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CyberCrewS

KONGU ARTS AND SCIENCE COLLEGE

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Department of Computer Science (UG)

Cyber Crews Association

KONGU
Assuring the Best

53rd ISSUE

EDITORIAL BOARD

CONTENT

PART- 1

Every placement test on quantitative aptitude will contain at least 30% questions on number systems and number series. Aptitude questions on number system form the backbone for placement preparation. You can score easily on quantitative aptitude section if you understand the basics of number system. Since the questions on number systems are simple, importance lies in acquiring the right skills to tackle these problems with speed. Practicing problems on numbers systems not only helps in improving your speed but also provides a strong base for solving other quantitative aptitude sections like **HCF** and **LCM, averages, percentages, time and speed, pipes and cisterns** etc as well.

Here we are going to see them one by one in our forthcoming issues............

Formulas of Number Series

1. $1 + 2 + 3 + 4 + 5 + ... + n = n(n + 1)/2$
2. $(1^2 + 2^2 + 3^2 + ... + n^2) = n (n + 1) (2n + 1) / 6$
3. $(1^3 + 2^3 + 3^3 + ... + n^3) = (n(n + 1)/ 2)^2$
4. Sum of first n odd numbers $= n^2$
5. Sum of first n even numbers $= n (n + 1)$

Mathematical Formulas

1. $(a + b)(a - b) = (a^2 - b^2)$
2. $(a + b)^2 = (a^2 + b^2 + 2ab)$
3. $(a - b)^2 = (a^2 + b^2 - 2ab)$
4. $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$
5. $(a^3 + b^3) = (a + b)(a^2 - ab + b^2)$
6. $(a^3 - b^3) = (a - b)(a^2 + ab + b^2)$
7. $(a^3 + b^3 + c^3 - 3abc) = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ac)$
8. When $a + b + c = 0$, then $a^3 + b^3 + c^3 = 3abc$
9. $(a + b)^n = a^n + (^nC_1)a^{n-1}b + (^nC_2)a^{n-2}b^2 + ... + (^nC_{n-1})ab^{n-1} + b^n$

Shortcuts for number divisibility check

1. A number is divisible by 2, if its unit's digit is any of 0, 2, 4, 6, 8.

2. A number is divisible by 3, if the sum of its digits is divisible by 3.

3. A number is divisible by 4, if the number formed by the last two digits is divisible by 4.

4. A number is divisible by 5, if its unit's digit is either 0 or 5.

5. A number is divisible by 6, if it is divisible by both 2 and 3.

6. A number is divisible by 8, if the number formed by the last three digits of the given number is divisible by 8.

7. A number is divisible by 9, if the sum of its digits is divisible by 9.

8. A number is divisible by 10, if it ends with 0.

9. A number is divisible by 11, if the difference of the sum of its digits at odd places and the sum of its digits at even places, is either 0 or a number divisible by 11.

10. A number is divisible by 12, if it is divisible by both 4 and 3.

11. A number is divisible by 14, if it is divisible by 2 as well as 7.

12. Two numbers are said to be co-primes if their H.C.F. is 1. To find if a number, say y is divisible by x, find m and n such that m * n = x and m and n are co-prime numbers. If y is divisible by both m and n then it is divisible by x.

Frequently Asked Questions on Number System

- Given a number **x**, you will be asked to find the largest **n** digit number divisible by **x**.

- You will be given with a set of numbers (**n1, n2, n3...**) and asked to find how many of those numbers are divisible by a specified number **x**.

- Given a number series, find the sum of **n** terms, find **n**[th] term etc.

- Find product of two numbers when their sum/difference and sum of their squares is given.

- Find the number when divisibility of its digits with certain numbers is given.

- Find the smallest **n** digit number divisible by **x**.

- Which of the given numbers are prime numbers.

- Number **x** when divided by **y** gives remainder **r**, what will be the remainder when x^2 is divided by **y**.

- Given relationship between the digits of number, find the number.

- Find result of operations (additions, subtractions, multiplications, divisions etc) on given integers. These integers can be large and the question may look difficult and time consuming. But mostly the question will map onto one of the known algebraic equations given in this first tab.

Meet you all in the next issue.............All the best!

Prepared by Staff-Editor

Hewlett Packard was first started in a garage at Palo Alto in the year 1939

GOOGLE'S PROJECT ARA

Project Ara is the codename for an initiative by **Google** that aims to develop a free, **open hardware** platform for creating highly **modular smart phones**. The platform will include a structural frame that holds smart phone modules of the owner's choice, such as a display, keyboard or an extra battery.

It would allow users to swap out malfunctioning modules or upgrade individual modules as innovations emerge, providing longer lifetime cycles for the handset, and potentially reducing electronic waste.


A market pilot for Project Ara is scheduled for 2015 with a target bill of materials cost of $50 for a basic grey phone. The project was originally headed by the Advanced Technologies and Projects team within Motorola Mobility while it was a subsidiary of Google.

Although Google had sold Motorola to Lenovo, it is retaining the project team who will work under the direction of the Android division.

