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Ishare

Editorial

We would like to wholeheartedly thank our honorable Chairman, Secretary, Executive Director and Principal for their continuous encouragement and constant support for bringing out the magazine. We profoundly thank our Head of Department for encouraging and motivating us to lead the magazine a successful one right from the beginning. Ishare serves as a platform for updating and enhancing upcoming technologies in Information and Communication. We are grateful to all the contributors to this magazine so far. The magazine has been sent to almost 60 institutions in and around Tamilnadu. So far we have received feedbacks and appreciations from various institutions.

We would be very pleased to receive your feedbacks. Please send your feed backs to ksrcas.ishare@gmail.com

By,

Editorial Board

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1. BRAIN FINGERPRINTING

R.Sudha, M.C.A, M.Phil.,
Asst. Professor, Dept of CS

Brain Fingerprinting is a controversial proposed investigative technique that measures recognition of familiar stimuli by measuring electrical brain wave responses to words, phrases, or pictures that are presented on a computer screen. Brain fingerprinting was invented by **Lawrence Farwell**.

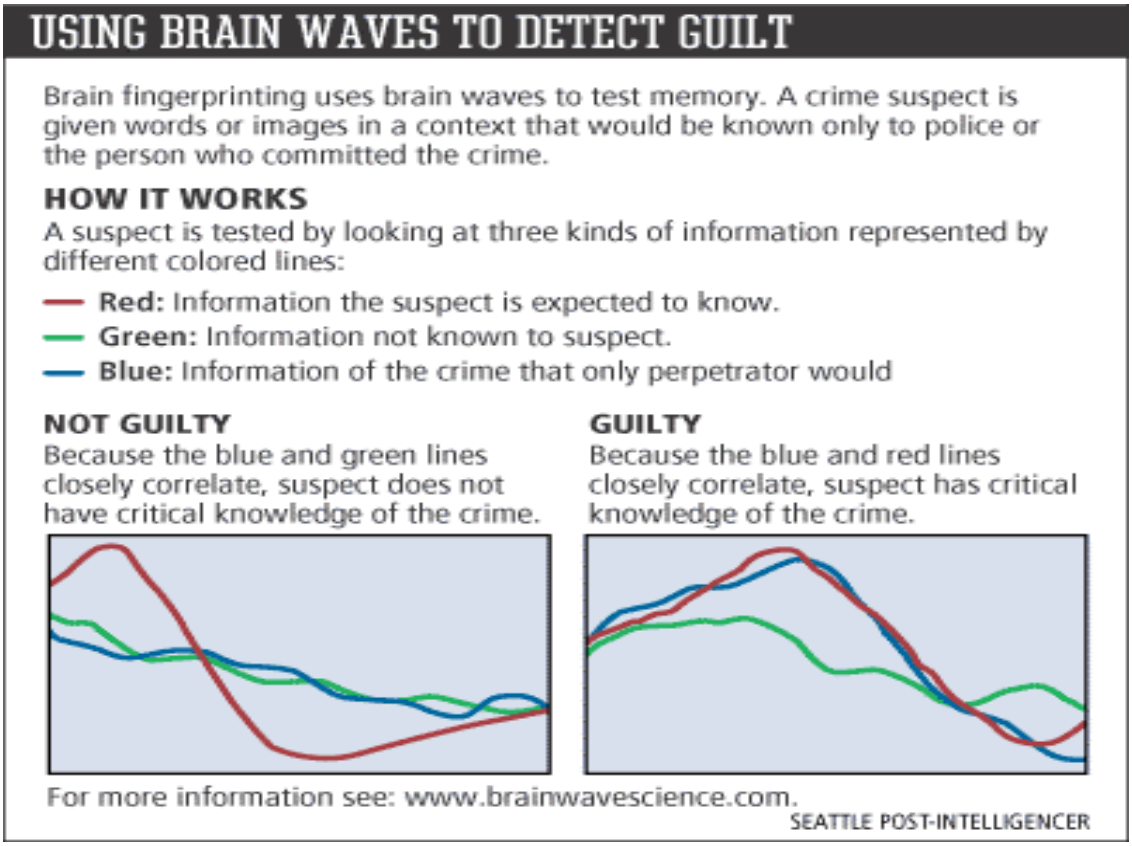
The theory is that the suspect's reaction to the details of an event or activity will reflect if the suspect had prior knowledge of the event or activity. This test uses what Farwell calls the MERMER ("Memory and Encoding Related Multifaceted Electroencephalographic Response") response to detect familiarity reaction. One of the applications is lie detection. Dr. Lawrence A. Farwell has invented, developed, proven, and patented the technique of Farwell Brain Fingerprinting, a new computer-based technology to identify the perpetrator of a crime accurately and scientifically by measuring brain-wave responses to crime-relevant words or pictures presented on a computer screen.

Farwell Brain Fingerprinting has proven 100% accurate in over 120 tests, including tests on FBI agents, tests for a US intelligence agency and for the US Navy, and tests on real-life situations including actual crime.

TECHNIQUE:

The person to be tested wears a special headband with electronic sensors that measure the electroencephalography from several locations on the scalp. In order to calibrate the brain fingerprinting system, the testee is presented with a series of irrelevant stimuli, words, and pictures, and a series of relevant stimuli, words, and pictures. The test subject's brain response to the set of different types of stimuli allow the test or to determine if the measured brain responses to test stimuli, called probes, are more similar to the relevant or irrelevant responses.

The technique uses the well-known fact that an electrical signal known as P300 is emitted from an individual's brain approximately 300 milliseconds after it is confronted with a stimulus of special significance. The novel interpretation in brain fingerprinting is to look for P300 as response to stimuli related to the crime in question e.g., a murder weapon or a victim's face. Because it is based on EEG signals, the system does not require the testee to issue verbal responses to questions or stimuli.



Brain fingerprinting uses cognitive brain responses; brain fingerprinting does not depend on the emotions of the subject, nor is it affected by emotional responses. Brain fingerprinting is fundamentally different from the polygraph (lie-detector), which measures emotion-based physiological signals such as heart rate, sweating, and blood pressure. Also, unlike polygraph testing, it does not attempt to determine whether or not the subject is lying or telling the truth.

2. BITCOIN: THE OPEN SOURCE CRYPTOGRAPHIC CURRENCY

B. Sowmya
Asst. Professor, Dept of CS

Introduction

Bitcoin is an open source peer to peer cryptographic currency, which is quite revolutionary since it is based on a peer to peer protocol. This means that it is not regulated by any government, private body or organization. Each user forms part of a payment network, which is basically a set of protocols for exchanging currency worldwide without any borders.

