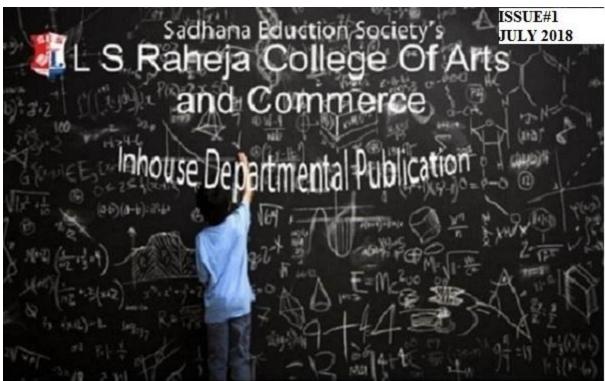


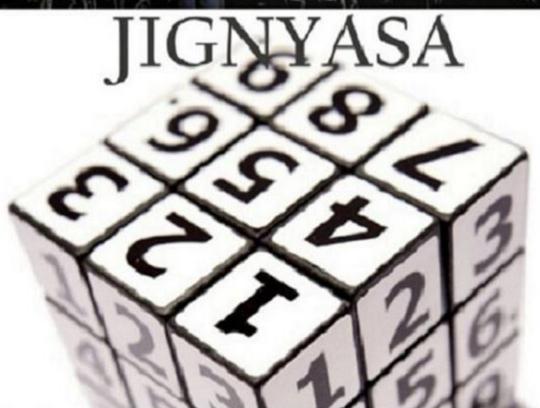
SADHANA EDUCATION SOCIETY'S

L. S. RAHEJA COLLEGE OF ARTS AND COOMERCE

Relief Road, Santacruz (W), Mumbai – 400054

INHOUSE DEPARTMENT PUBLICATION JULY 2018





Department of Mathematics and Statistics

SES'S

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NAME: JIGNYASA

DEPARTMENT: Department of Mathematics and Statistics

EDITOR: Dr. Seema Ukidve

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CONTRIBUTORS: 1. Dr. Seema Ukidve

Digital Forensics- A Technological Revolution in Forensic Sciences

Dr. Seema Ukidve

HOD, Mathematics, Statistics & Computer

Introduction:

Reading in the daily newspapers about nabbing criminals through modern methods of DNA testing and finger printing has aroused the interest of many a potential Sherlock Holmes Many a youngster today enjoy watching programmers like Cold Files and Detectives on Discovery channel, finding out how much easier it is to collect evidence about a crime today. Today, police officers and intelligence agents are utilising the expertise of forensic scientists with the latest investigative techniques to provide invaluable evidence of a crime. Computer Forensics World is a growing community of professionals involved in the digital forensics industry. It is an open resource, free for all to access and to use. It strongly encourages the sharing of information and peer to peer assistance.

To support this initiative, a range of interactive facilities are available, including surveys, forums and posting areas for information and papers. As with all user groups and communities, its success ultimately depends upon its members. Greater involvement by larger numbers will always create a more vibrant and useful experience.

New Method Developed to Capture Fingerprints on Difficult Surfaces:

Forensics experts cannot always retrieve fingerprints from objects, but a conformal coating process can reveal hard-to develop fingerprints on nonporous surfaces without altering the chemistry of the print. This happens because most of the techniques currently used for developing fingerprints rely on the chemistry of the print. Fingerprints are made up of a mixture of secretions from the body that reacts with different chemicals to form a visible or fluorescent product. Infrared and x-ray imaging also target specific chemicals left behind by the ridges and valleys in the skin.

Digital Forensics (The next generation of digital investigation tools):

A forensic investigation can be initiated for a variety of reasons. The most high profile are usually with respect to criminal investigation, or civil litigation, but digital forensic techniques can be of value in a wide variety of situations, including perhaps, simply retracking steps taken when data has been lost. Digital investigations and crime regularly cross

international and language borders today. Companies like Basis Technology's next-generation Odyssey Digital ForensicsTM products dissolve linguistic boundaries enabling analysts to search multilingually as easily as in English. The Computer Forensics Toolkit was created by eminent practitioners, with many years experience in the industry. The items included have been tried and tested in the field countless times, and are in everyday use. Odyssey cuts through technical complexities that digital investigators increasingly encounter: How to capture data from computers that may not be brought into the lab? How to search through data in languages the investigator doesn't know? How to take full advantage of the array of available digital forensics tools, each with its own proprietary file formats?

- a) Capture: the Media Exploitation Kit enables experts and non-experts alike to capture data off hard disks, while also documenting the integrity and source of the data.
- **b) Analysis:** Odyssey Digital Forensics Keyword Searching System's smart search crosses language and file format "barriers." Analysts need not know all the languages of the data to perform searches hat quickly bring significant files to the fore.
- c) **Portability** the Advanced Forensic Format (AFF) for storing captured data is open and extensible to make that data available for analysis by any tool the investigator chooses.

