with the Windows CE system. 4 years later, in 2000

Symbian became the first modern mobile operating system for smartphones launched by Ericsson R380.

A year later, in 2001 The Kyocera 6035 became the pioneer of the first smartphone to use the Palm OS. In 2002, Microsoft's first Windows CE (Pocket PC) on smartphones was introduced. Still, in 2002, Blackberry released its first smartphone. 3 years later, in 2005 Nokia introduced Maemo OS on its first internet tablet Nokia N770. Then in 2007, the Apple iPhone with iOS was introduced as the iPhone "mobile phone" and "internet communicator". A year later, in 2008 OHA formed by Google released Android 1.0 with the HTC Dream (T-Mobile G1) as the first Android phone. The Android version was preceded by the release of the Android beta in November 2007. The first commercial version, Android 1.0, was released in September 2008. Android is continuously developed by Google and the Open Handset Alliance (OHA), which have released a number of updates to the operating system since the release of the initial version. Since April 2009, Android versions have been developed under code names named after desserts and sweets. Each version was released in alphabetical order, namely Cupcake (1.5), Donut (1.6), Eclair (2.0–2.1), Froyo (2.2–2.2.3), Gingerbread (2.3– 2.3.7), Honeycomb (3.0–3.2 .6), Ice Cream Sandwich (4.0–4.0.4), Jelly Bean (4.1–4.3), KitKat (4.4+), Lollipop (5.0+), Marshmallow (6.0+), Nougat (7.0+) and later android versions latest is Android Oreo (8.0+). On September 3, 2013, Google announced that approximately 1 billion active mobile devices worldwide use the Android OS. Android 5.0 was first introduced under the codename "Android L" on June 25, 2014, during a keynote presentation at the Google I/O developer conference. Alongside Lollipop, the presentation focused on a number of Android-oriented platforms and new technologies, including Android TV, on the Android platform. Auto, wearable on the Android Wear computing platform, and the Google Fit health-tracking platform. Part of the presentation was dedicated to a new cross-platform design language referred to as "material design". Expanding on the "card" motif, first seen on Google Now, is a design with increased use of grid-based layouts, responsive animations and transitions, padding, and depth effects such as lighting and shadows. Design the interface (view) called "Material Design". 64-bit ART compiler Project volta, which is useful for increasing battery life by 30% longer lasting. 'factory reset protection'. This feature is useful when the smartphone is lost, it cannot be reset without entering the google id and password (password). compiled for Marshmallow using that software development kit (SDK), while all other apps will continue to use the previous permissions model.

Marshmallow also has a new power management scheme called Doze that reduces the activity level of background apps when the device determines that it's not being actively handled by the user, which, according to Google, doubles the device's battery consumption.[8] It also introduces the option to reset all network settings, available for the first time on Android, which clears network-related settings for WI-FI, Bluetooth and cellular connections to be used only by apps. Android Marshmallow provides native support for fingerprint recognition, enabling the use of fingerprints to unlock devices and Play Store authentication and Android Pay purchases; Standard APIs are also available to implement fingerprint-based authentication in other applications. Android. Marshmallow supports USB TypeC, including the ability to instruct devices to charge other devices via USB. Marshmallow also introduces "verified links" which can be configured to open directly within their specific applications without an advanced user manual. Android "Nougat" (codenamed

N in-development) is the major 7.0 release of the Android operating system. Android Marshmallow introduces a redesigned permissions model: there are now only eight categories of permissions, and apps are no longer automatically granted all the permissions they were assigned at installation time. An opt-in system is now in use, where users are prompted to grant or deny individual permissions (such as the ability to access the camera or microphone) for applications when they are needed. Apps remember their permission grants, and they can be customized by the user at any time. This new permissions model was first released as a developer preview on March 9, 2016, with factory images for current Nexus devices, as well as with a new "Beta Beta Program" that allows supported devices to be upgraded to the Android Nougat version via over-the-air. Updates, The last release was on August 22, 2016. The final build preview was released on July 18, 2016, to build number NPD90G. On October 19, 2016, Google released Android 7.1.1 as a developer preview for the Nexus 5X, Nexus 6P, and Pixel C. A second preview became available on November 22, 2016, before the final version was released to the public in December. 5, 2016.

Method

The questionnaire is a data collection technique that is carried out by giving a series of written questions to respondents to be answered regarding the problem or field to be studied, which can be given in person or by post or the internet. There are two types of questionnaires, namely closed and open. The questionnaire used in this case is a closed questionnaire, namely a questionnaire whose answers have been provided so that respondents just choose and answer directly (Sugiyono, 2008: 142). This questionnaire is addressed to Manado State University Students to find out the comparison of Lollipop, Marshmallow, and Nougat Operating Systems in terms of user satisfaction and operating system performance.