The very fact that it can be used and accepted anywhere can change the way our economy works. Moreover, the best part about using Bitcoin is that you can transfer it with little or no transaction fees! Bitcoin had a boom recently when its value spiked suddenly over a short period of time, but it is still not universally accepted in as many places as desired. This is partly due to the fact that the technology is still under development and also because many merchants or developers are still wary of accepting something that could essentially be a risky investment of their time and money.

Bitcoin has been of interest to merchants, developers and consumers who are keen to break the boundaries and shackles of the existing payment methods to try something new. These are however niche applications and its acceptance is at present limited to larger brands and in popular places. Moreover, Bitcoin has also been linked with black

markets, money laundering and purchase of illegal goods. This is because of the anonymity and privacy provided by Bitcoin, which makes its use similar to using cash.

An important point to note here is that Bitcoin transactions do not come with the kind of fraud protection that conventional platforms like credit cards and PayPal provide. Once completed, a Bitcoin transaction cannot be reversed unless the recipient decides to send you the money back in a new transaction. Many would assume that this is a loophole but it is, rather, a security feature which keeps you in control of your own money instead of interference from some other authority. This is one of the primary reasons why credit card and online payment methods other than bank fund transfers are not accepted even by third party merchants or Bitcoin exchanges in return for Bitcoins.

Bitcoin was launched in 2008 by Satoshi Nakamoto, a person whose true identity is still unknown. However, ever since its launch, Bitcoin's value has steadily risen from less than a dollar to more than $100 today, where it seems to be relatively stable for the time being. This value is determined by the price at which the Bitcoin is sold at major exchanges like Mt Gox. This has, however, obviously drawn a lot of attention and many of the countries are now trying to find a way to introduce rules and regulations around such innovative technology.

The rising value has resulted in day to day Bitcoin transactions being carried out on a much lower numerical scale than normal currency. Divisibility is one of the inherent properties of Bitcoin which, as opposed to normal currency, can be divided up to eight decimal places and can be used in denominations such as uBTC and mBTC.

Using Bitcoin

Bitcoin can be used from mobile devices as well as desktops. There are clients available for Android, iOS, etc, on mobile devices and for Windows, OS X and Linux on desktop computing platforms. Modern day mobile devices now offer innovative ways of

using Bitcoin to initiate a transaction between two devices with methods such as a QR code or an NFC tap.

Basically, when you install a Bitcoin client, a wallet is created for you. This wallet is associated with your Bitcoin address which looks like a long string of numbers and letters, for example:

1PC9aZC4hNX2rmmrt7uHTfYAS3hRbph4UN

This address is used to send or receive Bitcoins from another person. Each wallet can be associated with as many addresses as possible. Actually, you should use each address for only one transaction. When this wallet is created, the Bitcoin client will ask you to encrypt it and create an associated password and a private key for accessing the wallet. This private key will allow you to spend Bitcoins from your wallet but anyone can monitor the balance in your wallet.

How it works

One might wonder what it is that gives value to a Bitcoin as opposed to normal currency. Why can it not be simply copied and spent multiple times? Whenever a Bitcoin transaction is intended between two parties, the transaction is broadcast to everyone on the network by the person who is responsible for sending the money to the recipient. This transaction is then verified and validated over the next couple of hours. This process thus avoids double spending, as each verified transaction is then processed and included in the block-chain by the miners (the people who process all this information in return for transaction fees that are allocated to a miner, which may or may not be included).

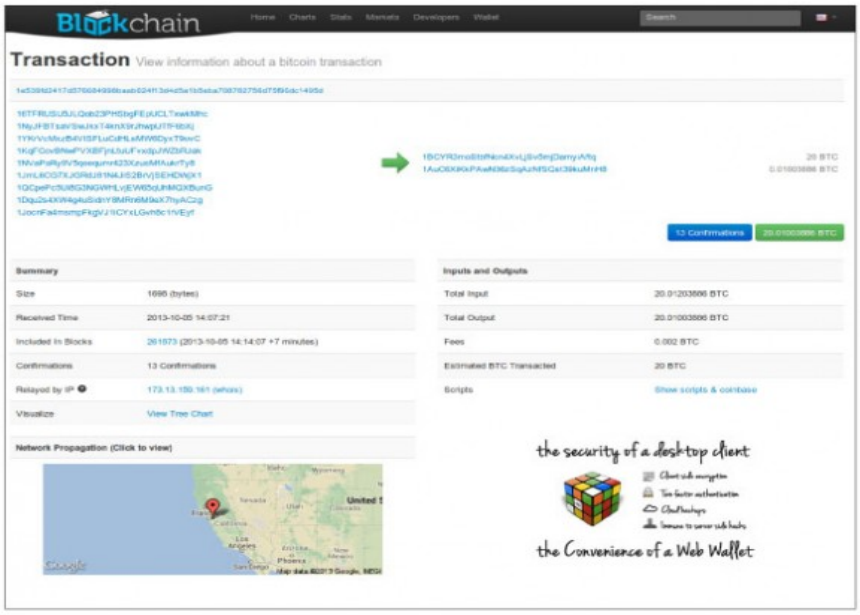


Figure 4: Viewing the details about a Bitcoin transaction on the website—*www.blockchain.info*

The block-chain thus acts like a public ledger of all the Bitcoins that have been spent over time and keeps increasing in size.

Bitcoin clients

Some popular Bitcoin clients are available on various platforms. Some of these are quite heavy due to the large size of the block-chain, while others like Electrum, Mycelium and online clients are relatively easy to use.

Full featured desktop software clients	Mobile clients (Android / iOS)	Online Web wallets	Other clients (command line and GUI-less interfaces)
Bitcoin-Qt MultiBit Armory Electrum	Bitcoin Wallet Electrum Mycelium Wallet Blockchain.info	Coinbase BIPS	Subvertx bitcoind Gocoin

Bitcoin-Qt, for example, is the full featured thick client which downloads the whole block-chain using the official Bitcoin code. It requires significant network bandwidth and is quite heavy on system resources. Other third party clients, which keep the private keys on your local machine but use the block-chain that is hosted on a server, provide a relatively manageable compromise between security and speed. While the full featured clients are the most secure, it is not possible for everyone to have the patience

and speed to run them on their machines. Each of these clients provides a simple set of instructions for installation on your machine and some of them are quite easy to use, even for those who are non-technical. Installation is similar to any other software. However, detailed instructions can be obtained from the websites of these clients. The official Bitcoin website list links to the websites of these clients.

