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|  | Windows | Linux | Mac | Mobile |
| Server Side | **Characteristics**:  Well-developed, open-sourced, mature, prevalent use, supports different add-ins and third-party applications  **Advantage**: compatible with most if not all browsers and web applications. Optimization can be easily executed  **Weakness**: vulnerable to cyber-attacks. Usually requires aid from other applications to protect user data from hackers  Server-based deployment is offered, and servers can be built or purchased.  Cost of licensing is usually cheaper than other systems and different options are offered (e.g. cloud server, local server, etc.) | **Characteristics**: open-sourced sandbox environment. Widely adopted by businesses  **Advantage**: usually controlled by intranet that ensures security and safety of user data  **Weakness**: high learning cost. If hackers break into any single system, then the entire intranet system will become fragile  Server-based deployment is usually offered, and servers can be established locally  Cost of licensing is a group purchasing cost and varies depending on the size of the group. Business can choose to establish a local server that stores all data or to hire a third-party server | **Characteristics**: strictly regulated system update, application installation, and username and password management  **Advantage**: highly secured because of the non-open-source nature of the system. Easy recovery of lost username and password from Apple server  **Weakness**: Too many restrictions to prevent more and more applications from being published. Certain unpartnered add-ins might not function properly  Server-based deployment is offered, and servers can be built or purchased.  Cost of licensing is usually high because of the high requirement of Apple’s publishment policy. | **Characteristics**: the same application might be running different on different mobile devices based on their model and operating system  **Advantage**: easy access for users and server to login or recover account. Usually a multi-factor authentication system can be built in to ensure safety  **Weakness**: optimization is a big problem become different devices have different handling abilities and different add-ins. For example, an application that is running smoothly on Android 9.0 might become really buggy on Android 4.0  Server-based deployment is usually not offered and servers are either purchased or built upon other local or cloud servers  Cost of licensing varies depending on the platform, but is generally lower than other computer operating systems. |
| Client Side | Optimization is usually not a big issue because Windows system has been widely adopted and become mature enough. Glitches could be seen whenever there is a big update (from Windows 10 to Windows 11), but these bugs will be quickly fixed with the supplemental patches.  Cost and time when developing software are at average compared to other operating platforms. Expertise needed is usually some of the computer languages (HTML, CSS, Javascript, etc.) | Designs and furnishments are not usually major considerations in a Linux system since its main focus is efficiency and productivity. Since it is mainly open to intranet, cost, time and expertise could all be controlled within the same business. A universal authentication system within the business will be required to build in to ensure security | Compatibility is usually an issue with Apple systems because some of the features commonly seen in Windows are not supported by Apple. For example, Windows supported flash in its browsers, while Apple also supported HTML. Cost and time when developing software are much higher than other platforms because compatibilities need to be taken care of. Multi-disciplinary expertise will be needed to develop any software to ensure maximal security and functionality | Optimization and compatibility are the two big issues with mobile platforms. With Android, different phones have different processors and with different levels of Android system, different screen sizes, and the functionalities they have are also different. iOS are comparably better with their processors, but different software updates and their supporting models reflect that some of the older version of phones, similar with old Android phones, will be neglected when developing new software. Therefore, when developing an Android or iOS application, cost, time and expertise will require some high numbers but not so high because the older versions can be abandoned |
| Development Tools | Different development tools can be used. Some examples are Java IDE, Angular, C#, etc. When developing a software, a multi-disciplinary team will be required to combine different knowledge and data files together. This could result in higher cost of software development, but due to the gradual saturation of the market and the existence of multi-disciplinary individuals teams, this cost will gradually go down | The main development tool utilized is C. A multi-disciplinary team is usually not required because the developed software is usually used within the same business. More security features could be added to ensure system integrity. The cost of development is limited | The main development tool utilized is swift. A multi-disciplinary team is usually not needed but a QA team is usually required to make sure the application can be passed by the Apple app store. The cost of development is usually high because a single application might need to be modified several times in order to be passed | Similar to Windows, different development tools can be used on mobile devices. Some examples are Java IDE and Kotlin. Multi-disciplinary team will be required to combine different files together. The cost of development is usually low with Android system because any application is a easy-pass unless there exists security issues, and high with iOS system because of the low passing rate |