



Summer Spark

CMR INSTITUTE OF TECHNOLOGY

This issue is dedicated to the graduating students of CMRIT

I was travelling from the airport and was told it would take one hour ten minutes to reach the destination. I did not know what to do and used the time to write out a poem for you young people. It is titled "Fly with Knowledge and Courage".

Dr. APJ Abdul Kalam

"I look at all of you not merely as a graduating batch but also as young leaders. I hope each one of you will become leaders and entrepreneurs someday and will work towards strengthening our economy".

Dr. K. P. Gopalakrishna



Graduation Day

"GRADUATION"; A day every student looks forward to, fantasizes; and that day finally arrived. 17 May 2012, where our class was united once again to celebrate our achievements and togetherness. Graduation day is one of the best days of our lives, firstly because it reminds us of all the effort we put in while preparing for exams, writing assignments, group presentations, and project work. Secondly, it is now the time to be head on to the real world, with what we've been educated for, and to practically test our knowledge. On this special day, joy and sadness are the two emotions each student goes through. We realize that teachers are no longer there to guide us, boost us up in times of trouble and doubt, no chit-chats during classes, the thought of our friends going their separate ways. At the same time we are happy, we are now adults! We can put forth our own imagination and flavour in the work we are about to face.

The annual graduation ceremony had finally begun; A band played the graduation song as we marched towards the stage, in our black robe and cap, with pride and dignity. As we were seated, we heard the announcement that stated our Chief Guest "Dr. APJ

Abdul Kalam" is just few kilometres away from us. The entire crowd went ballistic and began to cheer, waiting eagerly for his arrival. It was around 5.30 PM. The band once again began to play, a fleet of cars started arriving, policemen and security guards in place, the teachers, monitors, parents and graduating students

ready to greet the greatest scientist of all Dr. ABDUL KALAM! A moment one can only feel, not express.

The dignitaries were finally seated and we were addressed with some inspirational speeches. Dr. Kalam explained us why he was slightly late, since he was on his way to CMRIT from the airport, as he was the chief guest for the 9th **Graduation Ceremony**. He gave us an insight about his college days and how he was as a student. There was one quote he has mentioned, which inspired us a lot; "*Do not feel defeated by failure. Work hard and you will accomplish many things in time.*" He also stated "*knowledge and courage are two powerful weapons to succeed in life.*" This statement was quite touching to us students and all those who were seated around him. All of us were still in awe that we were witnessing a speech made by such a great man, also known as "*the People's President*".

Dr. K. P. Gopalakrishna, Chairman, National Educational Trust, our Guest of Honour, addressed the students confessing that Dr. Kalam was his role model too.

Finally, the ceremony was over. Now, as we part ways we will always hold on to the memories shared with our dearest teachers and fellow classmates. As we move forth into the real world we will always remind ourselves that...

"When one chapter ends... a new and exciting one is awaiting to begin."

Sugarcane Bagasse – The fuel for the future



Increase on the world's energy demand and the progressive depletion of oil reserves motivate the search for alternative energy resources, especially for those derived from renewable materials such as biomass (Saxena et al., 2009). Increasing importance is being given to biomass as a renewable and environment friendly resource for energy generation worldwide and, in particular, in fossil fuel importing countries. One such resource of particular significance to a number of countries in the African continent is sugar cane.

This plant, as a commercially grown crop, is known to have the highest bioconversion efficiency of capture of sunlight through photosynthesis compared to other crops. Around 55 tonnes of dry matter in the form of carbohydrate compounds, fibre (lignocelluloses) and soluble sugars are accumulated in the cane biomass in commercial plots. On this amount of dry matter, only 50% in the form of sugars and fibre present in the harvested cane stalks are being exploited. Over the years, sugar factories in a number of countries have adopted energy conservation and efficiency measures with a view to generate either surplus bagasse for use as raw material for pulp and paper and particle board, or surplus electricity for sale to the grid.

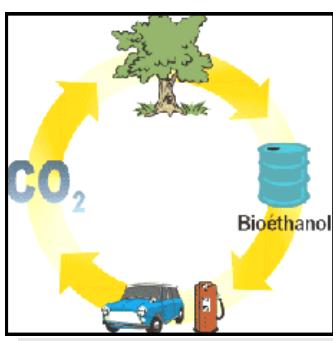
In countries like Mauritius, devoid of any fossil fuels, emphasis has been on the electricity export option. Significant progress has been made on this issue with the adoption of high pressure boilers and turboalternators operating at high pressures (up to 82 bars) and exporting electricity to the grid on a commercially sustainable basis. Such plants burn bagasse during the crop season and use coal as a complementary fuel, during the intercrop. In Mauritius, 11 cane sugar factories are in operation and 10 of them export electricity to the grid. Around 44% (or 750 GWh) of electricity in Mauritius comes from the sugar industry, of which 300 GWh is from bagasse. This amount is

projected to reach 550 GWh with additional investment in centralisation and modernisation of the cane sugar factories within the next 5 years.