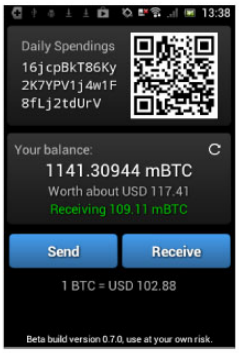


Figure 2: The Mycelium Bitcoin client provides quick Bitcoin transactions appropriate for a mobile client

How can Bitcoins be used?

Bitcoins are accepted in much fewer places than normal currency and conventional payment methods. Online hosting and other digital goods are some of the limited things that can buy with Bitcoins.

A lot of online merchants today do not even allow buying Bitcoins without extensive verification of your documents and identity. They also have an upper limit beyond which one cannot buy any more Bitcoins. Today, Bitcoin is mainly used by many people for trading and investment purposes as they expect its value to only rise over the next few years.

3. COOL LITTLE APP

R. Nirmala
Asst. Professor, Department of CS

This article highlights the coil little script which will make any active window transparent and optionally allow clicking through that window to another one underneath it.

Making Windows Transparent and Penetrable

There are times that you may want to see what even click something in that covered window is underneath the current active window and possibly. With the AutoHotkey script given below, these features can quickly be added to any Windows computer.

Transparent Script

```
#InstallKeybdHook
#SingleInstance force
/*
Hotkeys:
Alt-A: make window always on top

Alt-W: make window less transparent
Alt-S: make window more transparent
Alt-X: make window clickthoughable
Alt-Z: make window under mouse unclickthroughable
*/
!a::
WinGet, currentWindow, ID, A
WinGet, ExStyle, ExStyle, ahk_id %currentWindow%
if (ExStyle& 0x8)  ; 0x8 is WS_EX_TOPMOST.
{
        Winset, AlwaysOnTop, off, ahk_id %currentWindow%
        SplashImage,, x0 y0 b fs12, OFF always on top.
        Sleep, 1500
        SplashImage, Off
}
else
{
```

```
        WinSet, AlwaysOnTop, on, ahk_id %currentWindow%
        SplashImage,,x0 y0 b fs12, ON always on top.
        Sleep, 1500
        SplashImage, Off
}
return
!w::
WinGet, currentWindow, ID, A
if not (%currentWindow%)
{
        %currentWindow% := 255
}
if (%currentWindow% != 255)
{
        %currentWindow% += 5
        WinSet, Transparent, % %currentWindow%, ahk_id %currentWindow%
}
SplashImage,,w100 x0 y0 b fs12, % %currentWindow%
SetTimer, TurnOffSI, 1000, On
Return
!s::
SplashImage, Off
WinGet, currentWindow, ID, A
if not (%currentWindow%)
{
        %currentWindow% := 255
}
if (%currentWindow% != 5)
{
        %currentWindow% -= 5
        WinSet, Transparent, % %currentWindow%, ahk_id %currentWindow%
```

```
}
SplashImage,, w100 x0 y0 b fs12, % %currentWindow%
SetTimer, TurnOffSI, 1000, On
Return
!x::
WinGet, currentWindow, ID, A
WinSet, ExStyle, +0x80020, ahk_id %currentWindow%
return
!z::
MouseGetPos,,,MouseWin ; Gets the unique ID of the window under the mouse
WinSet, ExStyle, -0x80020, ahk_id %currentWindow%
Return
TurnOffSI:
SplashImage, off
SetTimer, TurnOffSI, 1000, Off
```

For example, suppose a script is open in a Notepad window and covering a File Explorer window (see Figure 1). You could click upon the File Explorer window to bring it on top, but with the Transparent AutoHotkey script, you can quickly make the current active windows see-through.

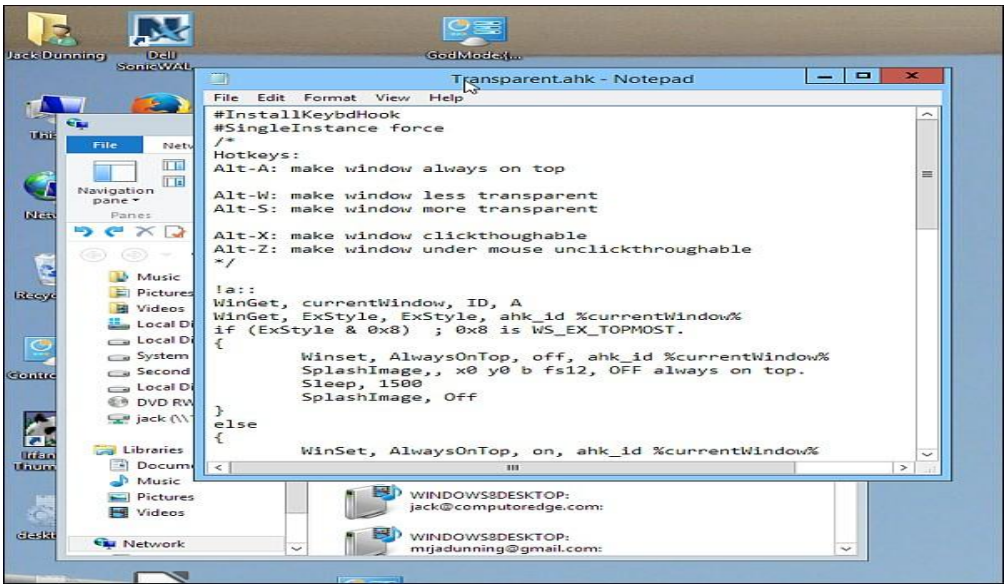


Figure: The Notepad window is partially covering a File Explorer window.

After the script is loaded holding down the ALT+S hotkey combination will start making the current active window more transparent (see Figure 2). (If you have a little bit of AutoHotkey experience, you can change the hotkey combination to anything that works for you).

As you hold down ALT+S the transparency level will continue to increase. A number will appear in the upper left-hand corner showing the level. The window is opaque at 255 and counts down from there. At zero the window will be invisible, but it's still there and active.

