TERM PAPER ULAB 2122 (GROUP 8)

“Android is Better than iOS for Software Developers”

	NAME	MATRIC NO.
	Amirul Faiz bin Ahmad Puad	B19EC0004
	Caleb Ong Jian Jie	B19EC0008
	Muhammad Amirul Fahmi bin Noor Anim	B19EC0018
	Muhammad Amirul Firdaus bin Mat Arif Shah	B19EC0019

Android is Better than iOS for Software Developers

For Generation Z who grew up with smartphones, have you ever wondered how dramatically handphones have changed? Today, our smartphones are essentially an extension of us. According to BankMycel (2020), the current number of smartphone users in the world today is 3.5 billion, and this means 45 per cent of the world's population owns a smartphone. With so much of our lives entwined with mobile devices, it is vital to ensure we have strong mobile security in place to protect our personal information and data. Open source software has slowly but surely infiltrated the enterprise space. In 2016, a research conducted found that 99 per cent of IT leaders believe that open source software is important to their enterprise IT strategy, as it opens collaboration for anyone to inspect, modify, and enhance (Carey & Macaulay, 2019).

An open source operating system (OS) is the low-level programming that underpins a PC's essential capacities, for, planning errands and controlling peripherals. An example of an operating system nowadays is Android, which is an open source software while the iOS is a closed one. Every OS has its vulnerabilities. As such it poses security issues to users, denial of services to users, elevation of privileges, system spoofing, executing or modifying command code remotely and more. As a result of these issues, users and organisations face risks. How then do users and organisations choose the right operating system? Choosing the right operating system will require users and organisations to consider the kind of work that they do. Hence, for software developers, the Android OS has an advantage over iOS because the Android OS is affordable, easy, and convenient for application development, more compatible with efficiency of security and stability, and able to support cross-platform.

Some users prefer using the iOS operating system to develop an application than Android because iOS has a better application revenue, high-quality standards, and less development time for application development. iOS has better application revenue than Android. According to Daria (2018), the average iOS owner is willing to pay more on installing applications on the Apple App Store which makes iOS get more revenue from mobile apps than Android. She also stated that in 2017 Worldwide Gross App, Apple App Store managed to gain $38.5 billion leaving Android behind with just $20.1 billion in application revenue. Furthermore, iOS also has a high-quality

standard to publish an application we developed into the Apple App Store. Before an application is made available to the market, the app needs to pass the high-quality standards of Apple's Play Store, so users can be guaranteed a best performance and amazing experience once they download the application (Srivastava, 2020). The development time for iOS apps is lesser compared to Android. iOS spends almost 28 per cent less time than Android to develop an application with the same specifications. This is due to a variety of Android devices that require an application to be tested on at least twenty devices with different resolutions, screen sizes and OS versions. These conclude that iOS is better at developing applications than Android.

However, a less development time and high-quality platform for application development is not necessary for most developers, especially for beginner developers, who are lacking in budget; an Android OS is more preferable than iOS because Android offers an affordable, easy, and convenient application development. Android application development provides more affordable development compared to iOS. Besides, Android application development provides more advantages on efficiency, profit, and cost-effectiveness (Spencer, n.d.). Android offers low investment on application development. According to Developer (2016), Android has lower restrictions than iOS. Android provides a Software Development Kit (SDK) with free of charge to the developer community. This can minimize the development and licensing cost of an application. William Spencer also stated that an Android developer only needed to make a one-time payment for their application which cost $25. However, an iOS developer needed to pay $99 a year for their application which cost a lot for their budget. Android is also easy to use for development purposes. To reinforce this statement, William Spencer stated that Android uses Java which is a programming language that most developers are familiar with. Java also utilized a wide variety of libraries that is useful for making a great application. So, developers do not need to be a skilled one as there is no complicated programming language for Android application development. Android is a better Os than iOS as it also proves that it is more convenient developer's software than iOS because Android allows approval of an app within a short time that allows updates on the app available within a short time. As for iOS, an approval of an app would take days or weeks that waste developers' time. Android also let developers release Alpha and Beta versions of their apps to be tested on a limited set of users (Spencer, n.d.). This can improve developers' applications as developers get feedback from the users, so it is proven that Android is

a better choice for developing an application especially for beginner developers because it is affordable, easy, and convenient for application development.