Google's Project Happily, at the LAUNCH tech conference one of the Project Ara team members spent a juicy 25 minutes to talk about the modular phone concept. He even went on and demonstrated how swapping components works.
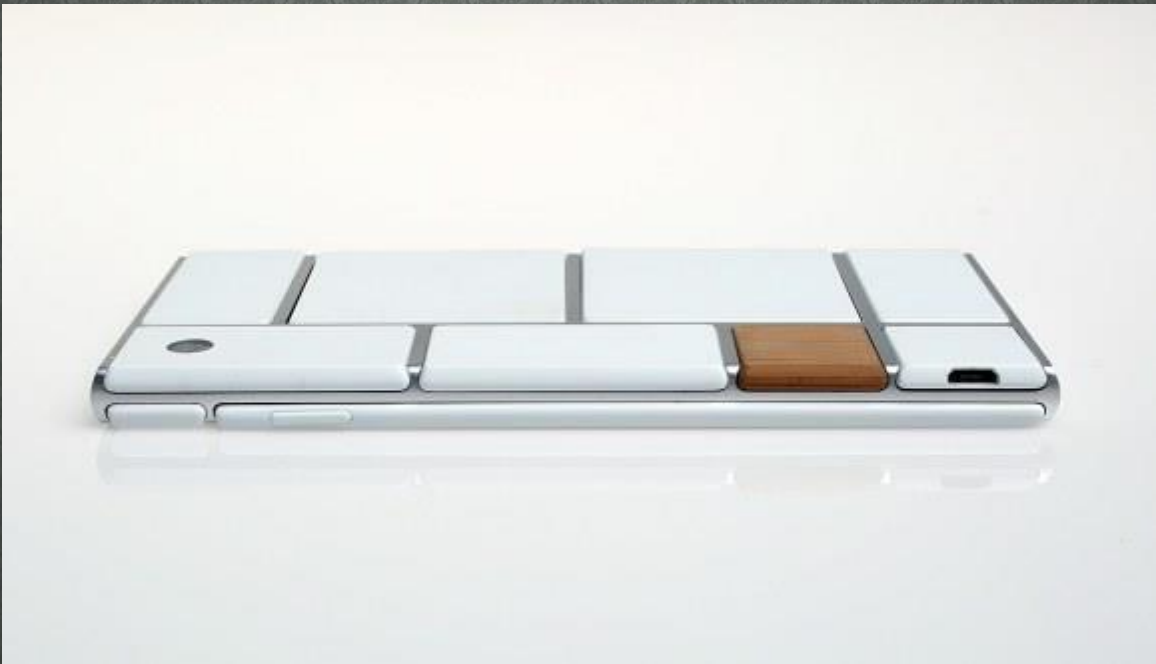
The modular phone will come in three sizes at launch: a mini (about 4"), medium (below 5") and larger (think phablets). We already know that Google wants to keep Ara as cheap as possible. A recent report suggests the endoskeleton to which all modules attach will cost no more than $50.

The Ara member said that the base of the entire modular phone should run about $15 per unit. It doesn't do anything else than bridging the rest of the components so they can work together.

AMAZON TV STICK

The massive success of the $35 Chrome cast inspired competitors to launch similar devices, with Roku, Mozilla, and even Microsoft announcing streaming sticks of their own. Now the Chromecast has a new and formidable competitor in the Amazon Fire TV Stick.

First off, you get better specifications than with the aging Chromecast, including a dual-core Broadcom processor, 1GB of RAM, and 8GB of storage. For comparison, the Chromecast features 512MB of RAM and just 2GB of storage. Amazon also touts Dolby Digital Plus surround sound and dual-band, dual-antenna WiFi, which should ensure a smoother streaming experience

The Fire TV Stick comes with a remote control that lets you control it without a connected smartphone or tablet. You get basic media playback controls, but you can also use the remote to play simple games – Amazon mentions You Don't Know Jack, The Game of Life, and Flappy Birds Family. Note however, that you likely won't be able to play titles designed for the beefier Amazon Fire TV $99 set-top-box unit.

In appearance and basic functionality, the Fire TV Stick is very similar to the Chromecast – you simply plug it into your TV's HDMI input slot, plug in the power adapter, and fire it up.

Optionally, you can get a $29.99 remote control with voice commands support, or accomplish the same tasks using the Android app on your smartphone.

Like most of Amazon's hardware products, the Fire TV Stick is designed to remove all effort from diving into Amazon's vast vaults of content, from music and video, to books, and apps.

The Chromecast is more open, but at least on paper, the $39 Fire TV Stick seems a very powerful competitor. Amazon's ecosystem is very impressive, and considering the good price tag, the Fire TV Stick looks like a great purchase, especially if you've already opted for Amazon Prime.

Android 5.0 Currently Runs On less than 0.1% of Handsets

Google's recently released Android 5.0 mobile operating system is currently running on fewer than 0.1 percent of handsets, according to data released by the company. The new software, code-named 'Lollipop,' was made generally available November 12. Carriers are currently rolling Lollipop out to consumers, according to their own schedule.

The limited uptake of Android's fifth version so far underscores a wider problem in the mobile world: Fragmentation. It took Windows Phone 8.1, for example, nearly half a year to make it to the 50 percent market share mark. And as Wired notes, Apple is seeing slower adoption of its new iOS 8 than some expected.


Current reports indicate that Lollipop is seeing increasing over-the-air updates, which could quickly push its market share numbers higher. Google was not immediately available to comment on the current Lollipop figures.

However, even if Lollipop manages to grow its share of the Android install base through the end of the year, it will likely face an adoption ceiling. Currently, the most popular version of Android is KitKat, or Android 4.4. It commands 33.9 percent market share.

