An Exploration of Application Types

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Introduction

Software applications are all written with very different purposes in mind, as the particular audience of interest, the user, has varying requirements at different times[1]. It is clear, therefore, that the purpose of an application, and consequently its type, affects how the program is written[2]. It is therefore in one's best interest to have knowledge of as well as discernment between the various application types. To this end, therefore, the aim of this essay is to name and describe these various types of applications that exist, and to provide the contexts in which these categories of applications are utilised. However, it would be of use to begin this discussion with an explanation of what the concept of an application actually entails.

An application is fundamentally a "program or group of programs designed for end users"[3], specifically, to help these end users to perform very specific tasks[4]. Application software requires the operating system as well as other system software to run, as system software conceptually provides a platform on which application software can run on the physical hardware layer of the computer or mobile device by managing the hardware[5]. The system software essentially serves the application software in order that the application software can perform its function effectively.

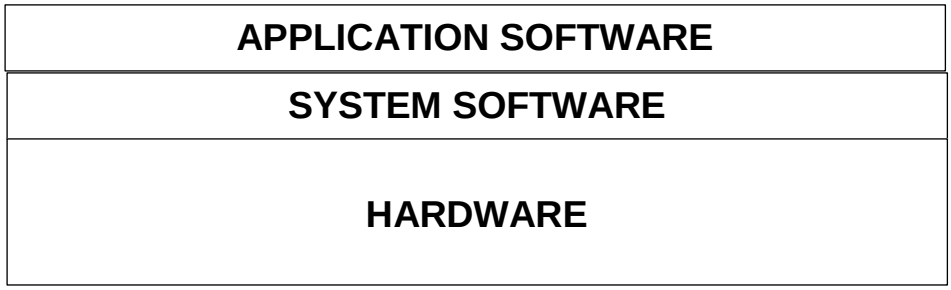

Fig1: Conceptual level of application software

In light of the essence of application software that has been explored until this juncture, we shall now move on to the task of discussing the various types of application software.

[1] Barnett, R (2012)
[2] Barnett, R (2012)
[3] Webopedia (2012
[4] Wikipedia (2012)
[5] Webopedia (2012

Desktop Applications

The first collection of applications under scrutiny is the most familiar in the sense that the concept is accessible to anyone who has ever made use of a computer, and that is desktop applications. Desktop applications, therefore, are those software applications which run as stand-alone entities on a desktop computer or notebook[6]. They are stand-alone in the sense that they are not confined to operate on top of the architecture of another application other than the system software. This collection of applications includes software such as word processors, mail clients, Internet browsers, self-standing games, image editors and music players, as well as many others.

Therefore, desktop applications are only used in the context of desktop computers or notebooks (as opposed to mobile applications) and only when the application does not require additional software to run on top of, although desktop software can make use of other applications to provide additional functionality.

Mobile Applications

Having gained an understanding of desktop applications, the concept of a mobile application is relatively easy to grasp. A mobile application is also often stand-alone in the sense that it does not always in a browser or within another software environment, but is different in that it is confined to portable devices such as smartphones or PDA's and is thus drastically downscaled in order to comply with processing and space requirements[7]. Additionally, mobile applications often lend themselves to running as web applications, as they frequently connect to Internet services in order to gain information relevant to the mobile device such as supplementing GPS information or sending game scores to a top ten board[8]. Mobile applications are often written for similar purposes to that of desktop applications, and one can often expect to find a mobile version of a desktop application available for purchase or download. Mobile applications thus also include applications such as mobile browsers, games, productivity applications and text processors.

[6] PCMag (2012)
[7] PCMag (2012)
[8] Webopedia (2012)

Therefore, mobile applications are solely used in the context of mobile devices, though they are often developed and tested on desktop computers before deployment[9]. It is used when the application in question is designed expressly for the experience delivered by a mobile device, or when desktop applications are extended to mobile devices for portability. This has the effect of blurring the boundary between mobile and web applications, as these applications often fall into both categories.

