WEB OPERATING SYSTEM NOT REPLACEMENT OF TRADITIONAL OPERATING SYSTEM BUT COMPLEMENT TO EACH OTHER

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ABSTRACT

The Web Operating System (Web0S) is a new generation of traditional Operating System (TOS) that used to facilitate and develop the frameworks of new paradigm by Internet facility instead of being fixed to a particular machine (locality) limited. It's an internet facility which a user able to easily access to own data remotely wherever by any computer also in any part of worldwide were internet is available. Web0S or virtual Desktop or WEBtop is a new form of computing known as cloud computing and globally distributed that can help us to design web based operating systems and basically an OS in a web browser. Furthermore, Web0S is providing several functionalities of a TOS over internet depending on the requirements of the information communication technologies (ICT). Our proposed Web0S is designed by the web technology example is a Cross platform, Apache, MySQL, PHP (XAMPP) and investigated over two different types of cloud computing namely (PriN)- Wireless LAN-intranet and Public network (PubN)- Internet. The Private Web0S (PrWeb0S) tested over a Wireless local area network (WLAN) and Net-Centric computer .The public Web OS (PuWeb0S). The size of users decided to use PrWeb0S- wireless LAN or PuWeb0S network (PubN)- Internet by the both two very common types of Web OS examples namely eye0S and Lucid which are designed by XAMPP and tested them over PriN-intranet and Pub-interne, In online, "it has an internet on computer. So, webOS is computer on the internet". But In a private "it has a WLAN on computer. So, web0S is computer on the intranet. Web0S is exactly imitating interface of a TOS, even Web OS doesn't act together directly with the computer's hardware, but the client computer must still have a TOS. Nevertheless, the popularity of Web OS is much more economic because it is to reduce the hardware and software costs significantly. The proposed webOS duties are storing huge amount of user data in a very basic way with simple interface. User can share files, listen to music, read news and can do many other stuff depending upon the diversity and richness of the web OS used by the user Finally Web0S is not replacement of TOS but it is an enhancement of TOS by Web0S.

Keywords: Cloud computing, Web0s, TOS, OS

INTRODUCTION

Since Server operating system (SOS)[MS16] and Web operating system (Web0S) [VBEYACD97] are structure to enables a new paradigm for/by the Internet facilities as a middleware over any types of networked communicates client server based. The networked communication type's examples are private network (PriN)-Wireless LAN and Public network (PubN) [FASNN15]. Our proposed system is mainly concentrated on the Private Web0S and Public Web0S. The use of software without installation in any personal computer (PC) is miracle because cloud computing makes it possible in digitalized today's world. It saves the memory both primary and secondary in your computer because data is on centralized data center located outside your own place [JDY11], The attractive of Web0S is Instead of being fixed to a single location for example PC the services can dynamically organize responsibilities onto Internet computing resources-client. The term of Web0S is a software platform that interacts with the user through a web browser and does not depend on any particular [Sha13] traditional operating system (TOS). In everyday life, people must often rely on computer to sort out most of daily activities. It's impossible any computer work without software-TOS. The locally installed operating system in a single computer is called TOS; the weakness of TOS is due to its availability (i.e., it is limited locally, and doesn't have high level of availability is available on only one computer).

While the utilization of www and the Internet over networks were rapidly growing, the TOS become Web0S and its advantages of locality OS desktop Services can dynamically work onto Internet computing resources. Cloud computing [Son04] concept popularity is return to several factors which are:

1- Increasing of high-speed and better availability of Internet technologies; during the past few years.

2- In cloud computing users work with Web-based (Web0S) rather than local (TOS), storage and software

Web Operating System (WOS) is not a replacement of TOS [SSK15]. However TOS and WOS complement each other.It's impossible any computer work without OS. OS is a special kind of program that organizes and controls computer hardware and software. Operating systems interact directly with computer hardware and serve as a platform for other applications. Whether it's Windows, Linux, UNIX or MacOS, computer depends on its OS to function. But, A Web0S is a user interface (UI) that allows people to Access applications stored completely or in part on the Web [SSK15]. The OS of WOS that installed in server is a main, but the TOS that connect to WOS via internet is a secondary OS. Nowadays, the hot topic that rapidly grows and become very popular in the subject area of OS is a Web or WOS. The implementation of WOS is built on the Internet facility and distributed computing. The objective of this Web0S is to deliver the full benefit of the World Wide Web. The Web0S include mechanisms for persistent storage, remote process execution, client management, authentication and security [Tri14].

