

iCloud Technology

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Abstract: Apple introduced iCloud in iOS5 as a service to allow applications to store data on Apple's servers and have it synchronized across all devices used by the same person (via their Apple ID). It also has a backup component. This document describes how to use some of the iCloud APIs provided by Apple to store and retrieve data from their servers, with C# samples for storing small key-value data pairs and for storing documents. It also discusses how iCloud Backup can influence the design of your application. The iCloud storage API in iOS5 allow applications to save user documents & application specific data to a central location and access those items from all the user's devices. iCloud helps you store your photos, music, apps, documents, calendars and more. It's an easiest way to manage your content. Apple has built iCloud functionality directly into many of their apps and iOS5. When you take a photo from your iPhone, it can automatically synchronize with iCloud, and be pushed to your iPad and Mac.

Keywords: iCloud, Photos, Content, Everywhere, Apps, Find, My Phone, Safari, Bookmark, Key Chain, Calender, Backup.

I. INTRODUCTION

In today's society, people are always looking for new technologies that'll make their lives easier and Apple's iCloud is just the thing. Having a "cloud", with all your documents stored, above your head is one of the finest concepts of all time because it's speedy, easy and accommodating. As with many other new technologies arising today, there are some legal, ethical, social and security concerns with the cloud. The Apple iCloud is a fascinating and revolutionary innovation in today's technological world.

Background Information:

The Apple iCloud is a form of cloud computing. Cloud computing is the practice of using Internet servers to manage and store data rather than having to carry that data around on a flash drive or other storing devices. The first cloud computing services came out in the late 1990's through Google and salesforce.com ("SalesForce.com", 2012.) Apple iCloud released their astonishing innovation on June 6, 2011 at the 2011 Apple Worldwide Developers Conference when Apple released iOS5 and iCloud; The Apple Worldwide Developers Conference, is a Conference Apple discuss their newest and latest innovations upon one another before releasing it to the press and public. Previously, there was Apple's MoblieMe, which did some of the same things that iCloud does, but Apple substituted it with Apple iCloud for the reason that the cloud had more technological improvements and developments. This is an objectively new concept to the technological world. It gives storing data a whole new meaning and idea. iCloud is the one of the new, resourceful technological advances of our time.

iCloud Backup:

While backing up to iCloud isn't a feature that is directly accessed by developers, the way you design your application can affect the user experience. Apple provides iOS Data Storage Guidelines for developers to follow in their iOS applications. The most important consideration is whether your app stores large files that are not user-generated (for example, a magazine reader application that stores hundred-plus megabytes of content per issue). Apple prefers that you do not store this sort of data where it will be backed-up to iCloud and unnecessarily fill the user's iCloud quota. Applications that store large amounts of data like this should either store it in one of the user directories that is not backed-up (eg. Caches or tmp) or use `NSFileManager.SetSkipBackupAttribute` to apply a flag to those files so that iCloud ignores them during backup operations. This article introduced the new iCloud feature included in iOS 5. It examined the steps required to configure your project to use iCloud and then provided examples of how to implement iCloud features.

The key-value storage example demonstrated how iCloud can be used to store a small amount of data similar to the way NSUserDefaults are stored. The UIDocument example showed how more complex data can be stored and synchronized across multiple devices via iCloud. Finally it included a brief discussion on how the addition of iCloud Backup should influence your application design.



Fig:-iCloud Backup

II. PHOTO STREAM

Photo Stream is a service supplied with the basic iCloud service which allows users to store the most recent 1,000 photos on the iCloud servers up to 30 days free of charge. When a photo is taken on a device with Photo Stream enabled, it is automatically uploaded to the iCloud servers; from there, it is automatically pushed to the rest of the user's registered devices. The service is also integrated with Apple TV, allowing users to view their recent photos wirelessly on their HDTV. With Photo Stream, you can take a photo on one iOS device and it automatically appears on all your other devices, including your Mac or PC. Import new pictures to your computer from a digital camera, and iCloud sends copies over Wi-Fi to your iPhone, iPad, and iPod touch. You can even view recent photos on your big-screen TV via Apple TV. There's no syncing, no email attachments, no file transfers. Your pictures are just there — on whichever device you happen to have handy.

Take a photo on an iOS device. Or import a photo from your digital camera to your computer. iCloud automatically pushes a copy of that photo over any available Wi-Fi or Ethernet connection to the Photos app on your iOS devices, iPhoto or Aperture on your Mac, and the Pictures Library on your PC. You can even view your Photo Stream album on your Apple TV. So you can show off your shots to friends and family from whichever device you're using at the time. 1000 of your latest photos. With you all the time. iCloud manages your Photo Stream efficiently so you don't run out of storage space on your iPhone, iPad, or iPod touch. If you have Photo Stream enabled on your iOS device, every single photo you take appears in a special Photo Stream album that holds your last 1000 photos.

You can delete any photos you don't want from the Photo Stream. To touch up a photo or keep a favorite shot permanently, simply save it to your Camera Roll. iCloud stores new photos for 30 days, so you have plenty of time to connect your iOS device to Wi-Fi and make sure you always have your most recent shots handy. 1000 photos on your devices: New photos appear on your iPhone, iPad, or iPod touch in a rolling collection of your last 1000 photos. Save your best shots: If you take a photo you really love and want to make sure it stays on your iPhone, iPad, or iPod touch, you can save it from your Photo Stream to your Camera Roll. All your photos on your Mac or PC: Your computer automatically keeps all the photos that come through your Photo Stream. Master photo library. On your Mac or PC.