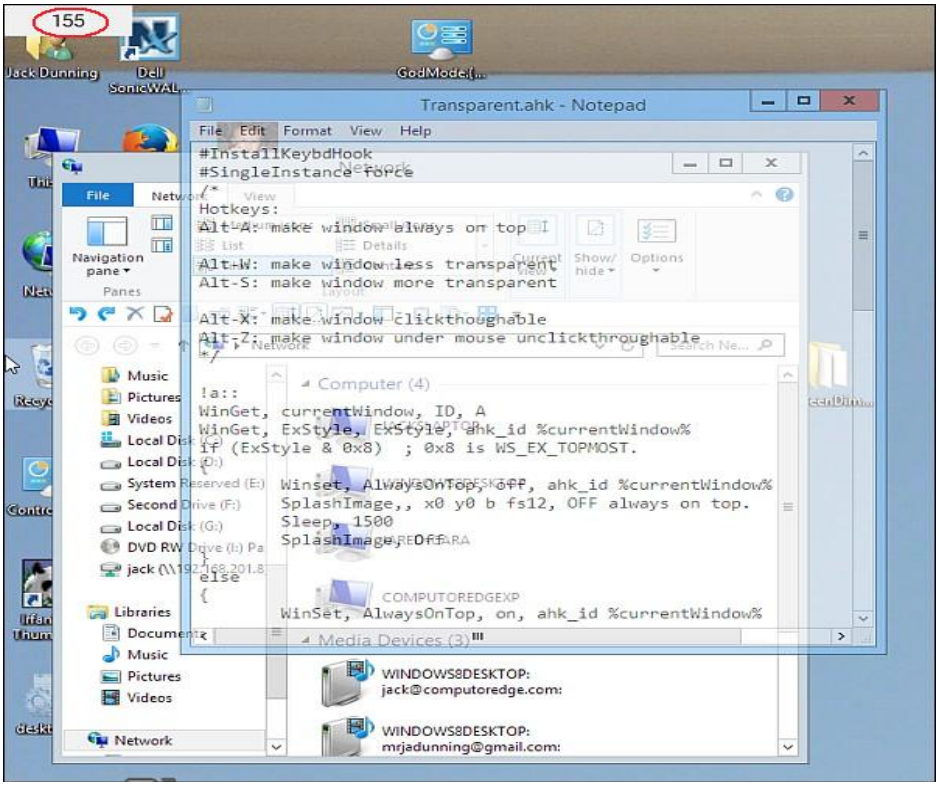


Figure 2. Use ALT+S to make the active window more transparent and ALT+W to make it less transparent. The transparency level appears in the upper left-hand corner (circled in red) while the hotkey combinations are being used.

You can reverse the process by using the ALT+W hotkey combination which decreases the window transparency until it is fully opaque (255).

Holding down the combinations make the adjustments continuous until the window is either invisible (ALT+S) or opaque (ALT+W).

That's pretty cool and it may be all you want, if you only need to peek under active windows, but the same script can allow you to click right through that window. By using the hotkey combination ALT+X the active window becomes a ghost. The image remains, but any clicks will go straight through to whatever is under the mouse (see Figure 3).

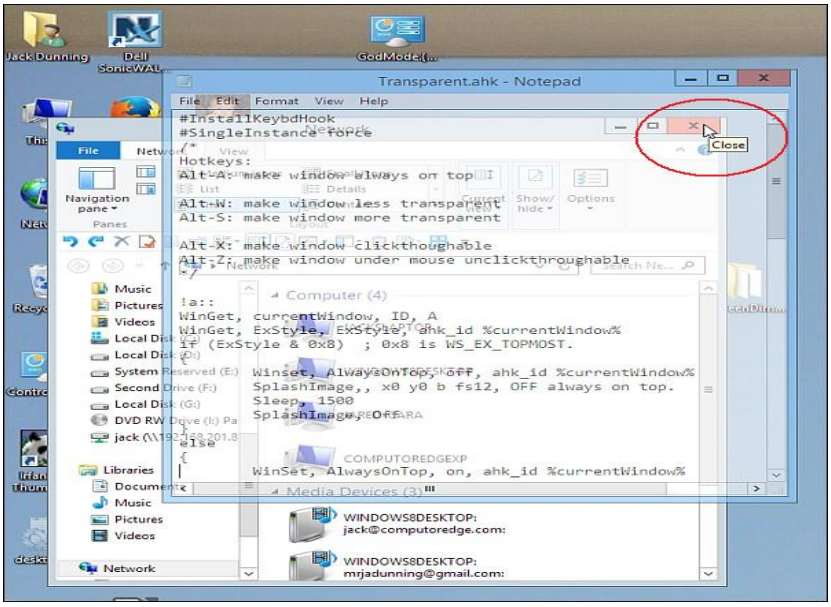


Figure 3. After using the ALT+X hotkey combination the Close button on File Explorer underneath the Notepad window responds when the mouse cursor hovers over it.

It is probably a good idea to use the ALT+A combination (an on/off toggle) to make the window always-on-top first. Otherwise, the ghost window, which now responds to nothing, will drop below the other windows on the first click-through. Clicking on it will not bring it back because it is now unresponsive to almost all input. In any case, ALT+Z will change any window under the mouse cursor back to a clickable window.

The Transparent Script

The Transparent script primarily uses the **WinSet** command with the ***ExStyle*** attribute. It's a short script and fairly straight forward. Since it is entirely composed of hotkey subroutines and labels, it can be added to the end of any other

AutoHotkey script without modification (unless there are hotkey conflicts). The **SplashImage** command is used only for the messages in the upper left-hand corner of the screen.

Note: There are many more window features which can be controlled with the WinSet,Style (or ExStyle) command, such as removing the window's title bar. If you want to instantly control some of these window features, then similar routines as those in the Transparent script can be written by modifying the code with the appropriate values from the *Styles* page.

To implement the script on your Windows computer, copy the AutoHotkey code found in the inset box given above. (Highlight the text in the code box by clicking just before the first character in the box and dragging down until the code scrolls up and completely selects all of the script, then CTRL+C.) Next, paste the code into a new AHK file. Save the file, right-click on the filename in Windows Explorer (File Explorer for Windows 8) and select Run Script. (This assumes that you have already installed AutoHotkey on your Windows computer.)

If you want to run the script on a Windows computer without AutoHotkey installed, first compile the script on the AutoHotkey installed computer into an EXE file (right-click on the filename and select Compile Script) and copy that file to the other computer (or run from a flash drive). Double-click on the filename to run the compiled EXE file.