There are six versions of Android at current tip that have more than 7 percent market share, for reference. Given that, it seems doubtful that Lollipop itself will do much better than the 30 percent mark, unless something in its ecosystem changes.
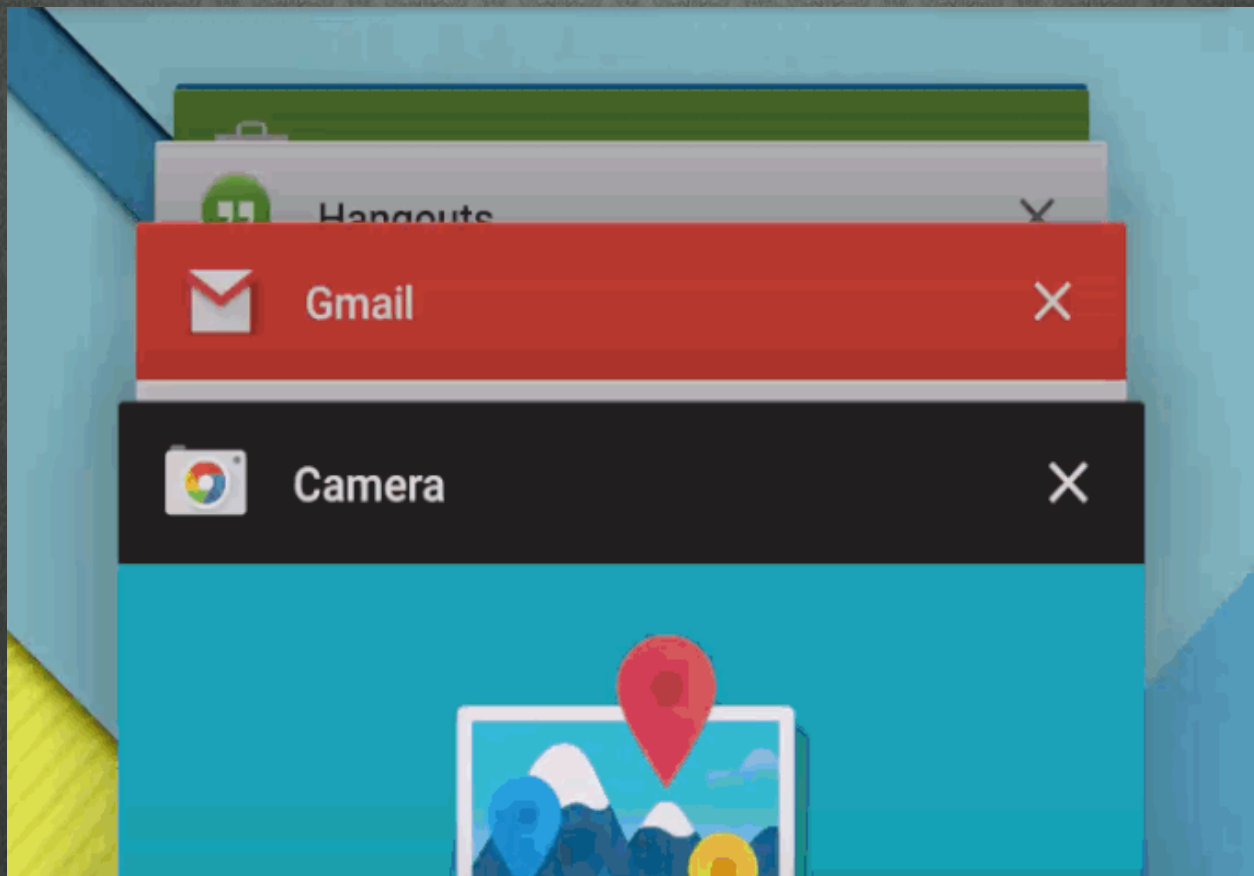
Looking backwards, we can compare the current rollout of Lollipop to the KitKat release. The first time KitKat hit the charts, it had 0.01 percent market share. The next month, that tally inched up to 1.11 percent. The next month, 2.94 percent. So the initial incline can be shallow for new Android builds.

ARM TECHNOLOGY IN APPLE'S A7, A8 GETS AN UPGRADE

ARM says first test chips based on ARMv8.1-A architecture will come out in the second half of next year. The processor architecture behind Apple's A7 and A8 chips is getting an incremental upgrade.

ARM, whose processor designs are used in most mobile devices, is adding features to its ARMv8.1-A architecture that could improve the security and speed of chips. The new architecture is an upgrade from the existing ARMv8-A, which is in Apple's A8 and also chips for Android devices.


The impact of these changes will be felt more on larger systems than mobile devices, said David Brash, architecture program director at ARM's Architecture and Technology Group, in a blog entry.

The new features could impact performance on servers, a new market for ARM., Cavium, Applied Micro and Qualcomm are among a handful of companies that have made or are investigating ARM-based server chips.

The first test chips from the new ARMv8.1-A architecture are expected next year, which is also when upgrades will also be made to the Linux kernel and software development tools. Apple, which made the first 64-bit mobile chip based on ARMv8-A, will likely jump to the new architecture.

"It is important to recognize that introduction of these enhancements into new cores will take several years, and other design choices can have a much greater impact on system performance".
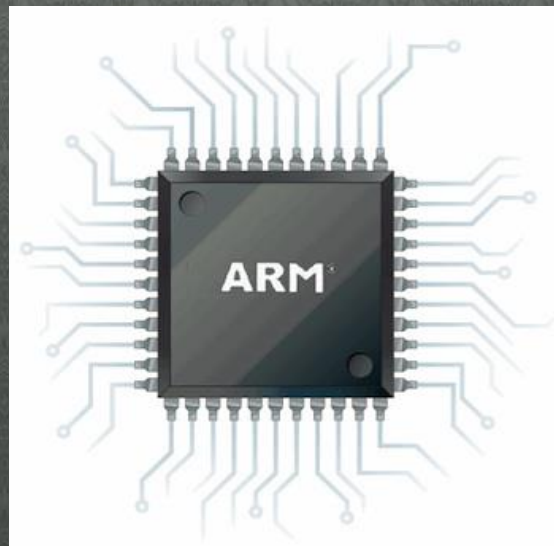
ARM currently has 57 ARMv8-A processor and architecture licenses, and more products like 64-bit Android tablets and Smartphone are expected to appear in the coming years.