Fig:-Photo stream

Keeping a complete set of your photos on your Mac is as simple as turning on Photo Stream in iPhoto or Aperture. Every new photo you take appears in a Photo Stream album just as it does on your iPhone, iPad, and iPod touch. But since your Mac has more storage than your iOS device, it automatically imports every picture from your Photo Stream into your photo library so you can edit, delete, and share the ones you want. Want to get the photos you've taken on your point-and-shoot or DSLR camera into your Photo Stream to view on all your other devices? The photos you import to your library from a camera or SD card are automatically uploaded to your Photo Stream. If you have a PC, you can auto-import and upload pictures, too. Just turn on Photo Stream, grab a camera, and start shooting. Make your photos a big deal with Apple TV. With Photo Stream and Apple TV, you can view your recent photos on your HDTV for some truly entertaining reality television.² So you can, say, take pictures during your daughter's softball game, then watch a photo play-by-play with the family gathered around the big-screen TV

III. SECURITY CONCERNS

While Apple's iCloud has fast-paced benefits, it also has some security concerns. iCloud uses a set of protocols that use middleware to communicate with one another. Therefore, there are huge security concerns due to cyber-theft. Although, Datamonitor senior analyst and CEO of I Can Do Things, Vuk Trifkovic says, "...you need to trust the cloud provider that your information will not be exposed..." (Binning, 2009.) It is hard to listen to Mr. Trifkovic especially with the recent Target cyber-thefts of millions of customers. Target may have not been using Apple's iCloud, but it was using some form of cloud computing, in which many of their customers' vital information was stolen. According to the Cloud Security Alliance (CSA), service traffic hijacking is a huge risk of using the Cloud. Once, a hijacker access your iCloud it can see all the data you have stored and manipulate it and add viruses to it. (Samson, 2013.) Although, Apple tried very hard to keep improving their security with every update. This just shows that iCloud can come with many security apprehensions and that users should be careful.

Legal & Ethical Issues:

In addition to security concerns, Legal & Ethical issues arise. Since, cyber theft is increasing on the Internet, business and companies, like Apple, have taken additional legal measures to prepare for cyber-attacks and data loss and crashes. Within legal issues, come a few ethical issues. Once a hacker can hack into a user's "cloud" it will obtain all sorts of information. This information can include anything from game accounts to personal photos/videos to financial material (Furchgott, 2012.) As with many of Apple's products and services, iCloud has a long terms and conditions contract that should be carefully read. The terms and conditions is a social and legal issue because it is a contract with Apple that many Apple users do not read because it is extremely lengthy. It is highly recommended that users should always read and understand the terms and conditions. With all these apprehensions and concerns, America has very no data protection laws which makes users worrisome and fretful about using iCloud and other cloud computing services.

Social Issues:

There are several social problems with the iCloud technology because there are many users all over the world. An average iCloud user can have family photos, schoolwork, personal documents, bank account information, etc. and if iCloud is hacked then their information can be anywhere for everyone to see. This causes major problems and concerns for the user's work and privacy, as this becomes not only a social issue but also a legal matter. Apple is said to have good security tools, meanwhile other servers like Google Docs still need some advancing to do. Google Docs/Apps make hacks precisely easy since they do not provide any superfluous security implements making it easy for hacks to hack. (Binning, 2009) However, if the accurate safety measures are taken social issues can be avoided.

Potential Benefits:

There are many ways that iCloud can be beneficial to a person's life. The average person needing to use iCloud for their schoolwork can open their documents from home, work, school and/or anywhere there is an internet server available. Once a photo is taken on your Apple device, iPhone, iPad, etc., it is automatically stored in iCloud, therefore the user does not need to worry about transferring photos from one device to another. Apple iCloud provides 5 GB of free data storage, if you wish to have more you have to purchase more data from Apple (Baran, 2011.) The Apple iCloud saves the typical user a lot of time by automatically storing the data in the "cloud". One of the pronounced benefits of iCloud is that it is self-curing, meaning that in case of failure there will constantly be backup files obtainable (Gaskell, 2013.) This modernization cloud is very much beneficial to the fast-paced technological world of today's society.

IV. FURTHER RESEARCH

In further research, it would be interesting to see what Apple will do with iCloud in a couple years from now and to know more about their future ideas. Another thing I would like to research on is the Apple Terms and Conditions. It would be pleasant to know more information on what is on there and who writes it. Additionally, research on other companies cloud storage tools and services; like Windows' SkyDrive/OneDrive, Amazon Web Services and Google Apps would be interesting. The cloud just keeps growing and it would be remarkable to see how immense the cloud can develop.

V. CONCLUSION

Overall, Apple iCloud helps the average user to keep all their documents, music, photos, etc. in one easy to reach "cloud" that can be opened anywhere there is internet and on basically any device. Apple's innovation has made lives easier for many students, teachers, CEO's, and every-day people. While it may come with some malfunctions and concerns, in the long run it generally helps because it is practical, easy, and quick. Almost everyone has used some form of cloud computing, whether it be e-mail, Black Board, and/or Facebook. The "cloud" seems to be getting bigger and bigger as more and more people need their data to be stored somewhere and opened somewhere else.

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