However, evidence of further "green energy" production is visible in Brazil, where several non-conventional means such as Sun, Wind, Water and Nuclear Power are being harnessed to a large extent, to reduce the pressure on Oil and Thermal sources. Moreover, Global concern about climate change and the consequent need to diminish greenhouse gases emissions have encouraged the use of bioethanol as a gasoline replacement or additive (Balat et al., 2008). Bioethanol may also be used as raw material for the production of different chemicals, thus driving a full renewable chemical industry.

Bioethanol is produced from the fermentation of sugars obtained from biomass. Sugarcane is so far the most efficient raw material for bioethanol production: the consumption of fossil energy during sugarcane processing is much smaller than that of corn (Macedo et al., 2008). One of the world's largest ethanol producers, Brazil has been using sugarcane as raw material for large scale bioethanol production for more than 30 years (Goldemberg, 2007). In order to increase the amount of bagasse available for bioethanol production through the hydrolysis process, optimization of energy consumption of the conventional bioethanol production process from sugarcane juice must be carried out.

This can be considered to be a bright beginning and inspiration to other countries that could solve their power crisis effectively and that too without disturbing the ecological balance further.



Sudipto Das,
Sr. Lecturer,
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Project Glass – by Google

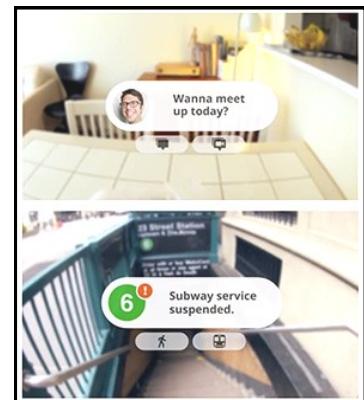
Project Glass is a research and development program by Google to prototype and build an augmented reality head-mounted display (or HMD). Though such displays for augmented reality are not a new idea, the project has drawn media attention primarily due to its backing by the major public corporation, as well as the prototype, which is smaller and slimmer than the previous designs for head-mounted displays. The first Project Glass demo resembles a pair of normal eyeglasses where the lens is replaced by a heads-up display. In the future, new designs may allow integration of the display into people's normal eyewear.

Project Glass is part of the Google X Lab at the company, which has worked on other futuristic technologies, such as a self-driving car. The project was announced on Google+ by Babak Parviz, an

electrical engineer who has also worked on putting displays into contact lenses; Steve Lee, a project manager and "geolocation specialist"; and Sebastian Thrun, who developed Udacity as well as working on the self-driving car project.

Sergey Brin wore a prototype set of glasses to an April 5, 2012 Foundation Fighting Blindness event in San Francisco. Despite the generally positive reception for the prototype, there have been numerous parodies and criticisms aimed at the general notion of augmented reality glasses, ranging from the potential for Google to insert advertising (its main source of revenue) to more dystopian outcomes.

Reference: http://en.wikipedia.org/wiki/Project_Glass *Arun Kolhapur MCA IV Semester*



Android for PC

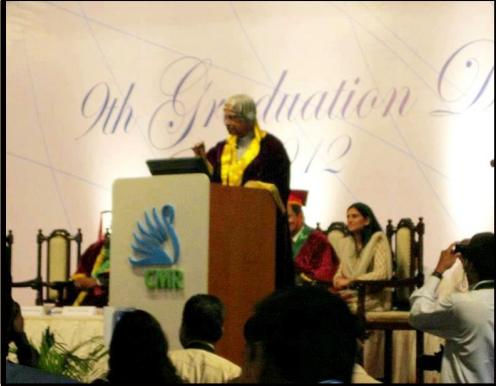
Do we need costly Android handsets to learn or develop android application? The answer to this question is a No. The reason is that the Android operating system can be installed in PCs or laptops in some virtual machine software like VMware or Virtual Box. This is different from the emulators that come with the Android SDK. The virtual machine typically emulates a physical computing environment, but requests for CPU, memory, hard disk, network and other hardware resources are managed by a virtualization layer which translates these requests to the underlying physical hardware. Typically, guest operating systems and programs are not aware that they are running on a virtual platform and, as long as the VM's virtual platform is supported, this software can be installed in the same way it would be deployed to physical server hardware. For example, the guest OS might appear to have a physical hard disk attached to it, but actual I/O requests are translated by the virtualization layer so they actually occur against a file that is accessible by the host OS. You can download the open source Oracle Virtual Box from the link <https://www.virtualbox.org/wiki/>

downloads and the next thing you need is an Android operating system image which you can get from the link <http://www.android-x86.org/download>. There are several versions available for download.