Digital Media Exploitation Kit (MEK):

Capturing Forensic Data from PC Hard Drives:

An ever increasing number of PCs are being used to commit or plan crimes. Digital investigations identify digital evidence and collect intelligence about the actions of authorized and unauthorized computer users. The typical digital investigation begins with removing the hard drive from a PC, copying the drive contents to another storage location, reinstalling the hard drive in the PC, and finally analyzing the contents. These are difficult and time-consuming steps that risk the loss of critical data and require substantial training.

The automated alternative:

Basis Technology's Digital Media Exploitation Kit (MEK) speeds up and simplifies the process of acquiring data from PCs to make a drive image. MEK is an easy-to-use forensics tool for capturing the entire contents of a hard drive without removing it from the PC

- Step 1: Connect the external MEK capture drive to the PC with the USB or FireWire cable
- Step 2: Insert the bootable MEK CDROM in the PC
- Step 3: Boot the PC

The remainder of the process is automatic. No specialized training is required, and the user need not perform any operation that risks damaging the hard drive or data. MEK stores a perfect copy of each PC hard drive on its own capture drive. It also stores forensic metadata,

such as the serial number of the drive and the time the data is captured. An MEK-produced cryptographic hash allows the integrity of the data to be verified. The user may also store a cryptographic signature of the data and other user-specified metadata.

Where can we use MEK?

MEK can capture data from any PC with an x86 CPU (i386 through Pentium, AMD Athlon, etc.), a bootable optical drive, and a USB or FireWire interface. MEK will capture from IDE, ATA, SATA, SCSI, USB, and FireWire drives on the target computer.

What's included in the package?

A bootable software CD-ROM for capturing the content of PC hard drives. An external hard drive with power supply, USB interface, and FireWire interfaces. Rugged drive options are also available.

The external capture drive:

The user can capture images from as many PC hard drives as fit on the MEK capture drive. The user can later off-load the image files from the capture drive to a repository and reuse the drive to capture additional images.

Flexible formats for hard-drive data:

MEK can capture the drive image in one of three formats of the Advanced Forensics Format (AFF). AFF is an open format for storing a compressed drive image. Typically AFF can store twice as many images as the raw format on a capture drive – more if the hard drives were not fully used. Metadata, and the cryptographic hash.

The Future Forensic Lab:

Several social and technological trends are converging that will profoundly change the forensic laboratory. Already, computer crimes are opening up a new area of criminal investigation that is becoming incorporated into lab methodology. The new breed of forensic computer experts will fall under the heading of behavioural specialists and will work closely with forensic psychologists in pursuit of the computer criminal.

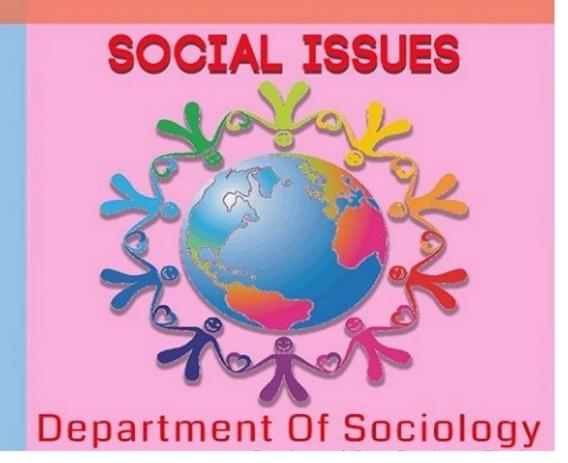
It is expected that the microscope will be partly replaced in the future with three-dimensional laser scanning equipment, such as a laser profilometry system. Currently, laser profilometry is slow and there are artefacts in the scanning. But these problems will be resolved. And the equipment will become faster and more accurate. Computerizing criminal investigations has been the result of departments investing in records management systems. These help the department process and track every bit of information captured by the Computer Aided Dispatching system and by the agency's officers. The information is fed into the records

management system and manipulated to help administrators do case management, analyse beats, track budgets, assign personnel, inventory the property and evidence room, and write statistical reports. Image processing systems are another facet of computer technology. Documents, photos, fingerprints, or crime scene photographs are scanned, digitized, and stored in the department's database. Photographs of suspects and crime scenes can also be taken with a digital camera. The picture is transferred to a color monitor, where it appears as an electronic image. When the operator gets the best picture possible on the screen, the computer freezes the image, digitizes and stores it. That information is then filed in a case file, an individual's criminal history file, or in the department's records management system. Open database connectivity technology is now providing access to a wide range of database technologies, such as neural networks and pattern recognition databases, which are being used to analyze shoe prints and tool marks. Soon, data-mining tools will have a significant impact. These new computer-aided analysis tools can link and chart case information, allowing the investigator to question the data and pose scenarios as well as suggest and follow possible investigative paths. As a result, connections that often took weeks or months to come to light are revealed in a fraction of the time.