The incremental updates in ARMv8.1-A revolve around memory addressing, security, virtualization and throughput. ARMv8-A code will run on v8.1 cores. ARM made the instruction-set architecture upgrades by working with partners.

EYE TRIBE

Eye tracking has been actively discussed by technology enthusiasts throughout these years, but it's really challenging to implement. But Eye Tribe actually did this. They successfully created the technology to allow you to control your tablet, play flight simulator, and even slice fruits in Fruit Ninja only with your eye movements.

It's basically taking the common eye-tracking technology and combining it with a front-facing camera plus some serious computer-vision algorithm, and voila, fruit slicing done with the eyes! A live demo was done in LeWeb this year and we may actually be able to see it in in action in mobile devices .

Currently the company is still seeking partnership to bring this sci-fi tech into the consumer market but you and I know that this product is simply too awesome to fail. Smartphones and tablets aren't the only treasures to be discovered here at Mobile World Congress.

Tucked away in one of the massive halls is Danish company The Eye Tribe, and its eye-tracking demo has turned many a head here in Barcelona, including ours.

Anders Bo Pedersen, Mobile lead and Partner and The Eye Tribe told Stuff that the company's ultimate aim is to license their software to manufacturers, who will already have the hardware built into it their devices.

How does it work?

Like the Leap Motion, the Eye Tracker uses infrared red light to work its tracking magic. If you've seen footage of people's faces being recorded with a night vision camera, you'll notice how brightly their eyes reflect the light, and that's how the Eye Tracker is able to detect where you're looking.
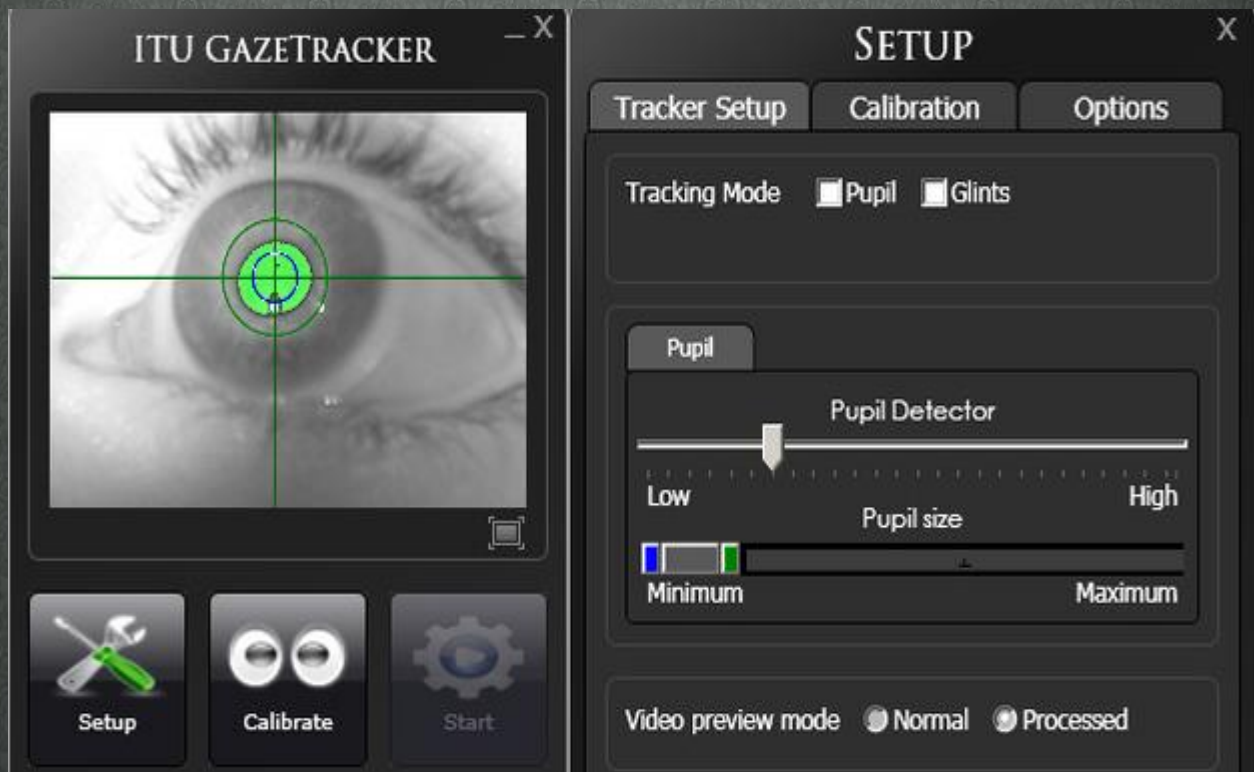
It's accurate enough to track an area the size of a fingerprint after a brief calibration is set up, and you can then use your eyes to navigate around an OS.

Currently only Windows is supported for consumers, but an OS X version is expected in April. We were shown an microUSB Android attachment nicknamed 'the dice', and the Android SDK will be available later this year.

FIREFOX OS

IOS and Android are great, but they each have their own rules and policies that certainly inhibit the creative efforts of developers. Mozilla has since decided to build a new mobile operating system from scratch, one that will focus on true openness, freedom and user choice. It's Firefox OS.

Firefox OS is built on Gonk, Gecko and Gaia software layers – for the rest of us, it means it is built on open source, and it carries web technologies such as HTML5 and CSS3.

Developers can create and debut web apps without the blockade of requirements set by app stores, and users could even customize the OS based on their needs. Currently the OS has made its debut on Android-compatible phones, and the impression so far, is great.

You can use the OS to do essential tasks you do on iOS or Android: calling friends, browsing web, taking photos, playing games, they are all possible on Firefox OS, set to rock the smartphone market.