Virtual machines can provide numerous advantages over the installation of OS and software directly on physical hardware. Isolation ensures that applications and services that run within a VM cannot interfere with the host OS or other VMs. VMs can also be easily moved, copied and reassigned between host servers to optimize hardware resource utilization. Administrators can also take advantage of virtual environments to perform tasks like backup, disaster recovery, system deployment and basic system administration. The use of virtual machines also comes with several important management considerations, many of which can be addressed through general systems administration best practices and tools that are designed to manage VMs.



References: www.techtarget.com





Know your gadget— Pen Drive

A USB flash drive is a data storage device that includes flash memory with an integrated Universal Serial Bus (USB) interface. USB flash drives are typically removable and rewritable, and physically much smaller than a floppy disk. Most weigh less than 30 g.

USB flash drives are often used for the same purposes for which floppy disks or CD-ROMs were used. They are smaller, faster, have enormous capacity, and are more durable and reliable because they have no moving parts. Until approximately 2005, most desktop and laptop computers were supplied with floppy disk drives, but floppy disk drives have been abandoned in favor of USB ports.

USB flash drives use the USB mass storage standard, supported natively by modern operating systems such as Linux, Mac OS X, Windows, and other Unix flavors, as well as many BIOS boot ROMs. USB drives with USB 2.0 support can store more data and transfer faster than much larger optical disc drives like CD-RW or DVD-RW drives and can be read by many other systems such as the Xbox 360, PlayStation 3, DVD players and in some upcoming mobile smartphones.

Nothing moves mechanically in a flash drive; the term *drive* persists because computers read and write flash drive data using the same system commands as for a mechanical disk drive, with the storage appearing to the computer operating system and user interface as just another drive. Flash drives are very robust mechanically.

A flash drive consists of a small printed circuit board carrying the circuit elements and a USB connector, insulated electrically and protected inside a plastic, metal, or rubberized case which can be carried in a pocket or on a key chain, for example. The USB connector may be protected by a removable cap or by retracting into the body of the drive, although it is not likely to be damaged if unprotected. Most flash drives use a standard type-A USB connection allowing plugging into a port on a personal computer, but drives for other interfaces also exist.

USB flash drives were invented by Amir Ban, Dov Moran and Oron Ogdan, all of the Israeli company M-Systems, in April 1999. Trek Technology and IBM began selling the first USB flash drives commercially in 2000.

Trek Technology sold a model under the brand name "ThumbDrive", and IBM marketed the first such drives in North America with its product named the "DiskOnKey," which was developed and manufactured by M-Systems. IBM's USB flash drive became available on December 15, 2000 and had a storage capacity of 8 MB, more than five times the capacity of the then-common floppy disks.

Modern flash drives have USB 2.0 connectivity. However, they do not currently use the full 480 Mbit/s (60

MB/s) which the USB 2.0 Hi-Speed specification supports because of technical limitations inherent in NAND flash.

The USB 3.0 offers dramatically improved data transfer rates compared to its predecessor, USB 2.0. Though it was announced in late 2008, consumer devices for USB 3.0 were not available until the beginning of 2010. The USB 3.0 interface specifies transfer rates up to 5 Gbit/s (625 MB/s), compared to the 480 Mbit/s (60 MB/s) for USB 2.0.

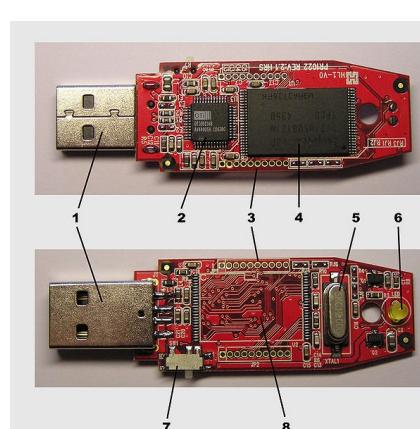
On a USB flash drive, one end is fitted with a single Standard-A USB plug. Inside the plastic casing is a small printed circuit board, which has some power circuitry and a small number of surface-mounted integrated circuits (ICs).

Typically, one of these ICs provides an interface between the USB connector and the onboard memory, while the other is the flash memory. Drives typically use the USB mass storage device class to communicate with the host.

There are typically four parts to a flash drive:

1. Standard-A USB plug – provides a physical interface to the host computer.
2. USB mass storage controller – a small microcontroller with a small amount of on-chip ROM and RAM.
3. NAND flash memory chip(s) – stores data (NAND flash is typically also used in digital cameras).
4. Crystal oscillator – produces the device's main 12 MHz clock signal and controls the device's data output through a phase-locked loop.