4. MOBILE CLOUD COMPUTING

J. Mary Dalfin Bruxella
Asst. Professor, CS

Research and analyst data show how profoundly **Cloud computing** and **mobile** technologies have created a reverberation in the technology landscape around the world. An explosion of mobile and handheld devices is also significantly contributing

to world IP data traffic. To support such data demand, cloud computing seems to be the right choice because of its rapid scalability, ubiquitous network access, on-demand self-service and other features.

The data on cloud and mobile

"The ICT industry is in the midst of a once every 20–25 years shift to a new technology platform for growth and innovation. We call it the 3rd Platform, built on mobile devices and apps, cloud services, mobile broadband networks, big data analytics and social technologies. By 2020, when the ICT industry reaches $5 billion—$1.7 billion larger than it is today—at least 80% of the industry's growth will be driven by these 3rd platform technologies, an explosion of new solutions built on the new platform, along with rapidly expanding consumption of all of the above in emerging markets."

IDC's **2013 technology predictions report** finds that worldwide IT spending will exceed 2.1 trillion USD in 2013 as a result of the contribution and growth of **mobile**, **cloud**, **big data** and **social technologies** as well as emerging markets. The report also states that sales of smart mobile devices (smart phones, tablets and e-readers) will generate 20 percent of all IT sales, or 431 billion USD, in 2013. Mobile devices will be the biggest contributor to drive all IT market growth (57 percent) this year. Without mobile devices, IT market growth will be just 2.9 percent.

According to an **Alcatel-Lucent Bell Labs analysis**, 2.5 billion people or 35 percent population of the world will own at least one smart phone by 2015. It is not surprising that global mobile data traffic will grow thirteen-fold from 2012 to reach 134 exabytes (1 followed by 18 zeros) in 2017, as **CISCO** finds.

Cloud adoption is increasing significantly. According to a recent **Gartner** market forecast, worldwide public cloud spending will increase from $111 billion in 2012 to

$131 billion in 2013. This is equivalent to an 18.5 percent increase. The International Data Corporation's (IDC) **Market Predictions for 2013** reveals that 70 percent of CIOs will consider and embrace a "cloud first" strategy in 2016.

We know that mobile devices are constrained by their processing power, battery life and storage. However, cloud computing provides an illusion of infinite computing resources. Mobile cloud computing is a new platform combining the mobile devices and cloud computing to create a new infrastructure, whereby cloud performs the heavy lifting of computing-intensive tasks and storing massive amounts of data. In this new architecture, data processing and data storage happen outside of mobile devices.

Mobile applications leverage this IT architecture to generate the following advantages:

- Extended battery life
- Improvement in data storage capacity and processing power
- Improved synchronization of data due to "store in one place, access from anywhere" policy
- Improved reliability and scalability
- Ease of integration

The following factors are fostering the adoption of mobile cloud computing:

- **Trends and demands**: customers expect the convenience of using companies' websites or application from anywhere and at anytime. Mobile devices can provide this convenience. Enterprise users require always-on access to business applications and collaborative services so that they can increase their productivity from anywhere, even when they are on the commute.
- **Improved and increased broadband coverage:** 3G and 4G along with WiFi, femto-cells, fixed wireless and so on are providing better connectivity for mobile devices.
- **Enabling technologies:** HTML5, CSS3, hypervisor for mobile devices, cloudlets and Web 4.0 will drive adoption of mobile cloud computing.

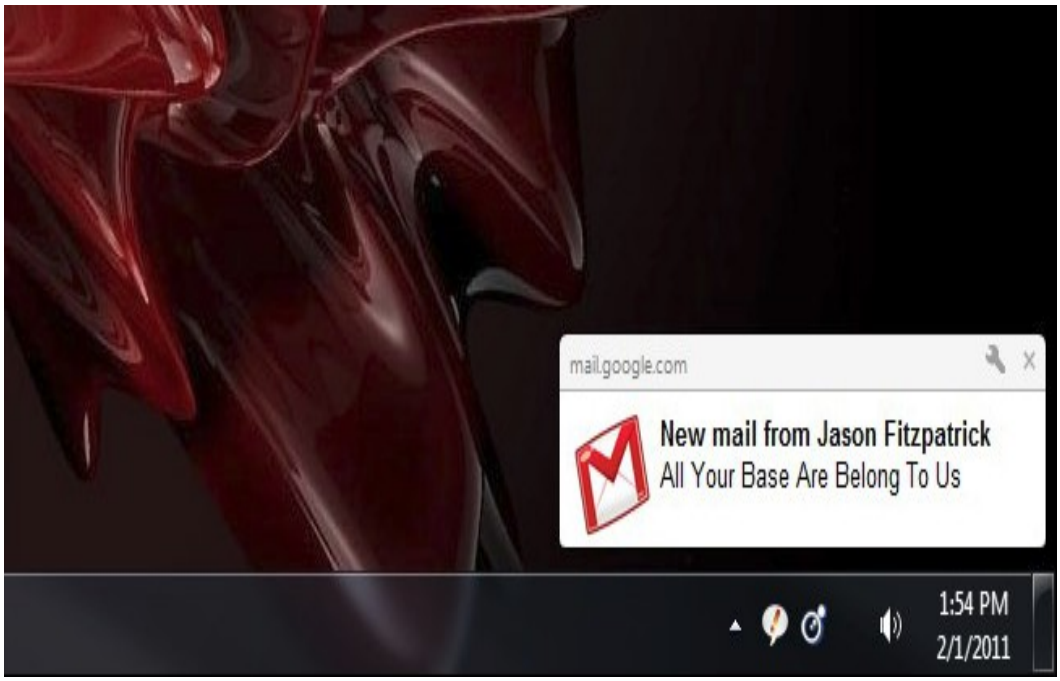
C-suite executives can unlock opportunities for their businesses, improve productivity and become competitive by unleashing the combined power of **cloud computing** and **mobile technologies**. It is high time that they include mobile cloud computing in their IT strategy and roadmap.