Firefox OS is open source and therefore free from proprietary technology, while still providing the power to allow application developers to create excellent products. In addition, it's flexible and capable enough to make the end user happy.

For Web developers, the most important part to understand is that the **entire user interface is a web app** capable of displaying and launching other Web apps. Any modifications you make to the user interface and any applications you create to run on Firefox OS are web apps created using HTML, CSS, and JavaScript, albeit with enhanced access to the mobile device's hardware and services.
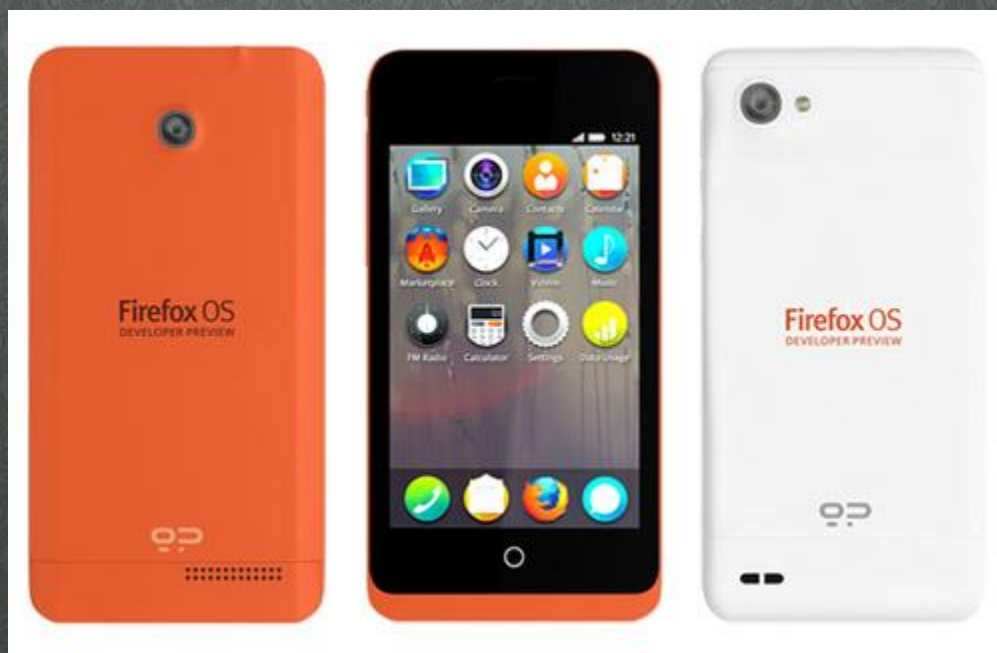
More choices across Asia

- Cherry Mobile recently introduced the ACE, the first Firefox OS Smartphone in the Philippines, and currently the most affordable Smartphone in the world.
- KDDI confirmed it will release a Firefox OS phone in Japan this December.
- A few weeks ago ALCATEL ONETOUCH introduced an ultra-low-cost Firefox OS Smartphone in Bangladesh, adding to the Go Fox 15 already in the market.

IBM TO SELL IPHONES IN INDIA

Apple iPads and iPhones will soon be available on monthly installments as IBM begins selling them to enterprises in India along with its own software bundle.

Under the arrangement with Apple, we can resell all existing Apple mobile devices, activate them and deploy and support them for two to three years. Customers can pay per year or per month — so there will be no capital cost for the customer. Analysts believe this strategy could help Apple regain market share in India.
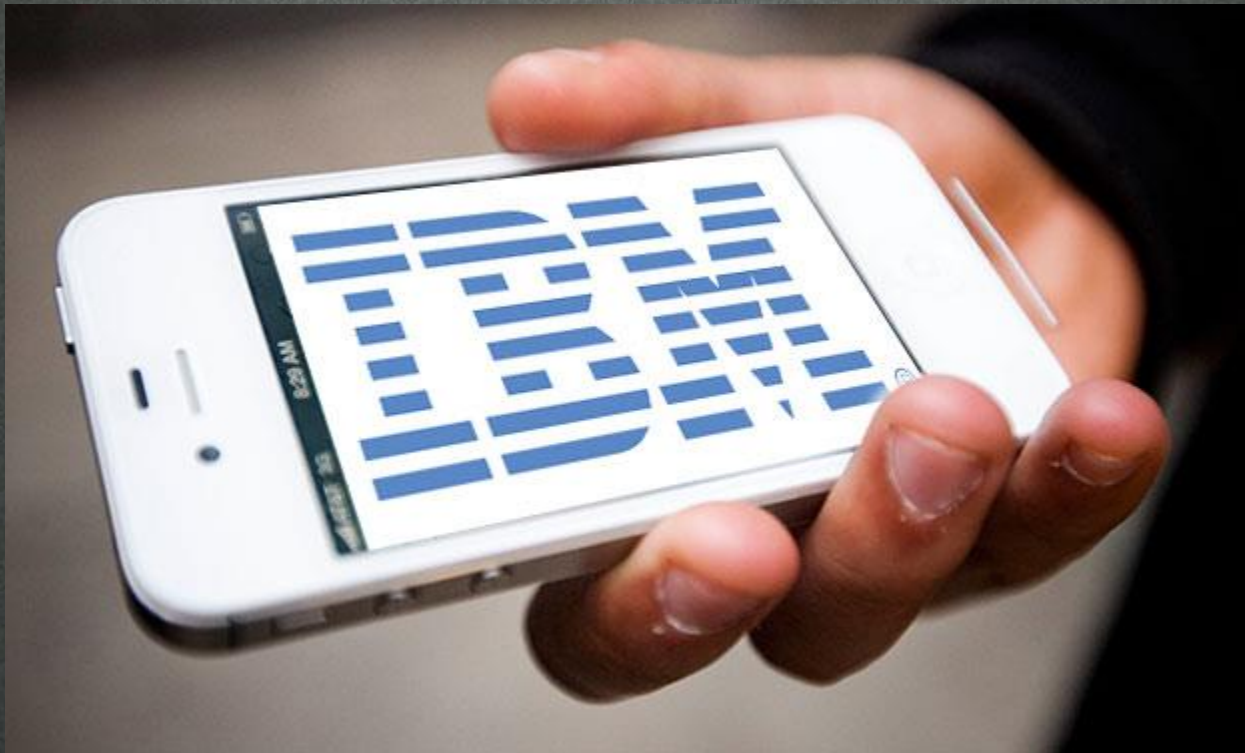