As the dependency on web services increases, the need to assess characteristics with quality of website (QoW) and success increases. Websites characteristics are importan. The expectation of our proposed system results tests will be very clear and show that there is a direct relation between the general dimension criteria for measurement evaluating are and QoW. The dimensions of the criteria are content quality, design quality, Organization quality, and user-friendly quality. These dimensions together with their comprehensive indicators and check list can be used by web designers and developers to create quality websites to improve the electronic service [HA11]. One of the Web0S type is Lucid Desktop (formerly known as the Psych Desktop) is built on a base of PHP5 and is a prosumer-oriented web desktop service. This desktop can be installed on to a web server like Eye0S, and is remarkably simple to use [Sha13]. Nevertheless, the eye0S is an open source web desktop following the cloud computing concept it is mainly written in PHP, HTML, and CSS. It acts as a platform for web applications written using the eye0S Toolkit. It includes a Desktop environment with applications and system utilities. It is accessible by portable devices via its mobile front end. The examples of portable devices for our proposed system front end are smart phone, iPad and mobile. The new contribution is to investigation for better performance between methods namely (PrWeb0S) - Wireless LAN and Public network (PuWeb0S). The ability of smart phone PrWeb0S-wireless is much better than the smart phone PuWeb0S-Wireless (i.e. the results will be show in the following section namely Results). Generally both public and private Web0S are parts of cloud computing. The services provided by a public cloud are offered over the Internet and are owned and operated by a cloud provider. Some examples include services aimed at the general public, such as online photo storage services, e-mail services, or social networking sites and services for enterprises can also be offered in a public cloud. Nevertheless In a private cloud, the cloud infrastructure is operated solely for a specific organization, and is managed by the organization or a third party [The16]. The cloud has three forms of models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). In SaaS, the user uses the collections of application running in the cloud. While in PaaS the user use the tools provided by the platform from classes libraries and other language supports. However, the user has control over the operating system and the application deployed in the IaaS with changing the Infrastructure components and configurations [Abu14]. Our proposed system consternate on IaaS type of Cloud computing because the operating system is a infrastructure and it’s as same as OS. Web0S is mainly focused on enabling different kinds of phone calls, messaging services, settings and device information, multitasking, and synchronizing phone book data and other virtual resources [ST11]. Finally, the Web0S is one of cloud computing implementation [Tri14] and also its one of the most recent and hot computer science topic by ICT. Web0S is presented for cloud computing and it is potential assessed when compared with TOS and Web0S types for example; Eye0S and Lucid over private and public Web0S. The proposed system designed by Web technology XAMPP with the database backend-MYSQL, Middleware with PHP, and Frontend- Html.

METHODS OF WEB0S:

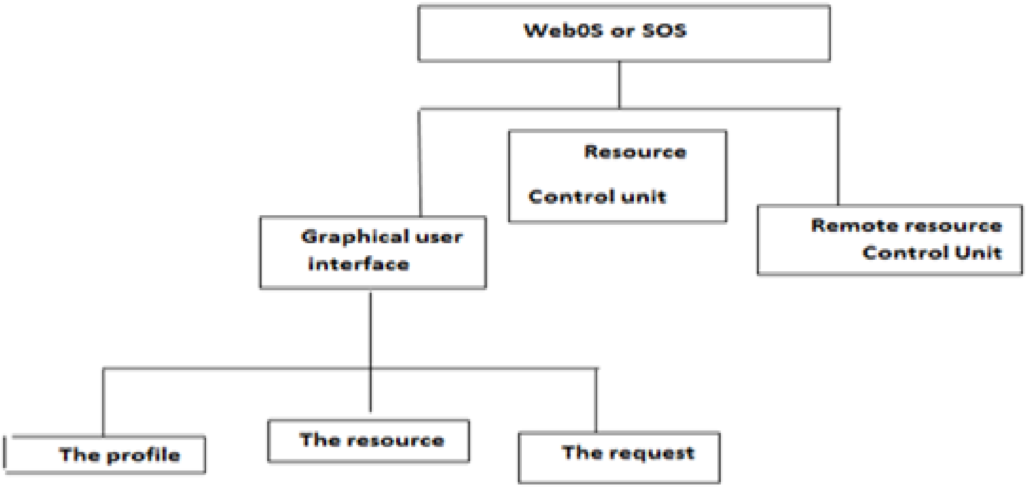
Before Internet revolution [FASNN15], TOS were in the traditional style and TOS were in a very low stage if compared to innovative version of OS namely Web0S. The unavailability, poor Q0S and locality of TOS is return to the very primitive communication facilities. At that time the only way to install OS was traditionally and very limited (i.e. each computer 100% relay to own OS), however our proposed Web0S provide all the facilities and more UI is exactly similar to the traditional OS as a features of multitasking and multiuser methods. The users can use different application in a same time and it’s a multitasking method that we conceder in our proposed system. The multitasking is running more application in a same time in a server-XAMPP. Both PrWeb0S and PuWeb0S are multiuser methods due to several of users can connected to Web0S server in a same time in different methods and different application. The Cloud users are an interface that is user-friendly more straightforward and more efficiency [CPWYCH12]. Nevertheless, the increasing use of high-speed Internet technologies, the concept of cloud computing has become more popular. Especially in this economy, cloud services can provide speed, efficiencies and cost savings. In cloud computing users are work with Web-based, rather than local, storage and software [KM13].The cost saving meaning is that the users not need to buy extra software and hardware.Web0S consists, resource control unit which processes user request and finally a remote resource control unit which manages requests passed from other nodes. The Figure (1) shows the three main components of WebOs.