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Sadhana Education Society's L.S. Raheja College of Arts & Commerce

Inhouse Departmental Publication



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L.S.RAHEJA COLLEGE OF ARTS AND COMMERCE

INHOUSE DEPARTMENT PUBLICATION

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DEPARTMENT: Department of Sociology

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EDITOR: Dr. Nandita Saldanha

CONTRIBUTORS: 1. Mrs. Samya Shinde

Women equality and empowerment: A look into India's sexist campuses.

Samya Shinde, Department of Sociology

The article raises a pertinent issue regarding equality in education. It tries to answer the question of whether Indian institutions are gender biased in terms of rules and regulations for the boys and girls especially with reference to hostels and library access. It discusses the Pinjra Tod campaign and its implications.

The doors of institution of higher education are open for both boys and girls as enshrined in the Constitution of India which gives both the sexes the equal right to pursue higher education. An integral part of higher education are the hostels where students throng to pursue quality education outside because of lack of access to higher education in their home town. However hostels across the country have different rules for women arguing that to keep girls safe, you need moral policing and keep them inside. In 2016 Hindu college, Delhi was in news for its hostel norms that were openly sexist. The rules listed in the hostel prospectus asked girls to dress appropriately according to 'normal norm of the society'; no visitors allowed without prior permission; only one night out a month and random checks by the warden- all in the name of safety and to maintain decorum. These rules are just for female hostels not male. These rules are found in both private and public universities for female students. In the College Of Engineering, Thiruvanthpuram, female students have to be back in their hostel room by 6.30 pm- which means that the projects they do can only have secondary research instead of technical since one will find it difficult to complete a technical experiment and monitor it- a denial of facilities provided by the institution for academic purposes- again in the name of safety -but only for girls. In St. Stephen's college, Delhi after 10.00 pm girls are literally locked into their rooms whereas boys still stay out hanging around in the dhaba within the campus. In Indraprastha College for women, Delhi there are checks on the length of the clothes, Neckline etc. so that students are not exposed in front of the male mess staff. Benaras Hindu University (there are 5 girls hostel) imposes curfew on the girl students by 8.00 pm as they are supposed to behave themselves well in a city like Varanasi. Girl students feel that the deadline is unfair because it prevents them from accessing the library and attending events on campus after 8pm. Unlike the girls, boys need to get back by 10 pm, and do not need permission to go out after that. After the main gates close, there's a roll call to ensure all the girls are in. If one is not in by then it's a serious violation of rules. In Amrita University, Coimbatore, students of Mass communication could not even go out to watch movie as part of the syllabus where they have to review movies. Infact the film review was taken off the syllabus. Also inside hostels, girls cannot wear three fourth pants and always cover their bottom with long tops and dupatta was a must.

Hostel wardens and college authorities defend their behaviour of moral policing by stating that they are 'protecting the modesty of girls'. They accept the fact that there are restrictions but the curbs on free movement are under the pretext of security. In College Of Engineering Thiruvanthpuram parents at the time of admission are made to agree to restrictive hostel timings.

There is deep rooted gender bias with several campuses simmering with protest and court cases as female students are facing discrimination in the form of higher fees, stricter curfew rules and other restrictions. No cell phones, no night outs, elaborate permissions to stay out late are stifling girl students across hostels in the country.

The Pinjra Tod campaign

It started in 2015 August when a notice issued by Jamia Millia Islamia cancelled the rights of the female students staying out of their hostels late at night. Students across Delhi came out on the streets in protest. Even after string of protest the rule was not changed but became more regressive. Thousands of students from Delhi University, Jamia Millia Islamia, Delhi technical University, Ambedkar University, Delhi, National Law University and Indraprastha University joined hands and took to the streets and thus began a movement.

Pinjra Tod (break the cage) is an autonomous collective effort to ensure secure, affordable and non-discriminatory accommodation for female students across the country. Pinjra Tod, a Delhi-wide student campaign seeks to break through the deeply sexist and suffocating rules for women. They work towards countering the 'security narrative' which is structured around securitisation of the bodies of women and patriarchal protectionism. Challenging the CCTV-driven police-security complex, Pinjra Tod demands that 'safety' and 'security' not be used to silence women's right to mobility and freedom. Their primary demands are against imposing of 'curfews' on women, demand for affordable accommodation for women, regularization of PGs, and constitution of an elected Internal Complaint Committees for prevention, prohibition and redressal of sexual harassment in the university space. The movement has no founders or leaders, it is an amorphous bunch of activists and students, who place themselves on a continuum of women's movements of the past and the ones that are yet to come. It does not have a formal structure of leadership-it is more about a cause than a face.