The partnership will enable Apple to make a strong bid to enterprise users. With software and hardware cost bundled with easy payment options, Apple products can become attractive to small and mid-size businesses too; this could potentially help Apple build market share on the rising commercial tablet business in India.

According to Duckworth, these apps, jointly developed by IBM India labs and centers in the US, Canada and Australia, are also being tested with a few customers in India.

In order to attract price-sensitive Indian customers, IBM will resell all iOS devices Apple still sells in India, including iPhone 4S, which are available for less than Rs 20,000. Such older devices have been discontinued in markets such as the US and Europe.
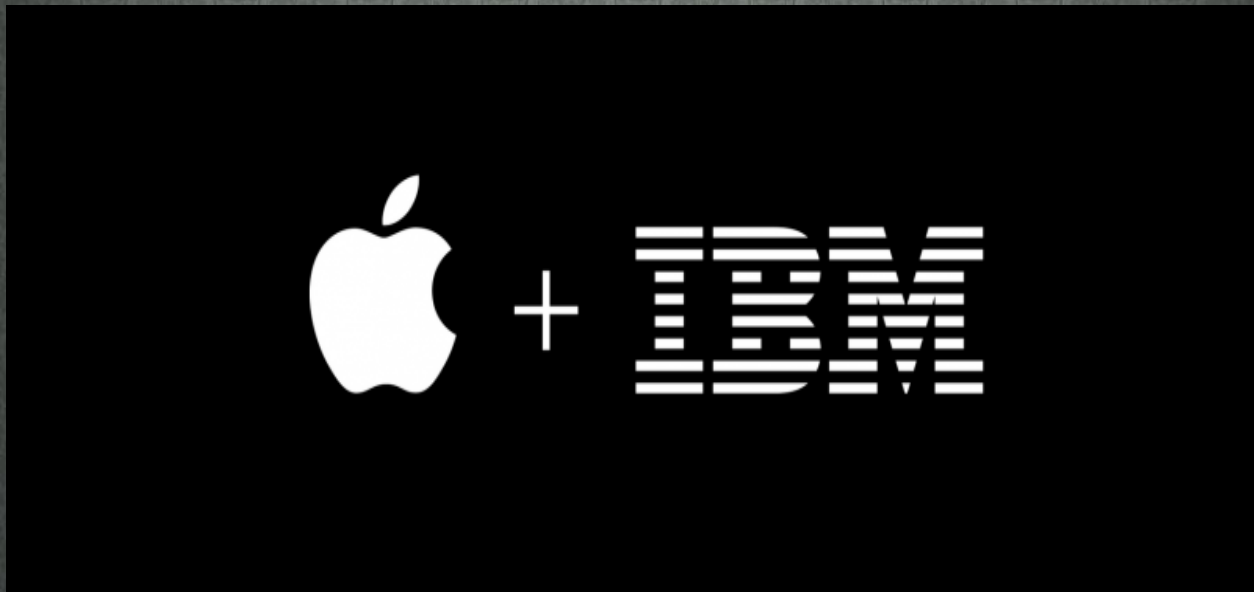
Apple iPads market share has been declining rapidly. Global shipments fell 26.04 million units in the first quarter of its fiscal 2014 to 12.32 million units in the fourth.

IBM's partnership with Apple will improve the quality of enterprise apps on the mobile platform. Though this initiative may not result in a quantum leap over currently available enterprise apps in pure functionality terms, it will certainly increase usage and universal applicability of those applications by extending them to IOS-based devices. Wal-Mart India has already deployed iPads and iPhones within the company.

INTEL AND SMS AUDIO PACK A HEART RATE MONITOR INTO BIOSPORT EARBUDS

The SMS Audio BioSport measures heart rate through the ear canal and draws its charge straight from the headphone jack. Intel and SMS Audio have teamed up for a pair of earbuds that monitor the user's heart rate, but the most interesting feature actually lies in the headphone jack.


The SMS Audio BioSport measures heart rate through the user's ear canal, and feeds the data into third-party Smartphone apps such as RunKeeper. Intel says the "ear-wing" design sits deep in the ear canal, continuously measuring heart rate and filtering out other types of noise.

While the BioSport isn't the first set of earbuds to measure heart rate, it's unique for its ability to draw power from the headphone jack of an iPhone or certain Android phones. Jabra's Sport Pulse Wireless earbuds rely on a Bluetooth connection, and must be charged periodically with a MicroUSB cable.

If you don't have a Samsung Galaxy Note II, Samsung Galaxy Grand II Duos, Samsung Galaxy S4, Samsung Galaxy S5, LG Nexus 5 or Motorola Moto X, you're out of luck.