There are three major components of Web0S which are:-

1- Graphical user interface (GUI): Provides an interface or a means by which the user interact with the system and it’s divided into three parts, the profile editor, the resource editor and the request menu, resources are described through a profile .the profile editor helps the user to generated new profile of resources he wants to make available for other users .the resource editor provides means by which resources can be selected and used. The third part of the GUI, the request menu, provides an easy –to- use interface to resources of the Web0S Net [KA05].

2- Rresource control unit(RCU): Accepts service request from the user interface and contacts several known warehouse to find W0s node, where the requested service can be executed. the first thing that happens is that the local warehouse is contacted ,there other known warehouse in the W0sNet .if an answer is found the RCU asks for the service execution and returns the result to the user .after successful execution ,the local warehouse are update [KA05].

3- Remote resource control unit (RRC): Accepts service request from other W0s nodes and examines whether the execution is allowed or not, therefore the resource warehouse is successes .the RRCU transmits the answer to the client-side RCU, the service execution itself is also managed by the RRCU, which contacts the resource warehouse a second time to verify access rights. After that, the service is executed and the result is passed to the client – side RCU [KA05].



The Figure (1) shows the three main components of Web0S

TOS AND WEBOS

Before Internet revolution, the traditional operating system (TOS) categories were in the traditional style; therefore the performances, quality of services and other factories were in a very low stage. The first known web-based operating system that provided a platform that enabled user to benefit from computational potential of the web. Web0S provided users with plenty of tools through using a virtual desktop using the notion of distributed computing by replicating its services between multiple interacting nodes to manipulate user requests. One of the hottest topics that emerged these days between the area of Internet and distrusted computing and the area of operating system is Web0s. The objective of Web0s is to deliver the full benefit of the World Wide Web(WWW).

The Web0s will support geographically distributed, highly available, incrementally scalable, and dynamically reconfiguring applications. Web0s will include mechanisms for resource discovery, resource collaboration, persistent storage, remote process execution, resource management, authentication and security [MS02]. As a results from the preview ideas any attempt to design one single OS offering a fixed set of resource management function will have difficulty adapting to technological innovation or to new demands .therefore , there is such are proposed in, a need for a Web0s, which would make available to all sites on the network , the resource available on that network or at least a reasonable subset thereof , to effect computation for which local resources are missing, these resources could be of many forms including processor speed, available memory or storage space , available operating systems or application , and so on [KPU97]. From our experience:

1) TOS is a platform for software and hardware or it's a program that act as in-between (i.e. users of computers and hardware's computer). However, the Web0s is a computer of the internet or an internet service through which a user can access to a computer data remotely anywhere, anytime, any computer, (any OS i.e. windows, Linux) as long as the internet facility is available.