5. ENABLE DESKTOP NOTIFICATIONS FOR GMAIL IN CHROME

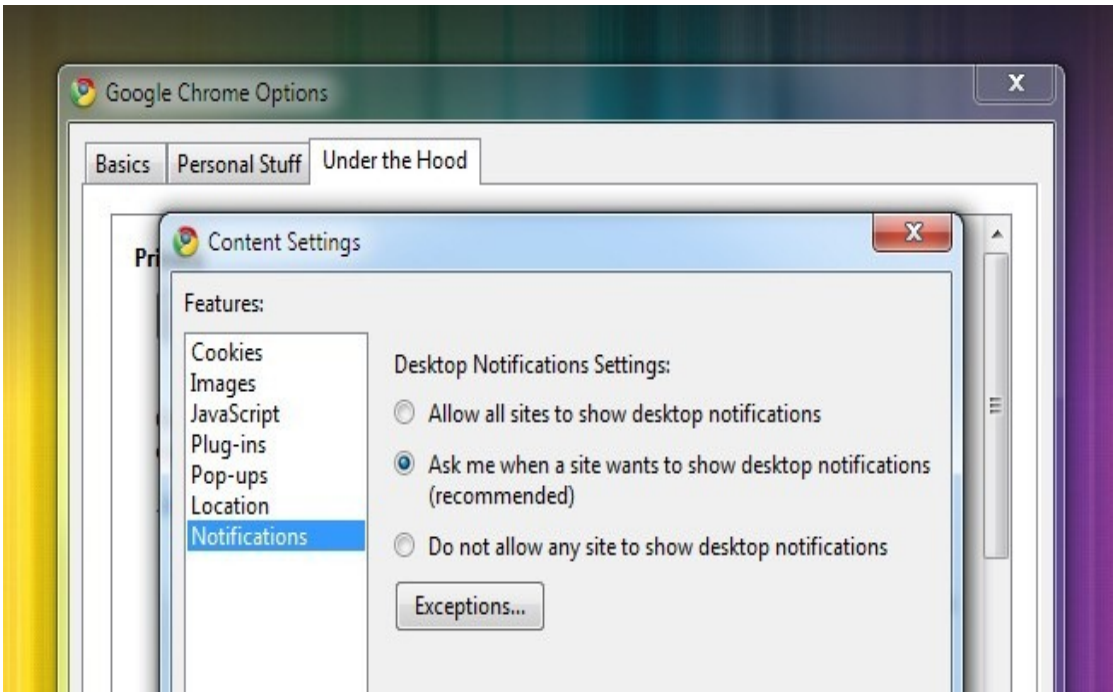
Dhansingh.V
I BCA - A

Last year Google rolled out desktop notifications for Google Calendar, now you can get Gmail and Gchat notifications on your desktop too. Read on as we walk you through configuring them both.

Chrome's desktop notifications are clean, easy to read, and really handy for keeping an eye on what's going on inside Gmail without keeping the browser focused on it. Setting it up is easy, grab your copy of Chrome to follow along.

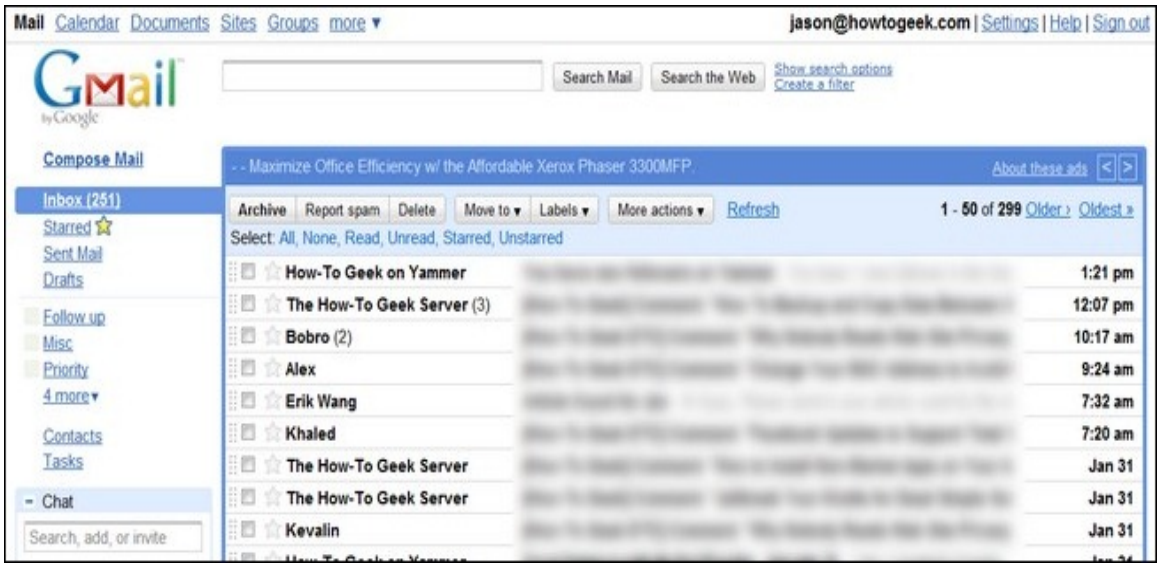


Turn on Desktop Notifications



Before you can take advantage of Chrome's notification power you'll have to turn them on. Click on the wrench in the upper right corner and navigation to **Options –> Under the Hood –> Content settings…** and then from within the Content menu navigate to **Notifications**. There you should check **Ask me when a site wants to show desktop notifications**. Close out the options menu and return back to the main browser pane in Chrome.

Enable Notifications within Gmail



Fire up Gmail and navigate to the Settings –> General. Scroll down until you see the Desktop notifications sub-section:

First, click the blue link that says "**Click here to enable desktop notifications…**". Your link will likely say "for Gmail", in our case it says How-To Geek Mail because of our Google Apps domain. When you click it, a blue bar will appear at the top of your browser asking if you want to allow mail.google.com to show desktop notifications. Click **Allow**.

Toggle the notifications you'd like to receive to **on**. In this case we'll toggle email notifications on and take it for a test drive. Don't forget to scroll down and click **Save Changes**.

Fire of an email to the Gmail account you just enabled notifications from (send it from another email address; sometimes you don't get notifications if you send them from your main address to yourself). Also, make sure you have Gmail open in a tab somewhere in Chrome. This is important; **the notifications will only work if you're actually logged into Gmail with Gmail open in a tab.**

6. HTML5

R.Sangeetha M.C.A, M.Phil.,
Assistant Professor Of CS

About HTML5

- HTML5 is the latest standard for HTML.
- The previous version of HTML, HTML 4.01, came in 1999, and the internet has changed significantly since then.
- HTML5 was designed to replace HTML 4, XHTML, and the HTML DOM Level 2.
- It was specially designed to deliver rich content without the need for additional plug-in.
- The current version delivers everything from animation to graphics, music to movies, and can also be used to build complicated web applications.
- HTML5 is also cross-platform. It is designed to work whether you are using a PC, or a Tablet, a Smartphone, or a Smart TV.