Having one device fewer to charge is always nice, and being able to feed the data into third-party fitness apps is especially useful. But that brings up another caveat: Support for other apps besides Run Keeper won't land until next year, and it's unclear what those apps will be. SMS Audio is taking orders now for $150.
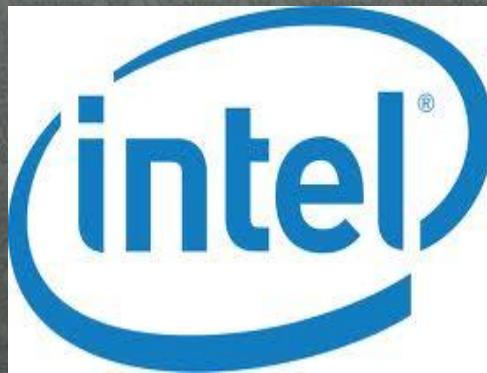
For Intel, this is one of the first actual products to spring forth from its newfound wearable efforts, alongside the recently launched MICA fashion band for women.

The chipmaker will also reportedly power the next version of Google Glass, and it's teamed up with luxury eyewear brand Luxottica for additional smart glass research. Intel has also shown off a shirt that gathers biometric data, but no product has come from it.

Intel was late to phones and tablets and is still struggling to gain its footing. It's trying to jump on wearable early to avoid making the same mistake twice.
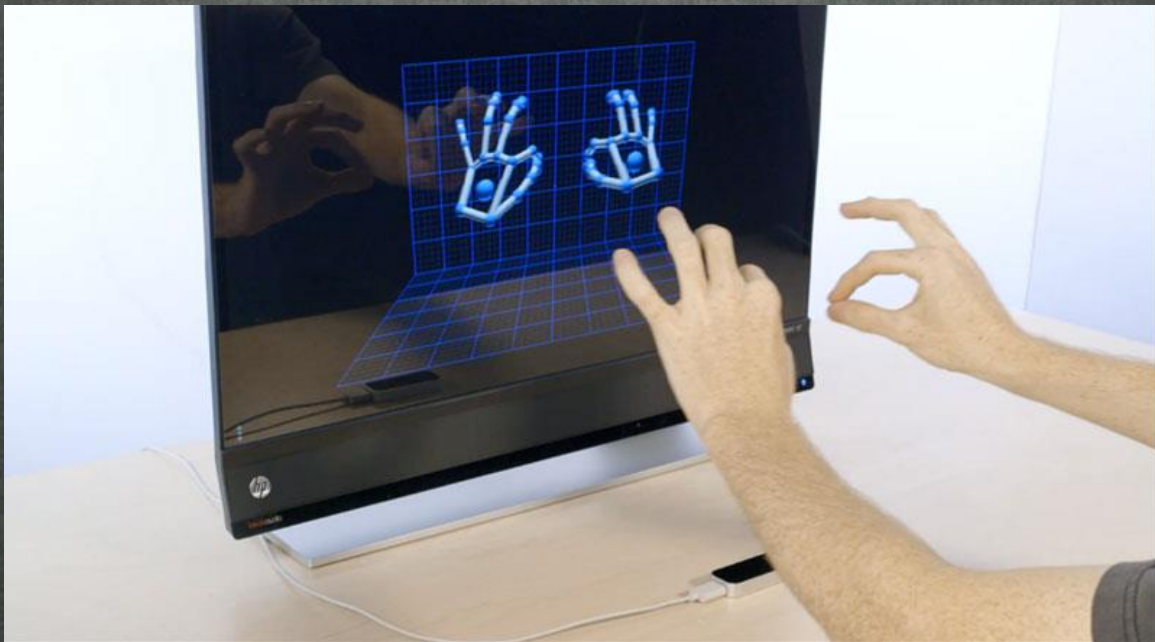
LEAP MOTION

Multi-touch desktop is a (miserably) failed product due to the fact that hands could get very tired with prolonged use, but Leap Motion wants to challenge this dark area again with a more advanced idea. It lets you control the desktop with fingers, but without touching the screen.

It's not your typical motion sensor, as Leap Motion allows you to scroll the web page, zoom in the map and photos, sign documentss and even play a first person shooter game with only hand and finger movements.

The smooth reaction is the most crucial key point here. More importantly, you can own this future with just $70, a price of a premium PS3 game title!

The Leap Motion controller is a small USB peripheral device which is designed to be placed on a physical desktop, facing upward. Using two monochromatic IR cameras and three infrared LEDs, the device observes a roughly hemispherical area, to a distance of about 1 meter (3 feet).

IT companies continuously register new patents. Here is the list of top 10 patent Leaders for 2010

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The LEDs generate a 3D pattern of dots of IR light and the cameras generate almost 300 frames per second of reflected data, which is then sent through a USB cable to the host computer, where it is analyzed by the Leap Motion controller software using "complex maths" in a way that has not been disclosed by the company, in some way synthesizing 3D position data by comparing the 2D frames generated by the two cameras.

Leap Motion Controller

The smaller observation area and higher resolution of the device differentiates the product from the Kinect, which is more suitable for whole-body tracking in a space the size of a living room.In a demonstration to CNET, The Leap was shown to perform tasks such as navigating a website, using pinch-to-zoom gestures on maps, high-precision drawing, and manipulating complex 3D data visualizations.

WINDOWS 10 BUILD 9888 LEAKS, INSTALL AT YOUR OWN RISK

Microsoft's Windows 10 has around 450,000 users on a daily basis, according to the software company.

A new blog post from the Windows team highlighted the statistic, also noting that it has collected 1.5 million testers for its preview operating system.

That number was 1 million on October 13. So, the pace of new signups to test Windows 10 has declined — it attracted its first million in two weeks — but also hows that interest has continued at some pace. That the OS preview has a current-signup, to active-user ratio of 3:1 feels robust.

Aul continued, promising "big things" in the next build of Windows 10, which will be shown off, and hopefully released at the company's January 21 event. TechCrunch will be covering the happenings live.