2) input, output and memory allocation in TOS are directly executed by the hardware, but in Web0s the input, output and memory allocation are not depend on special hardware for executing (i.e. impossible to achieve any activity in online Web0S. The directly interact of TOS with computer hardware and serve as a platform for any other application, but web0s may be consider being similar to the user interface of TOS for example windows and Linux but it doesn't interacted with any computer hardware resources.

3) the originally of TOS is to develop and provide a set of common system service and switches between hardware, central processor unit (CPU), hard drive and peripherals; but Web0s referees a delivery of computer resources over the internet instead of keeping data on your on hard drive or updating application for your needs. Thus, No needs of Backup any more for Web0s.

4) Due to the globalized of web0S the CPU scheduling types are impossible, but they are very common and important in TOS. The types of CPU scheduling in TOS are first in first out (FIFO), first short job (FSJ) and round Rubin (RR) method.

5) Scheduler simulation waiting queue in TOS is very common and Figure (2) shows the scheduler simulation waiting queue in TOS. But it is no waiting queue in web0S especially in the private web0S as shown in Figure (2 A&B). There are more differences between TOS and Web0S. There are lots of compares between TOS and Web0s. The TOS is still very useful because it's impossible to achieve any activity without the TOS; thus the Web0s is not replacement of TOS but both is complementing each other's. All previews compares are show that the Web0s is much better than TOS but it's impossible to ignore the TOS. The old day Life without cloud computing: Traditional businesses (TBiz) by applications were very complex and costly. The amount and variety of hardware and software required to run them are daunting. You need a whole team of experts to install, configure, test, run, secure, and update them. When you multiply this effort across dozens or hundreds of applications, it's easy to see why the biggest companies with the best IT departments aren't getting the apps they need. Small and mid-sized businesses don't stand a chance [TB11]. In order to design any Web0s it is still necessary to rely on TOS. There should be more compare between Web0s and TOS but the most important for our proposed system evaluation is those compares that directly return to the OS (i.e. windows, Linux) and web (i.e. technologies, methods, middleware, web browser).