Next, in terms of security, some users recommend the iPhone operating system for being a better choice because of the security performance. Every user wants their smartphone protected from dangerous threats. iOS has the reputation to have no virus attack and threat, unlike Android which are less complex to security viruses. Rae Hodge (2020) states iOS has maintained their reputation as the most secure mobile operating system. Apple always put a high guarantee for their device security performance. As proven, Apple offered $1 Million to those who can hack an iPhone Operating System (Brewster, 2019). This is how users keep on putting their trust on Apple's security. Hence, it is true that the iPhone operating system is the best operating system for security performance.

Although iOS is more secured, which brings a lot of advantages to users, it does make the OS less flexible for software developers to develop a system, making iOS irrelevant. That means Apple has less flexibility due to the secure system since Apple controls the complete experience (Norton, 2020). This is against what developers wish for. So, the platform that offers more flexibility and supports the integration of applications is the Android operating system (Matellio, 2019). With a flexible operating system, developers can make a lot of features and guarantee the satisfaction of user requirements. In addition, Android allows developers access to all kinds of customization applications that allow developers to modify the source code and do not have to hack to get access to these things (Bell, 2015). This makes things easier especially to young developers to make a fresh start in developing mobile applications, so it has been proven that Android is the most suitable operating system among developers because of its flexibility.

Lastly, users choose iOS because of its strong ecosystem. Users find the need to use only apple products to be able to work on the Apple apps. Thus, users feel a sense of exclusivity and security, searching apps on racks in a one-stop online shop which fit their needs (Master Of Code Global, 2017). The vision and mission of Apple App Store are to "create a safe and trusted place" (Apple, 2020) for customers to browse and download apps. For example, Apple App Store strictly prohibits any app that features pornographic material, discriminatory references, torture and abuse,

or anything else in exceptionally poor taste. Therefore, users discover safe content to download (Apple, 2020).

However, when Apple App Store creates an ecosystem that only allows its own products to share the exclusive features, it stops users from cross-platform which is a disadvantage to a software developer because cross-platform has greater reach to the different OS users by developing one application that can run on different platforms simultaneously. Therefore, from a software developer's point of view, they tend to build cross-platform apps based on Android because it provides a huge potential audience of multiple OS for developer's apps (Developers, 2020). Since the iOS is an entirely closed system, this affects the design language used in iOS, which is different from the design language of Android and other OS to support cross-platform. Therefore, the apps that release to iOS can only be used on Apple products (Sinicki, 2019).

On the contrary, Android is an open system. Developers can create one application run on Android implies the same application can run on another OS, indirectly targeting multiple audience markets. This is because the features of Android such as Google Play Services are still possessed on smartphones that are based on different OS such as Windows (Bedford, 2020). For example, users can download Android apps using an Android emulator app if they are using Windows OS. Thus, this translates into a greater opportunity to form a substantial user base in a shorter amount of time with reduced marketing efforts because the apps can run on any OS except iOS (Salas, 2017). To reinforce this statement, according to App Annie, the Google Play Store received over 75 billion downloads, while the App Store recorded just slightly over 25 billion downloads during 2016 (Master Of Code Global, 2017). In general, developing apps running on Android can easily go viral because Android can support cross-platform.

In conclusion, there is clear evidence that the Android operating system is the more compatible operating system than Apple because it is an open source, more compatible with efficiency of security and stability, more affordable app development and able to support cross-platform. According to Statecounter (2020), the Android operating system is a more dominant platform than iOS at 37.81 per cent. With the advantages and improvements shown by the Android operating system to attract users to choose the platform as their top choice. This proves that many

developers want to develop the Android application and system because of many users. In comparison, the Android operating system is the best choice among developers rather than iOS.