Unlike other feminist campaigns and movements, Pinjra Tod has been attentive to gender-based discrimination and its relation to other forms of discrimination based on caste and class. The reason Pinjra Tod is unique, says feminist historian Uma Chakravarti, is that it has been responsive to movements that challenge other forms of discrimination. "They have localized the movement to reflect South Asian patriarchy, which ties in with elements of caste, class and the politics of reproduction," Chakravarti says. Chakravarti, who taught at Delhi University for four decades, says every batch of female students would be jostling for space and their campaigning would be limited to the time they were students. "It was the teachers who would sustain the campaigns, by providing the history, context and continuation to it. But Pinjra Tod has spread to other institutions because of their sense of a feminist collective that can be replicated, as opposed to a rigid leadership. Their core team intends the movement to be issue-driven rather than leadership-driven," says Chakravarti.

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PENNY TALKS

Bachelors of Commerce (Financial Markets)

662.25 ISSUE #1 JULY 2018 IN-HOUSE DEPARTMENT PUBLICATION

SES'S

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EDITOR: Ms DIVYA KANCHAN

CONTRIBUTORS: 1. Ms DIVYA KANCHAN

Why Does a company go Public

Ms Divya Kanchan Coordinator, BFM Department



Meaning:

Before understanding why a company goes public, let's simply understand what going public means. It refers to a private company coming up with an IPO (Initial Public Offering).

Reasons and advantages for a company to go public:

- 1. **Improves brand equity**: Going public allows a company to strengthen its brand name in the market. It adds value and prestige to the credibility of the brand name. Any new venture if the company decided to enter will have public support and faith to start a new venture or expand the existing one. By issuing shares, lesser known and comparatively newer companies generates publicity and gets new business opportunities.
- 2. Additional funds through issuance of further stocks: Initial Public offerings allows a private entrepreneur to tap additional investors from the market. A company can then use this cash to further expand the business, be it in the form of research, infrastructure, or expansion. Moreover, banks will also be more willing to lend to listed companies than to closely held firms.
- 3. **Stock and stock options for personal:** When a company's goes public stock options can be offered to potential employees, making the company attractive to top talent. It is very difficult these days to attract and retain high quality managers and good employees for the company. Using stocks as incentives can help them remain competitive as an employer.
- 4. **Collateral acquisition and increased market share:** Instead of selling one's own business, publicly traded companies may someday decide to merge with or buy other companies. These IPOs are sometimes used as part of this payment. This practice frees up the company's liquid funds for other endeavours.
- **5. Liquidation:** The promise of increased liquid assets is one of the most significant reasons and advantages of going public. When companies sell stocks, their funds subsequently increase. The money received from these transactions enables companies to further pursue a number of targets. Listing gives an opportunity to

entrepreneurs to liquidate a part of their holdings. Also, if the venture has accessed venture capital in the past, listing gives an opportunity to venture capitalists to liquidate all or part of their holdings.



Things to be kept in mind while going Public. Are you ready...???

- 1. **Added responsibilities:** Once a company chooses to go public and offers their IPOs it dons added responsibilities as now the business venture is not just limited to handful people inside a close door.
- 2. **Sharing of control and transparency:** With going public, the entrepreneur must realise that the company can no longer work as per the choices and wishes of the entrepreneur. The board of directors will be answerable to number of shareholders who have purchased the shares and thus the company must be ready to maintain transparency. In the process the entrepreneurs must ask themselves questions like, whether the books of accounts are in good shape, will the transparency add value to the goodwill or affect it negatively, etc.
- 3. **Timing:** The timing of going public should be right. If the company announces it's IPO in a slump there is a high chance that it may get a lukewarm response. When a company attempts for IPO it should be big enough and reliable revenue streams. The new investor bankers who would approach the company after going public should also be studied well in advance.
- 4. **Managing shareholders worth:** In a public listed company there is a stock price, which constantly indicates the stock price which further indicates the value of the firm and this keeps fluctuating throughout the trading day. The entrepreneur will have to constantly strive to take correct business decisions and continually serve for the betterment and to enhance the shareholder's value.
- 5. Right Financial staff: Correct management and administrative personnel must be hired while the company chooses to go public. Employees who have experience in working with a public company will be in a better position to handle the business working of the organisation. Employees with could judgement, ambitious and tactfulness will be worth to be attached with the organisation. When stock options are provided to the employees retaining them becomes easier and adds value both to the organisation and the employee.