North South University

MidTerm Assignment

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Section: 1

Semester: Summer 2021

Course Code: CSE486

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"Answer to the Ques' No- 1"

A major government organization which has more than 50 thousand employees wants to give every employee a work phone for official communication. The official communication consist of emails, whatsapp Like chat softwares (video, audio, text). video and audio message will be share on a large scale basis. The phone will be capable of editing text documents (word processor) and reading pdf documents as a standard smart-phone. The organization will control the device remotly and want to ensure that no official communication are leaked

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If, i am an analyst in the Digital Security Agency (DSA). I would suggest the "Sailfish OS" Smartphone platform for device rollout.

There are other platform and operating system, but why i didn't suggest them for device rollout because ->

For Example, "KaiOS"; It is a proprietary closed-source derivative of Mozila's defunct ~~Firefo~~ FireFox OS ~~foo~~ for mobile devices The official communication will be email, whatsapp, chat software Like video, audio text. And the

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phone will be capable of editing text documents like word processor and reading pdf document as a standard smartphone which is the requirements of the orgnization. KaiOS has SDK tool for support external developers and has J2ME support. That means developer can develop external apps. KaiOS has it's own application store called Kai store with limited app ~~support~~. support. Thir partys application can be installed from the application store. the ~~orgina~~ organization requirements can be fullfilled by KaiOS. KaiOS is

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is a closed-source and light-weight operating system. We can customize the device. But KaiOS can't control device remotly and there is no user data security, so; official communication can be leaked.

On the other hand, the "MeeGo" operating system is an open source operating system which is used in windows phone. MeeGO's pre-decessor's were the ~~Maem~~ Maemo and moblin operating system project. MeeGo's UI is

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very user friendly. But MeeGo's brower doesn't have flash support; so watching videos and animation was difficult. It only supported a small number of application from MeeGo garage which is it's own apps store. It only had a small number of apps which were not useful for users. MeeGO OS does not have office document editing, which is needed in the organization. In the organization's requirement editing text document and reading pdf document also included which are not available in MeeGo OS. That's why MeeGO

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OS is not appropriate for the organization.

For the example of Smartphone The Apple's "IOS" operating system is a closed source operating system. The iOS developer kit is a tool for developing apps. Apple doesn't release their source code to their developers. Owners of iPhones and iPads are unable to change the code on their devices. Hackers will have a harder time finding vulnerabilities on iOS

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devices as a result of this. Apple's ios system has all the features needed for the organization. But for 50 thousand employees; it will be very costly for the organization to provide all employees with an ios mobile device. Although ios is safe but the organization can't control it remotly. That's why ios is not suitable for the organization.

Another smartphone platform is "Android". it's an open

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source platform for mobile devices. where developer can develop apps based on user living. The government organization reavirements can be fullfilled by the android phone; but we want to customi-ze our device only using some sort of application which is needed for official communication. If we give empo-yees an android device; they can install more apps from the Android app store because it's open source platform. Because of Android is an open source platform it's not fully secure. And the data

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of official communication can be leaked any time. So; For the safety issue ~~we~~ this is not suitable for the organization.

To control leaking data, we can use "Sailfish OS". It can be installed on any smartphone. It is a secure mobile operating system. It's widely use in corporate and governmental environments because of it's security. Those who are using Sailfish OS are more secure because their data is fully encrypted

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and apps are protected by Firejail sandboxing. Sailfish Os is an open source platform where developers can develop their applications with custom-er based on their requirm-ents. Sailfish Os also support a Android apps. The reauirments of government organization was that official communication will consist of email, whatsapp like chat software (video, audio, tex). video and audio message will be shared on a large scale basis and will be capable of editing text documents and reading pdf documents as a standard smartphone. As

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Sailfish Os developer develop their apps based on customer requirements. So, the organization can customize their apps and it's also can ensure users security with secure users data. Apps are the inseparable part of the mobile user experiance. User who use Sailfish Os to run attractive gesture-based native apps powered by Qt framework; can use it to run their favorite Android app in a safe sandbox. By Sailfish Os the organization can controlb the device remotly

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and can ensure official communication are not leaked

That's why as an analyst in the Digital Security Agency (DSA). I would like to suggest the organization to use the "Sailfish OS" on smartphone platform for device rollout.

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"Ans 'to the Ques' No-2"

If i am a mobile app developer my idea is for a home made food ordering service that serves as a platform for selling home-made breakfast, lunch and dinner products for working professionals. Users will be able to order food from both web and mobile platforms. As a idea picker, i don't have much money to hire many developers and only have money for only 3 ~~moth~~ months of development and ~~hize~~ hire 3 developers at best.

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I would Like to use a "cross platform" app development framework for rapid development at minimum cost and with less time with few developers. A cross-platform development framework is a set of tools where developers can develop apps for platforms such as Android, ios, windows, web and other with a single codebase. So; developers need to develop one app for multiple platforms. A single code can be reusable; that means a single code can be used for

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multiple platforms. Cross-Platform framework make it simpler to share an uniform user experiance (UI/UX) across many platforms. If a few developers develop one app for multiple platforms, the cost will be minimum and, also, there will be only one app developed, so little time is needed for development. Also, the app will reach a large number of users because of multiple platforms. And also it's easy to deploy and maintain.