The internal mechanical and electronic parts of a Kingston 2 GB flash drive



1	USB Standard-A plug
2	USB mass storage controller device
3	Test points
4	Flash memory chip
5	Crystal oscillator
6	LED
7	Write-protect switch (Optional)
8	Space for second flash memory chip

Reference: www.wikipedia.org

Web Design made easy – Twitter Bootstrap

Do you really think you are bad at web design, but excellent working with the backend and have sound knowledge in web development? Do you always search and spend most of your time designing a web page layout or browse for web templates? Well not to worry! Twitter has introduced Bootstrap that is a css file with excellent styling and layouts where in you can even modify the code. It also includes essential javascripts like popup boxes, tool tips etc that you often use in your website.

Moreover, You are free to use Bootstrap, modify the source and distribute it.

Twitter's Bootstrap is an excellent set of carefully crafted user interface elements, layouts, and javascript tools, freely available to use in your next web design project. Online video tutorials also enable you in building a complete Bootstrap-based website.

When Mark Otto and Jacob Thornton released Twitter Bootstrap to the world in August 2011, their announcement explained what its value would be: empowering front-end developers to kick-start projects more efficiently and effectively.

The Bootstrap stylesheet provides an easy-to-implement 960 grid for efficient layout, as well as expertly crafted styles for typography, navigation, tables, forms, buttons, and more. To take care of everyday JavaScript touches, Bootstrap provides a well built set of jQuery plugins for drop-down menus, tabs, modal boxes, tooltips, alert messages, and more.

This is available at <http://twitter.github.com/bootstrap/>

Happy Coding!

*Swaroop S M
MCA IV Semester*

Bootstrap, from Twitter

Bootstrap is a toolkit from Twitter designed to kickstart development of webapps and sites. It includes base CSS and HTML for typography, forms, buttons, tables, grids, navigation, and more.

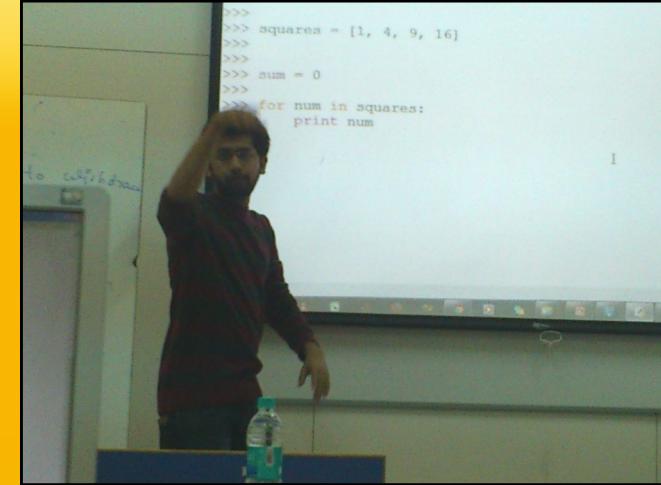
Nerd alert: Bootstrap is built with Less and was designed to work out of the gate with modern browsers in mind.

The Guide to Good Health

1. Manage your time.
2. Exercise regularly.
3. Cook right and eat right.
4. Manage your stress.
5. Consume at least one liter of water per 20 kilo of your body weight.
6. Balanced diet combined with exercise will give you a good result.
7. Maintain health according to BMR, total calories required, BMI and fat percentage.
8. Metabolic rate decreases towards evening and night so never skip your breakfast and lunch.
9. Physical health and mental health complement each other.
10. Simple walking 2 to 3 Kilometers each day greatly enhances your health.
11. Spicy, deep fried, fat rich, finely milled wheat flour and polished rice should always be avoided.
12. Use brown rice, multi grain atta (flour), whole grain cereals, pulses, steamed leafy vegetables, salad and fresh fruits.
13. Overweight and fat in the body are the main cause for heart attacks and other ailments.
14. Daily intake of 25 grams of soy protein can prevent heart attacks according to F.D.A.
15. Consume minimum 1 gram of protein per KG of your body weight daily to protect muscle mass. (for women 10% extra).
16. We need minimum 32 grams of fibre per day to keep our digestive track clean.
17. 50% of the ailments can be prevented by good nutritional foods.
18. 70% deaths and doctor visits happen because of heart attacks, cancer stroke and diabetes (India specific).

As the adage goes, “**Prevention is always cheaper and better than cure”**





Workshop on Google Search Engine – 7th April 2012



IBM Idea Cellular Conference ,Goa— 2012

The editorial team, are extremely grateful for your warm words of encouragement. We seek the participation of every member of the Department. We will be approaching you in the near future, to make the newsletter more interactive and informative.

We invite suggestions and contributions from students, alumni and faculties of MCA.

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"Be to our virtues very kind, be to our faults little blind".

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