Windows 10 will see the spread of Cortana, Microsoft's Siri and Google Now competitor, into all versions of the new OS, including desktops, laptops and tablets. WinBeta recently posted an overview of a leaked version of Cortana on Windows 10, voice and all.

Issuing the latest Technical Preview build, Microsoft released a fresh feature to Windows 10, but on that's not new to Windows Phone: notifications. Known as the Action Center on Windows Phone 8.1, Notifications on Windows 10 operate in much the same way.

Featured as a button on the task bar, Notifications collects alert data from plenty of sources. "You'll see notifications from the system and apps - from new emails and invites to IMs, Face book posts and more - all in one place, so you don't miss a thing," Microsoft Director of Windows Program Management Gabe Aul wrote in a blog post.

FAMOUS AND FAVOURITE

PRANAV MISTRY

Birth of Pranav Mistry: Pranav was born on 14th May 1981 in Palanpur, India.

Education of Pranav Mistry: Pranav is pursuing Ph.D. at MIT's Media Lab at present. He is Masters in in Media Arts and Sciences from Massachusetts Institute of Technology & Masters of Design from IIT Bombay. Pranav completed his graduation from Nirma Institute of Technology in Computer Science.

Pranav Mistry's Career: Pranav Mistry was earlier associated with Microsoft as an UX Researcher. Later he has joined MIT Media Lab as research associate. He also demonstrates several innovations at TED India Conferences.

Pranav Mistry Innovation: Pranav has undertaken various career projects including:
- Mouse-less which is an invisible computer mouse?
  SPARSH which is a novel way to copy-paste data amongst digital devices.
  Quickies which are intelligent sticky notes that can be searched, located and which can send reminders and messages to your cellular device.

Awards Won by Pranav Mistry
- He has won many awards, to name a few are:
- Pranav was listed as one of the '50 Most Creative People of the Year 2010' by CREATIVITY 50.
- He stood Winner of 'Young Indian Innovator 2009' awarded by Digit Magazine.
- Pranav was also nominated for Forbes India's Person of the Year 2009.

MIND PUNCH

1.Below you will find some well-known eight-letter words, with only their endings remaining. Can you determine the words?

.....YEE
.....EGY
.....IGM
.....LSE
.....COM
.....BET
.....LEL
.....DEE

2.Place an arrow in each empty square. Every arrow can go horizontally or vertically and points to at least one square with a number. The numbers indicate the total number of arrows that point to them.

| 4 | | 3 | | 4 | | 3 | | 2 | | 3 | |
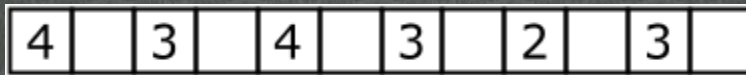
3.These words have had their vowels removed. Can you replace the vowels to make some vegetables:

cbbg
clflwr
ccmbr
crgtt
crrt
clrc

4 .What is represented by this BrainBat?

5.Fred can eat 27 chocolates in a hour, Alice can eat 2 chocolates in 10 minutes, and Kelly can eat 7 chocolates in 20 minutes. How long will it take them to share and eat a large box of 120 chocolates whilst watching a movie?

6.Brothers and sisters I have none but this man's father is my father's son.
Who is the man?

7. What gets wetter and wetter the more it dries?

8. What can travel around the world while staying in a corner?

9. Which word in the dictionary is spelled incorrectly?

10.What is as light as a feather, but even the world's strongest man couldn't hold it for more than a minute?

IT VITA

1. Who invented microprocessor?

2. .INI extension refers to which kind of file?

3. Who built the world's first binary digit computer?

4. What is VCM?

5. Who is co-founder Hotmail in 1996 and then sold the company to Microsoft?

6. What was the first ARPANET message?

7. Where are the headquarters of Microsoft located?

8. What does DOCSIS stands for?

9. Who designed the first electronic computer-ENIAC?

10. A Presentation means?

11. The term CRM means?

12. Why would a switch de used in a network in preference in HUB?

13. What should be done to successfully convert the format of an image from BMP to JPEG?

14. The term associated with the processing of comparison speed is ?

15. For reproducing sound the cd audio player uses a _____.

SOLUTIONS

IT VITA	MIND PUNCH
1. Marcian E Huff.	1.....YEE = EMPLOYEE .....EGY = STRATEGY .....IGM = PARADIGM .....LSE = CONVULSE .....COM = INTERCOM .....BET = ALPHABET .....LEL = PARALLEL .....DEE = ATTENDEE
2. System file.	
3. konrad Zeus.	
4. Virtual Connection Memory.	
5. Sabeer Bhatia.	
6. Lo	**2.** 4 ← 3 → 4 ← 3 ← 2 → 3 ←
7. Santa Clara.	
8. Data Over Cable Service Interface Standard.	**3.** cbbg = cabbage clflwr = cauliflower ccmbr = cucumber crgtt = courgette crrt = carrot clrc = celeriac
9. J.P.Eckert and J.W.Mauchly.	
10. Explaining the utility of products.	**4.** Split second timing.
11. Customer Relationship Management.	**5.** 2 hours. In one hour, Fred eats 27 chocolates, Alice eats 12, and Kelly eats 21. A total of 60 chocolates. Therefore 120 chocolates would take $120 \div 60 = 2$ hours. QED
12. To reduce the network traffic.	6. the man is my son.
13. Use the save as command.	7. A towel.
14. MIPS.	8. A stamp.
15. LaserBeam.	9. Incorrectly.
	10. His breath.

SENSE OF GRATITUDE

The Editorial Board expresses its sincere gratitude to all those who are responsible, either by being on the stage or behind the screen for the successful launch of the Magazine...