The HTML5 <!DOCTYPE>

In HTML5 there is only one DOCTYPE declaration, and it is very simple:

```
<!DOCTYPE html>
```

A Minimum HTML5 Document

Below is a simple HTML5 document, with the minimum of required tags:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title> Title of the document</title>
</head>
<body>  Content of the document.....
```

```
</body>
</html>
```

Some of the most interesting new features in HTML5 are:

- The <canvas> element for 2D drawing
- The <video> and <audio> elements for media playback
- Support for local storage
- New content-specific elements, like <article>, <footer>, <header>, <nav>, <section>
- New form controls, like calendar, date, time, email, url, search

Browser Support for HTML5

- All major browsers (Chrome, Firefox, Internet Explorer, Safari, Opera) support the new HTML5 elements and APIs, and continue to add new HTML5 features to their latest versions.
- The HTML 5 working group includes AOL, Apple, Google, IBM, Microsoft, Mozilla, Nokia, Opera, and hundreds of other vendors.

7. BROWSERSTACK

C. Suriya
Asst. Professor- CS

As a web developer testing the work in a surplus of different browsers is always difficult. Not only is it easy to skip over the browsers with little use, but even more importantly, where do you get access to IE version 6 or Firefox version 13. And not only that, but you have to test on Windows XP, Windows 7 and Mac OS Mountain Lion.

Every new browser and platform combo is roll up in a new Virtual Machine, so you have your own instance. You can set up a secure tunnel, so you can test your local html and design on the remote server.

Windows XP

- Internet Explorer 6.0
- Internet Explorer 7.0
- Internet Explorer 8.0
- Opera 10.0
- Opera 11.1
- Opera 11.5
- Opera 11.6
- Opera 12.10
- Opera 12.14
- Chrome 14.0
- Chrome 15.0
- Chrome 16.0
- Chrome 17.0
- Chrome 18.0
- Chrome 19.0
- Chrome 20.0
- Chrome 21.0
- Chrome 22.0
- Chrome 23.0
- Chrome 24.0
- Chrome 25.0
- Chrome 26.0 beta
- Chrome 27.0 dev
- Safari 4.0
- Safari 5.0
- Safari 5.1
- Firefox 3.0
- Firefox 3.6
- Firefox 4.0
- Firefox 5.0
- Firefox 6.0
- Firefox 7.0
- Firefox 8.0
- Firefox 9.0
- Firefox 10.0
- Firefox 11.0
- Firefox 12.0
- Firefox 13.0
- Firefox 14.0
- Firefox 15.0
- Firefox 16.0
- Firefox 17.0
- Firefox 18.0
- Firefox 19.0
- Firefox 20.0 beta

Mac OS X Snow Leopard

- Opera 11.1
- Opera 11.6
- Opera 12.0
- Opera 12.12
- Opera 12.13
- Chrome 14.0
- Chrome 16.0
- Chrome 17.0
- Chrome 18.0
- Chrome 19.0
- Chrome 20.0
- Chrome 21.0
- Chrome 22.0
- Chrome 23.0
- Chrome 24.0
- Chrome 25.0
- Chrome 26.0 beta
- Chrome 27.0 dev
- Safari 4.0
- Safari 5.0
- Safari 5.1
- Firefox 5.0
- Firefox 6.0
- Firefox 7.0
- Firefox 8.0
- Firefox 9.0
- Firefox 10.0
- Firefox 11.0
- Firefox 12.0
- Firefox 13.0
- Firefox 14.0
- Firefox 15.0
- Firefox 16.0
- Firefox 17.0
- Firefox 18.0
- Firefox 19.0
- Firefox 20.0 beta

8. A LIST OF DEVELOPER- FRIENDLY ANDROID LIBRARIES

R. Nirmala
Asst. Professor, Department of CS

The Android framework has been written to make the development lifecycle quicker, so that developers can write powerful applications in less time. Much like any other framework, there are several open source libraries available, ranging from custom views to supporting third-party components. Here is the list of libraries, which can save precious time while developing applications and ensure they are good-looking and user-friendly.

a. ActionBar Sherlock

This one deserves to be at the top of the list. Actionbar was introduced in API-11 of the Android SDK and the support library by Google does not provide a proper back port. This library by Jake Watson is now a part of almost every new Android application developed, and is undoubtedly on the top of my list. It works seamlessly with newer views such as NavigationDrawer, SlidingPaneLayout, Fragments, etc.

Website: http://actionbarsherlock.com

b. ActiveAndroid

This is a simple ORM solution for your applications. It is as easy as creating objects and saving them to the SQLite database. The setup of classes makes use of Java annotations. This saves a whole lot of time on configurations, and gives the developer more time to spend on the login than on the syntaxes. Once used, you will find it hard to live without it.

Website: https://github.com/pardom/ActiveAndroid

c. RoboGuice 2

Do you always forget to check for null when you getIntent().getExtras()? Do you think casting findViewById() to a TextView shouldn't be necessary? RoboGuice 2 will

help you. Inject your View, Resource, System Service, or any other object, and let RoboGuice 2 take care of the details. It makes the code slimmer and reduces several common runtime errors.

Website: https://github.com/roboguice/roboguice

d. GSON

This is a powerful and lightweight JSON parser, specifically for Android. If you have a Web-service returning JSON, use jsonschema2pojo.org (or some other similar tool) to generate the POJOs, and with a single line of code, you can parse the JSON using this library. Use GSON along with ActiveAndroid and you can reduce the development time considerably.

Website: http://code.google.com/p/google-gson/

e. Crouton

This is a neat replacement for toasts. It is nicely implemented and highly customizable. It gives your application a notification system which is cleaner and more aesthetic than native toasts, and is rightly named croutons.

Website: https://github.com/keyboardsurfer/Crouton

f. Viewpagerindicator

This is another cool library from the developer of Actionbar. It makes the viewpager more usable and enables easier navigation between fragments. Users have a clear idea of where they have navigated.

Website: http://viewpagerindicator.com/

g. Rajawali

This is one of my favourites. If you are thinking of developing live wallpapers or 3D games, this library might be very handy. One can easily export the 3D models from tools like Blender and render them on the devices using openGLES with this library. Adding animations like rotation, or scaling on user events is a cakewalk.

Website: https://github.com/MasDennis/Rajawali

h. Universal Image Loader

Handling large bitmaps has given nightmares to many Android developers. This lightweight library saves you the effort of handling bitmaps and provides great support for caching images. One can easily figure out how to decode the bitmaps in the app.

Website: https://github.com/nostra13/Android-Universal-Image-Loader

i. Robotium

This is an automation testing framework for Android. Developers and testers can generate test cases and ensure that minor changes do not introduce new bugs. It might seem to be an overhead in the early stages of development but helps keep maintenance work easy.

Website: http://code.google.com/p/robotium/

j. ZXing

This quickly adds support for scanning bar codes in an Android application. Easy to configure and use. It has a high scanning efficiency.

Website: http://code.google.com/p/zxing/

k. Tesseract

Tesseract is a highly optimised optical character reader library available for Android. This is a cross-platform library and will require some basic knowledge of using NDK in an Android app.

Website: http://code.google.com/p/tesseract-ocr/

l. AChartEngine

This plots neat and elegant graphs in various styles. The javadocs might not be great, and it might not be all that easy to develop with only a few resources available and a large number of classes, but the output is definitely worth the effort.

Website: http://www.achartengine.org/

9. CLOUD INNOVATIONS

B. Sowmya
Asst. Professor, Dept of CS