References

Carey, S., & Macaulay, T. (2019, July 2). What are the advantages of open source software in the enterprise? Retrieved from: https://www.computerworld.com/article/3412269/what-are-the-advantages-of-open-source-software-in-the-enterprise-.html#slide5

BankMyCell (2020). How many smartphones are in the world? Retrieved from: https://www.bankmycell.com/blog/how-many-phones-are-in-the-world

Daria, R. (2018, June 21). iOS vs Android Development: Which One is Best for Your App? *iOS vs Android Development.* Retrieved from: https://rubygarage.org/blog/ios-vs-android-development

Srivastava, S. (2020, June 13). Advantages of iPhone Application Development for Your Business. Retrieved from:

https://appinventiv.com/blog/advantages-iphone-application-development-business/

Spencer, W. (n.d.). Reasons You Should Invest in Android Application Development. Retrieved from:
https://www.hokuapps.com/blogs/reasons-you-should-invest-in-android-application-development/

Developer (2016, September 13). 5 Advantages of Android App Development. Retrieved from:
https://medium.com/@developer45/5-advantages-of-android-app-development-f06c5a9283d1

Hodge, R. (2020, March 2). iOS 13 vs. Android 10: Which OS is more secure?. Retrieved from:
https://www.cnet.com/news/ios-13-vs-android-10-which-os-is-more-secure/

Shakhnazarova, N. (2019, August 11). APPLE is offering $1million (£830,000) to anyone who is able to hack an iPhone in a bold test of their security systems. *Phone and Gadgets*. Retrieved from:
https://www.thesun.co.uk/tech/9702079/apple-tim-cook-iphone-reward-hackers/

Porter, K. (n.d.). Android vs. iOS: Which is more secure? Retrieved from:
https://us.norton.com/internetsecurity-mobile-android-vs-ios-which-is-more-secure.html

Matellio (2019, May 17). What Are The Benefits Of Android App Development? Retrieved from:
https://www.matellio.com/blog/what-are-the-benefits-of-android-app-development/

Bell, K. (2015, July 17). App Store vs. Google Play: Is it time Apple stopped being a control freak?
Retrieved from:
https://www.cultofmac.com/329381/app-store-vs-google-play-is-it-time-apple-stopped-being-a-control-freak/

Master of Code Global (2017, May 24). App Store vs Google Play: Stores in Numbers. Retrieved from:
https://medium.com/master-of-code-global/app-store-vs-google-play-stores-in-numbers-fd5ba020c195

Developers (2020, June 22). Device compatibility overview. Retrieved from:
https://developer.android.com/guide/practices/compatibility

Worstall, T. (2012, August 31). The Problem With Apple's Closed Apps Universe. Retrieved from: https://www.forbes.com/sites/timworstall/2012/08/31/the-problem-with-apples-closed-apps-universe/#4f07daca794b

Sinicki, A. (2019, January 2). Cross-platform mobile development — challenges, options, and why you should consider it. Retrieved from: https://www.androidauthority.com/cross-platform-mobile-development-677913/

Bedford, M. (2020, January 21). How to run Android apps in Windows. Retrieved from: https://www.techadvisor.co.uk/how-to/google-android/how-run-android-apps-in-windows-3504642/

The Manifest (2018, February 22). Android vs iOS: Which Platform to Build Your App for First?/ Retrieved from: https://medium.com/@the_manifest/android-vs-ios-which-platform-to-build-your-app-for-first-22ea8996abe1

Salas, O. (2017, November 23). Benefits of Cross-Platform Development. Retrieved from: https://www.itexico.com/blog/benefits-of-cross-platform-development

Apple (2020, April 6). Download apps and games from the App Store. Retrieved from: https://support.apple.com/en-us/HT204266

Statecounter (2020). Operating System Market Share Worldwide - May 2020. Retrieved from: https://gs.statcounter.com/os-market-share