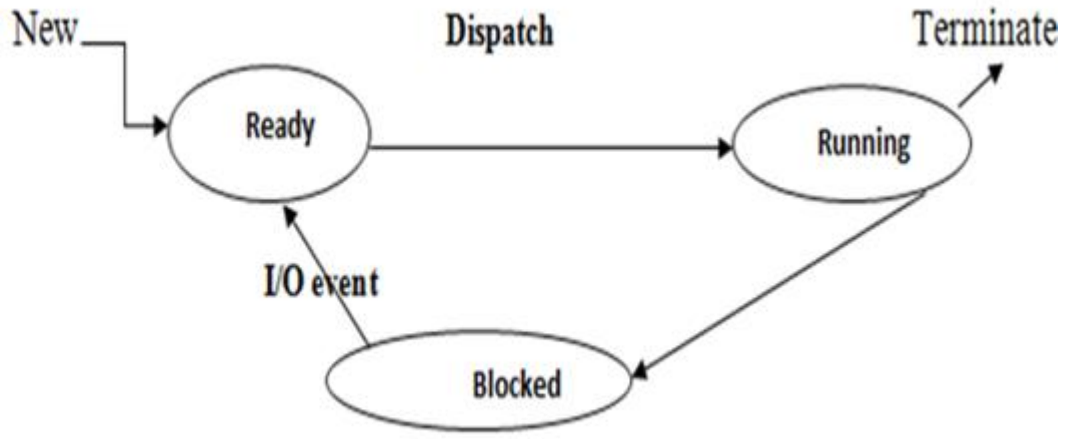

New
Dispatch
Terminate
Ready
Running
I/O event
Blocked

Figure (2.) Scheduler simulation waiting queue in TOS

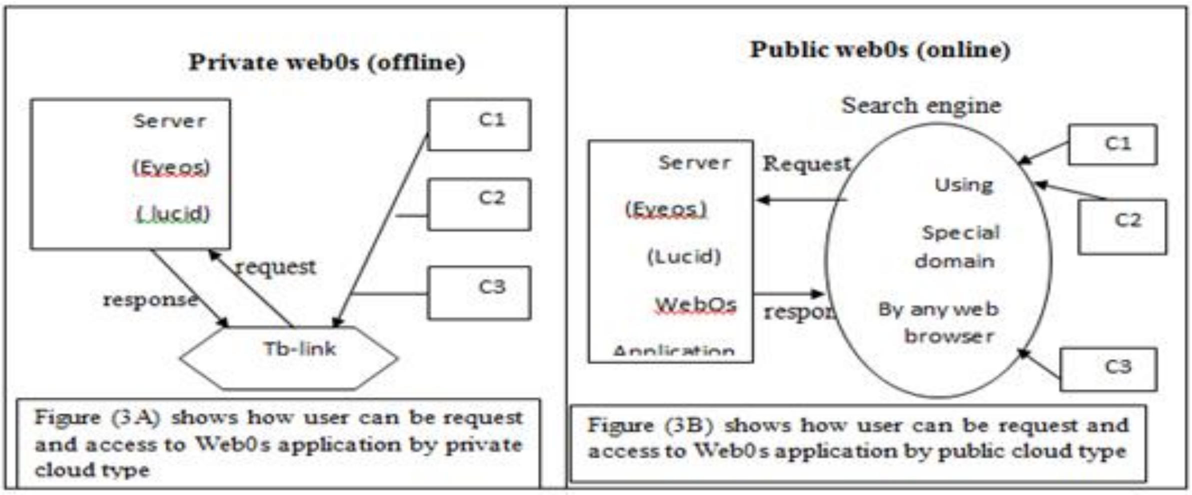

Private web0s (offline)
Server
(Eyeos)
(Lucid)
request
response
Tb-link
C1
C2
C3
Public web0s (online)
Search engine
Server
(Eyeos)
(Lucid)
WebOs
Application
Request
respon
Using
Special
domain
By any web
browser
C1
C2
C3

Figure (3A) shows how user can be request and access to Web0s application by private cloud type

Figure (3B) shows how user can be request and access to Web0s application by public cloud type

RESULTS AND DISCUSSION

As mentioned in the previews section, the Web0S over two different platforms namely Windows OS and Linux OS are tested by PHP Benchmark Scripts for the reason of finding total time and total executing time. The windows operating system: total time is 14.008 seconds and total executing time is 14.4.

Table1 show the Windows operating system PHP benchmark script test

Nonetheless the Linux operating system: total time is 3.08 seconds but total execute time is 3.6 seconds. Table 2 show the Linux operating system PHP benchmark script test. Finally, there are two different types of tests for each platform, the compare between them shows that Linux OS needs less time than the windows. Finally, the all outcomes from the system provide an excellent suggestion to become conscious that cooperation between three parts, namely internet, distributed computer system, and operating system makes Web0S enhanced because the Web0S is a perfect intermediate between three parts. Figure4 elucidate the improvement of election strategy.

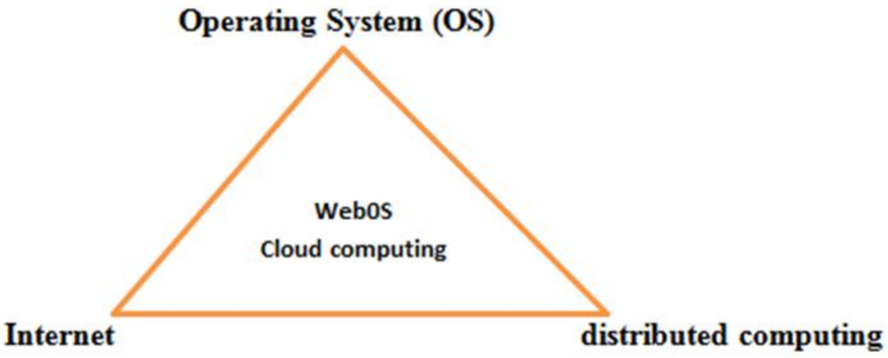
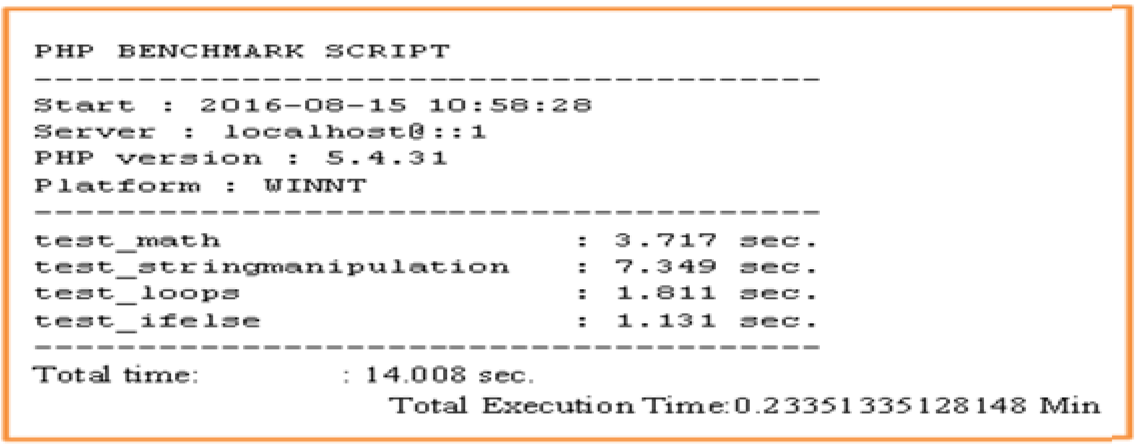


