**Platform comparison** [1]

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| --- | --- | --- |
| OS Platform  Factors | Desktop platform | Mobile devices |
| Portability | A Desktop is restricted to a local area while the while the laptop is normally less mobile than a mobile phone. | Due the small form factor, mobile devices such as smart phones and tablets are more portable compared to desktop platforms. |
| Connectivity | A desktop environment normally has built in WIFI and Ethernet connectivity. | A mobile device comes with a WIFI connectivity but lacs Ethernet connectivity. One the positive side mobile devices comes with cellular data connectivity. |
| Operating System | Desktop environment may have large verity of hardware and there are compatibility issues when OS tries to interact with hardware. | Mobile OS is mostly Android, IOS and Windows Mobile normally have fixed hardware. |
| Cost | Desktops and laptops have larger capacity and better processing capabilities compared to mobile devises hence they are generally more expensive. | Mobile devices are generally less expensive. |

From the above comparison, we can see that mobile devises have better portability and lowcost factor which makes it an ideal platform for user to reference document on the go. The user will also find mobile devices a cheaper option compared to desktop.

**Mobile OS Comparison** [2]

|  |  |  |  |
| --- | --- | --- | --- |
| OS Platform  Factors | Android | IOS | Windows |
| Downloadable Apps and Apps Market | - **Google Play**  - Nowadays, Google Play have dominated in the application market due to convenience of App approval process  - Google Play is well integrated with Google’s Applications such as Gmail, **Google Maps**, Google Drive and so on. | - **App Store**  - In the Initial Period of App Market, App Store dominated in the application market. | - **Window Store**  - Most of popular Applications are already in the market. But the update speed is slower than Android and IOS.  -It is available to unify the application between Desktop such as Windows 10 and Mobile Devices. |
| OS Platform’s Features | - **Samsung Flow**: version is still Beta version  - Hangout  - Google Fit  - Have Wide Range of available devices (Mobile phone, tablets and wearable devices such as smart watches). Not only Samsung but also google and so on. | - Devices based on IOS can be synchronized between Apple Devices.  - iMessage  - Apple Health  - IOS is only limited into Apple own devices such as MAC.  - Most of the devices based on IOS have **expensive cost** among 3 OS. | **Continuum**: plug mobile device into the Monitor with Keyboard and Mouse then get the interface such as Desktop. Thus use the phone like PC.  - Skype  - Microsoft Health |
| Virtual Assistance | - **Google Now**  - Google Now opens its API to developers who can use it for operating or referencing other apps  - **Picture Recognition**: It is available to offer information by input screenshot or picture | - **Siri**  - Siri has **accurate understanding** compared as Google now  - But the information area by Siri is limited  For example, Playing music, setting timer or alarm and so on. | - **Cortana**  - It is the latest virtual Assistance in Windows at 2015  - Bing Search, Music Recognition  - Still need to be uploaded about features compared as the Android and Siri |
| Security | - Android is based on **Open Source Code**  - Easy to submit the Application into Google Play with cheap submission fee compared as the App Store  - it has reinforced security in Google Play store after stagefright attack in 2015  - Direct booting which allows application to begin with the lower layer in mobile devices  - File Encryption which allows protecting the personal data in devices.  - Because the wide range of devices is available in Android OS, compared as the other OS platforms, it is vulnerable from malicious attack and Not whole Android OS platform is updated at the same time.  - | - requires only use Apple’s own devices.  - App Store requires signature and checking from Apple Before submit Application into App store.  - using secure encrypted channel when upload/update apps  - Like Android, IOS is one of the OS that a lot of users use in nowadays. Thus There are probabilities attacked from malicious third party. | - Like IOS, Window store has strict app submission process  - Device Encryption based on the local contents  - Easy to integrated apps between PC and mobile devices  - **Microsoft passport**: strong authentication process to access to resources.  - **Device Guard**: protect data from malicious programs  - **Microsoft Enterprise Mobility**: focus on Security Session with ATA(Advanced Threat Analytics)  - One of the Problems in Windows store is small market compared as Android and IOS. Thus it has a probability to being attacked in the future. And also lack of features in the markets. |
| Biometric Security | - **Fingerprint sensor technology** after IOS  - lyrics pattern recognition technology from Galaxy Note 7 in Samsung | - IOS is the **FIRST** OS which released **Fingerprint sensor technology** in the devices. | - **Windows Hello**: Authentication to sign in Windows 10 devices securely. (Surface Pro 4, Surface Book, most PCs) with fingerprint readers or Face recognition always work. |

After considering the above comparison between different OS platforms we have decided to go ahead Android as it has the largest market share [3] and cross platform option does not achieve the same performance level as natively build apps [4].

**Database Software Comparison** [4]

|  |  |  |  |
| --- | --- | --- | --- |
| DB Platform  Facotrs | Oracle SQL | MsSQL | SQLite |
| Developers | Oracle | Microsoft | Dwayne Richard Hipp |
| License | Commercial | Commercial | Open-Source |
| Cost | Total (per Processor):  Around $5,999 - $21,350 | Free (Limited entry level database) - $14,256 ++ | Free |
| Supported Programming Languages in Database | C++, Visual Basic, Python, R, PHP, JavaScript(Node.js), Ruby, Go, Java | C/C++/C#/Objective C, Visual Basic, Python, R, PHP, javaScript (Node.js), Ruby, Java, Perl, Scala, Clojure, Cobol, Delphi, Erlang, Eiffel, Fortran, Haskell, Tcl, OCaml, Lisp, Groovy | C/C++/C#/Objective C, Visual Basic, Python, R, PHP, javaScript (Node.js), Actionscript, Ruby, Java, Perl, Scala, Clojure, Cobol, Delphi, Erlang, Eiffel, Fortran, Haskell, Tcl, OCaml, Lisp, forth, D, Ada, Basic, MatLab, Lua, PL/SQL, Smalltalk, Scheme |
| Server-sides and stored procedures | exchanges SQL and .NET languages | PL/SQL | Nothing. SQLite is not for server sides database software. Usually used to store data into internal devices |
| Supporting XML | Support XML format or data structures | Like MsSql, Support XML format or structures | No XML support |
| Common Features | Support the features of Foreign keys, Durability, Concurrency, SQL standard, Data Scheme (In the case of SQLite, it also support dynamic data scheme) and so on. | | |

SQLite being a server less database makes it ideal for developing a standalone application.