Research Stages Research stages are a systematic sequence in conducting research. In this paper, the stages of analysis carried out, in general, can be seen in the following figure 1:

Figure 1. Research Flow

This research was started by conducting an adequate literature study. See figure 1. After formulating the research problem and research objectives, the research continues with the determination of research methods. In this study, researchers used a survey method to measure and collect data. Data was collected by distributing questionnaires to respondents. Respondents filled in the data and the results were recapitulated for analysis. Data analysis was carried out by conducting comparative analysis to obtain comparison results between various versions of the Android operating system. The results of the comparison are then discussed and can be compared with the findings of this study with previous research to see what interesting things were found. The final part of this study, conclusions are built based on the findings that answer the research objectives.

Results and Discussion

This study aims to determine the Comparison of Lollipop, Marshmallow and Nougat Android Operating Systems in terms of performance and user satisfaction. The data collected is based on the results of the distributed questionnaires. The results of data collection for 30 respondents from the questionnaires distributed are as follows: Results of data analysis obtained from Table1. The number of respondents who use the Android Operating System V5.0 (Lollipop) is 9 people with a percentage value of 30%. The number of respondents who use the Android Operating System V6.0

(Marshmallow) is 10 people with a percentage value of 33.3%. The number of respondents who use the Android V7.0 (Nougat) Operating System is 11 people with a percentage value of 37.7%.

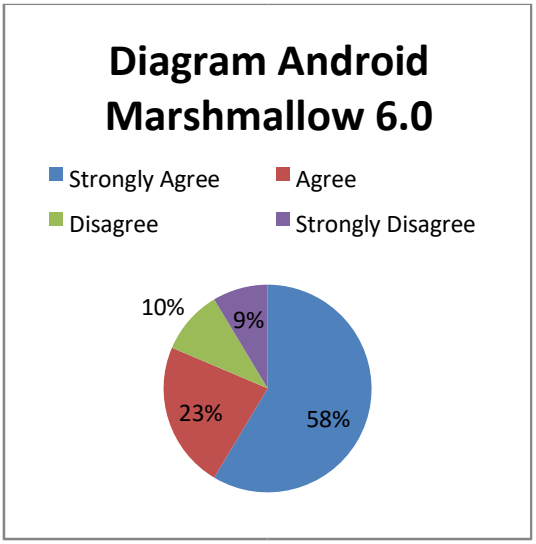

Figure 2. result

Based on the questionnaire distributed to 30 respondents, the results of the comparison of performance and user satisfaction with Android Operating Systems v5.0 (Lollipop), v6.0 (Marshmallow) and v7.0 (Nougat) have been obtained. Data from the results (Lollipop) found 58% strongly agree, using android v5.0 Figure 4. Nougat diagram (Lollipop) found 58% strongly agree, 23% agree, 10% Disagree and 9% Percentage of performance and Strongly Disagree. User satisfaction of 10 respondents who use android v5.0 (Lollipop) found 58% strongly agree, 23% agree, 10% Disagree and 9% Strongly Disagree.

Conlusion

In accordance with the discussion regarding the comparison of Android operating system versions (Lollipop, Marshmallow, Nougat) in terms of performance and user satisfaction. It can be concluded that the comparison of Nougat v7.0 is more widely used Figure 3. Marshmallow diagram than v5.0 and 6.0 because the percentage is 37.7% with the number of performance percentages and 11 respondents, while the user satisfaction value of 10 respondents is the percentage of using an operating system that uses Android. v5.0Android Marshmallow v6.0 33.3 with 10 respondents which is still less than the nougat version while the Android Operating System v5.0 (Lollipop) there are 9 people with a percentage value of 30%.

Based on the questionnaire distributed to 30 respondents, the results of the comparison of performance and user satisfaction with Android Operating Systems v5.0 (Lollipop), v6.0 (Marshmallow) and v7.0 (Nougat) have been obtained. The percentage of performance and user satisfaction of 9 respondents who use android v5.0 (Lollipop) was found to be 58% strongly agree, 23% agree, 10% Disagree and 9% Strongly Disagree. The percentage of performance and user satisfaction from 10 respondents who use android v5.0 (Lollipop) was found to be 58% strongly

agree, 23% agree, 10% Disagree and 9% Strongly Disagree. Percentage of performance and user satisfaction from 10 respondents who use android v5.0 (Lollipop) found 58% strongly agree, 23% agree, 10% Disagree and 9% Strongly Disagree.

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