Tablet Applications

This particular suite of applications is the newest in the sense that the architecture on which it is built has only recently become commonplace among consumers. Tablet applications, like mobile applications, only run on portable devices, but specifically those of a particular kind. These devices are known as tablets, and differ from other devices in that they are significantly larger, in some ways resembling a small notebook. However, input is usually performed by means of a touch screen with or without a stylus as opposed to a keyboard or keypad[10]. Common vendors include Apple (iPad), Android (Samsung Galaxy Note), and Blackberry (PlayBook). Conversely to other platforms, tablet application development is governed by a "walled garden" approach, where vendors strictly reserve the right as to what can be installed or developed for their devices, charging substantial fees to acquire these rights[11].

Therefore, tablet applications are confined to the context of tablet devices such as the iPad, and development and deployment of such applications is rigorously controlled. However, it is a fast-emerging field of development, these applications lend themselves extremely well to portability and ease of interface, as they boast the larger screen size formerly endemic to notebooks, but are also small and light enough to be truly portable.

Web Applications

This particular set of applications has already been alluded to in the previous sections as consisting of applications that are not stand-alone as desktop applications are. These

[9] Wikipedia (2012)
[10] Wikipedia (2012)
[11] Wikipedia (2012)

applications are accessed over networks such as intranets or the Internet or utilise the browser and browser-rendered languages in order to execute[12]. Some common examples of this type of application are webmail applications, flash games, wikis, blogging applications, e-commerce applications and RSS feed aggregators.

Web applications are extremely useful in contexts where information is served to the web browser which acts as a thin client in a network, eliminating the need for installation of software other than the browser and its add-ons[13]. It is also useful in contexts where the application in question is required to be synchronised across platforms such as mobile, tablet and desktop as it eliminates the need to develop the application for installation on various devices, but rather for synchronisation across various environments.

Server Applications

Server applications are quite different from any of the applications listed above, as they are not designed to perform tasks for the user on the machine on which it installed. Instead, these applications are stored on a server, which provides resources or services to many other workstations, called clients, which request information over the network[14]. Therefore, the application does not reside on the workstation or client itself, but on the server to which the workstation is connected. Examples of these include application virtualisation server applications which create virtual installations and executions of desktop applications to deliver to clients, and web server applications which deliver content to clients over the Internet.

Server applications are used in the context of server-client architecture, which translates to a network consisting of a number of clients served by one or more servers. Due to the nature of this architecture, these applications are best used when security and control over access for clients is at premium, and when low long-term costs of administration are desired. Server applications also have the advantage of delivering substantive performance increases to the network over a set of workstations with no central point as information is centralised and delivered when requested.

[12] Wikipedia (2012)
[13] Wikipedia (2012)
[14] Wikipedia (2012)

Scripts

Finally, we refer to the set of applications known as scripts. Scripts, unlike true applications, are not fully-fledged programs, but rather small pieces of code that are not compiled as machine code, but rather interpreted from source code[15]. It also does not require user interaction to run, but rather executes automatically, and is often written in a very specific language which is simpler than normal programming languages. Common examples are macros, which simulate user actions, and browser-run scripts written in JavaScript, which alter the content of a web page in order to personalise the page for the user[16].

Therefore, since scripts are compact, they are often best used in situations where trivial aspects of an interface or content of an application or web page must change in reaction to the needs of individual users. This is especially useful in web applications which have been developed by web markup languages, where the site must interact dynamically with the user's actions, such as providing feedback.

Conclusion

In closing, the aim of this essay was to explore the different types of applications that currently exist. This began with an explanation of the nature of an application itself, and extending to include exploration of the various application types. It was found that many of the application types are extremely diverse, while sharing many similarities that caused the categories to overlap in a number of instances. However, each application type is essential to the purpose for which it has been created, and these purposes should thus be observed in the development of applications, taking cognizance of the approach which is most appropriate for that particular application type.

[15] Wikipedia (2012)
[16] Wikipedia (2012)

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