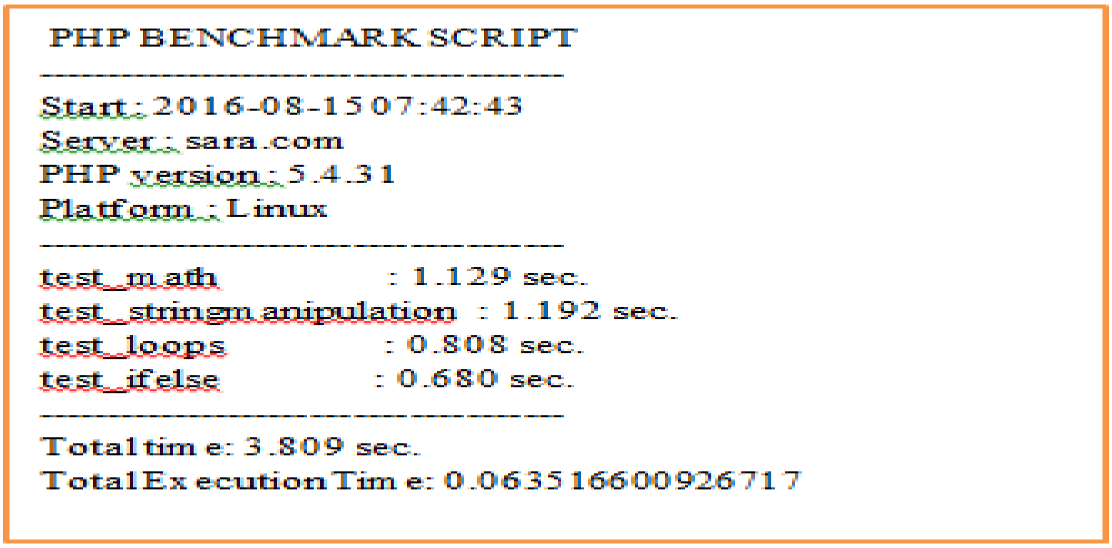
Figure 4 elucidate the improvement of election strategy

Table 1. Showing the Windows operating system PHP benchmark script test



```
PHP BENCHMARK SCRIPT
--------------------------------------
Start : 2016-08-15 10:58:28
Server : localhost@::1
PHP version : 5.4.31
Platform : WINNT
--------------------------------------
test_math                      : 3.717 sec.
test_stringmanipulation        : 7.349 sec.
test_loops                     : 1.811 sec.
test_ifelse                    : 1.131 sec.
--------------------------------------
Total time:             : 14.008 sec.
                 Total Execution Time:0.23351335128148 Min
```

Table 2. Showing the Linux operating system PHP benchmark script test



```
PHP BENCHMARK SCRIPT
--------------------------------------
Start : 2016-08-15 07:42:43
Server : sara.com
PHP version : 5.4.31
Platform : Linux
--------------------------------------
test_math               : 1.129 sec.
test_stringmanipulation : 1.192 sec.
test_loops              : 0.808 sec.
test_ifelse             : 0.680 sec.
--------------------------------------
Total time: 3.809 sec.
Total Execution Time: 0.063516600926717
```

CONCLUSION

Since the Web0s designed by XAMPP and it is easy to handle and the designed proposed system make more attractive for computer users. The different operating systems are used as a platform for our proposed Web0s. The best to handle is Linux operating system because it is saving time, money and effort . also Linux is much more secure than Windows

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