Today the buying actions are being changed by freedom of choice, time to market, deployment accelerations and economies of scale provided by cloud based technologies. To achieve the above characteristics various new innovations and service offerings are getting bundled with cloud providers strategy and policies. In the coming sections we will discuss the innovations that will be adopted and diffused into the enterprises in the coming years.

- ***DevOps-Platfrom:***

This methodology was propounded when the mutual activities of cloud service providers and Web2.0 community adopted the cloud based development platforms. A web 2.0 community was looking for scale out performance because of the online and rapid development platforms. This is well rooted with the agile methodologies and principles.

The main notion of this platform is to establish the trust between the development and operations team. This help to transit the code to production, which requires mutual support between both the teams. In reality this is focused on different releases where teams face problems. Also it emphasize the code as the infrastructure where data centers are more programmable today and provide agility to meet the changing business demands.

It adopts the orchestration and automation processes to reduce the pains of the lifecycle of application. Agile methodologies, continuous integration and automated way of testing should be practiced to get all the values of the Dev-Ops platform.

- ***Private- Platform as a service***

It is referred to the application based infrastructure software in a service based model. It provides

- Application based servers,
- DBMSs
- Integration Aggregators and Brokers
- Portal Artifacts
- Message queue Technology
- BPM technology

This service when offered in pay as you go model it is represented as PaaS. When offered as services, these become examples of PaaS. The requirement of the private PaaS is to improve the development cycles with more agility and flexibility. It is achieved over the private cloud by sharing the computing resources with software stacks also in a multitenant model. It further helps to expand the computer and software in an automated and elastic way to more number of consumers.

- ***Cloud Services Aggregation and Broker***

Cloud Services Aggregation and Broker is a bridge and intermediate service. It integrates multiple roles and business models within or outside the enterprises to add the cloud offerings provided by the service provider. Cloud Services Aggregation and Broker platform works as the technology to implement the intermediate services within the private cloud services of the organization and external cloud service provider.

- ***Hybrid***

This is referred as a hybrid model of the public cloud and internal compute available in the private cloud model or infrastructure or operations. It is the integration between the resources available internal and external at different layers of process, management and data.

This can take multiple forms based on the use case and combination of technologies.

- Dynamic Workload Management: This is referred as the placements of the workloads as per the utilization and placement policies may be available internal or external after meeting the compliances and resources available.
- Cloudburst: It is actually extending the internal private cloud platform dynamically to external public cloud service providers when the resources are required.
- Service composition: This is composition of the two solutions running concurrently on internal as well as external service provider based infrastructure. There is concurrent data movement and coordination of the processes between the two environments.
- Dynamic cloud: This is the amalgamation of the Dynamic Workload Management, Cloudburst and Service composition of the services.

- ***Big Data***

This refers to the quantification of the information and points related to data like

- ✓ Information Volume
- ✓ Forms of Data
- ✓ Rapid Data arrival- Scale up and Scale down

Based on the data types there can be various compliances, standards, archival policies and complexities in the information processing. This is the term accepted by the information industry to define the extreme information processing capabilities and complexities. Today it is mostly focused on handling the large volume set of information processing for platforms like social platforms, Internet and streaming. Multiple OEMs and ISVs are coming with multifold hardware and software solution to deal with the issue.

- ***Cloud BPM***

BPM methodologies are used as a management framework for the execution of enterprise/s. This is managed by Business processes that depict the actual work of the

enterprise. This establishes the defined set of rules with the work activities. When these processes are laid for cloud based environment may be public or private – it is termed as Cloud BPM. We should differentiate the Cloud BPM with BPMPaaS.

Cloud BPM is a product while BPMPaaS is the service provided by the cloud service provider in pay as you go model. It is differentiated by the delivery model. One can use the on-premise version and can offer the platforms to the internal consumers of the private cloud. Other model can be available by the service provider.

- ***Cloud Collaboration Platforms***

This is one of the low hanging fruits of cloud deployment. This includes platforms like

- Email Service
- Messaging Platforms
- Document Management Systems
- Workspaces
- Wikis
- Blogs
- Audio/Video Conferencing
- Social Media Etc

It is widely accepted platforms based on the mature technologies and requires less composition of multiple solutions. These solutions are also suited for SaaS based technologies and it can be bundled in various combinations and permutations.

- ***Mobile Enterprise Application Platform***

Mobile Enterprise Application Platform has been envisaged, modeled and deployed by developers all the way through mobilizing current organization applications of customers in various vertical including Financial Institutions, healthcare, Government, retail Products, for their field based mobile users both in-house or external stakeholders. Mobile Enterprise Application Platform deal with all the widespread challenges increased and considerably speeds up the mobility competence of current organization applications with negligible transformation.

- ***Community Cloud***

This is shared platforms mostly with government agencies working with the common objectives, standards and policies. This is deployed to achieve the greater flexibility to use the common resources. These cloud service are established when multiple agencies share the same scalability, security, availability and performance. They have the common and unique entrance mechanism to the community. Based on the policy and trust, one agency shares the infrastructure with all other members of the community with proper authentication mechanism.

- ***Cloud Based Application Design***

The application that can scale horizontally and vertically on cloud infrastructure should be designed in such a way that it can enjoy the benefits of performance, availability, unmatched performance and world class infrastructure. These applications require optimized architectures and patterns to support the unique service delivery and release. It should be able to work with

- Multitenant environment
- Huge availability
- Distributed environment
- Pay as you go model

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MOBILE APPLICATIONS