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On the Other hand, "Native" App development is used for developing an app for a single platform. So; Native app development uses different apps for different platforms. Native App development also costly because if we want to develop for different platform for a single app; Like our app which is will be used on both web and mobile platforms. It's also time consumming because developers need to develop different app for different platforms.

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So; a separate team is needed for separate platform develo-pment. That's why for Native app development, more time and more people are needed. Code reusability is almost none. A single code works on a single platform. Native app development UI/UX design is specific and cannot be used on other platforms. And their targeted audience is limited because of the platform. Platform-based users is limited.

So; I would like to use the "cross-platform" development framework for my app

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development because I don't have much money for development to hire more developers and also don't have time to develop apps for multiple platforms.

There are so many cross-platforms but as our requirment we need a web and mobile platform for our app. So; I would like to discuss pros and cons of some cross-platform mobile app development framework which is fullfilled our requirement. Like, Reactive Native; Flutter; Codename One.

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React Native:

React Native is a cross-platform mobile app development framework designed by facebook. It's use for ios, Android, Mac, windows, and web Apps. React Native is built on Javasript. It's based on facebook javasript library react. It's best for simple app.

Pros:

React Native focus on UI. It allows developers to design a highly responsive UI. It's saves developers time because of it's rich variety of

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built in APIs and community driven components. In React Native; developer only have to code once. Apps can run on a variety of mobile OS platforms. including ios, Android with just one time coding. The Fast Refresh feature allows developer to see code change in real time. All of most popular third-party plugins. such as Google map are compatible with React Native.

Cons:

React Native is not trully

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cross-platform because the code is not fully reusable. It is depend on the complexity of the app. React Native is ~~incoss~~ inconsistent when it comes to releasing updates. React Native apps aren't well-optimized for speed and memory consumption.

Flutter:

Flutter is an open source and free cross-platform app development framework. Dart Programming language is used by Flutter to develop apps. It uses single codebase to develop apps for multiple platforms; including

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Android, ios, Mac, windows, Linux, and web.

Pros:

Flutter is a cross-platform app development framework that allows developer to develop apps that can run on multiple platforms with equal fluidity. Flutter is simple to ~~Fl~~ learn, build and debug, and it's fully compiled. Flutters comes with a built in graphic engine. That's why developers don't need to make ~~sp~~ separate UI for Android and ios. This

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Framework makes use of the GPU to provide UI power. As a result, working on the most latest interface becomes easier for developers. Developer can write more structured programming codes using the Dart language. As a results, even when developing complex apps, maintaining synchronized hierarchical structures is simple. Flutter developer can see modification in code in real time because of HOT - Reload feature. Developers can quickly and easily rebuild a widget tree and understand the modifications.

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Flutter apps performance is fast and also better than the apps which are built in other cross platforms.

Cons:

The Hot-Reload feature is only available for Dart language. Dart is less popular programming language. Flutter is good choice for MVPs and small business. The Flutter ~~app~~ is still in its initial stages and there are few amount of expertise in this field. Apps developed

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in Flutter are often large in size.

Codename One:

Codename One is an open source cross platform app development for native apps for Android, ios, Desktop and web. It's main feature is that it gives developer full access to the native platform, allow them to reign native code straign from Java or Kotlin and take use of all the native ~~modified~~ mobile platform has to provide.

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Pros:

The code can be reuse fully. Codename one support write One Run Anywhere (WORA) without any hardware reqvire-ments. Plugin for major IDEs such as IntellJ/IDEA, NetBeans and Eclipse are availabe in Codename one. The fully portable Drag and Drops GUI builder makes it simple to use. The build server, on the other hand develops native apps for the developers without having to deal with all of the complexity of developing a native app for each platform. Codename

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One can be easily expanded by using third-party libraries that contain native Os code. Codename one code is converted to native code or the native VM, that's why it's perform Like native.

Cons:

The graphic user interface of codename one does not meet the needs of large projects, and the visual themes are not updated. The development phase is difficult since all event handlers are sorted in single file.

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From the above discussion, I could like to choose "Flutter" as our development platform.

We can't choose "React Native" because its code it is not fully reusable and also not well-optimized for speed and money consumption.

We can't choose "codename one" because its graphic user interface does not meet the requirement of large project and its visual themes are not updated.

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Our idea is for a home made food ordering service that serves as a platform for selling home made breakfast, lunch and dinner products for working professional. User will be able to order food from both web and mobile platforms. and i don't have much money, time and also developers. Flutter is well known for better performance from other apps which are built in other cross platforms. This framework make use of the GPU to provide UI Power. Because of the built in graphic engine, developer don't

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need to make separate UI for Android and ios. Developer can see modifications in code in real time in Flutter. Developer can easily and quickly rebuild a widget tree and understand the modification of the code. Thats why developing an app in Flatter will be easier and also need less time, less money and fewer developers with better performance. App will be give better performance which fully meets my requirements to choose Flutter for developing

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the app which can perfome multiple platforms and also need little time to develope with less money and hire ~~less~~ fewer developers, and also performe well.