Hungry Kya?

*Residents of IIT Bombay have always had little choice on occasions when they've wanted to eat out on campus. **Saurabh Garg, S. Dheeraj Prasad, Amrit Kallar and Prateek Singh** discuss the problems and constraints that have been plaguing our campus food joints and the efforts that are being undertaken to tackle them.*

Two guys, Used-to and Cribboo, stumble into Staff-C at 12:00 midnight. Used-to: (ordering) One veg fried rice, one american chopsuey, and a veg noodles… Cribboo: Why do we "always" eat veg fried rice, american chopsuey, and veg noodles? Used-to: Because we don't get paranthas, burgers or pizzas anywhere in campus. Besides, the regular dishes here are as good as anywhere in campus. You can eat anything they serve here as long as it is hot, and there aren't any cockroaches or anything of that kind, alive or dead, in the veg items.

A long time passes. No food yet. Sitting under the "no smoking" sign, with a cigarette in hand, Used-to becomes more pensive than ever. Cribboo is still not over the paranthas.

Cribboo: What place is this, they don't even serve aloo paranthas? Not that I'm asking for chicken tandoori or shahi korma!

Used-to: My friend, you are being too fussy. Here we have two great places, serving food for as long as I can remember, at prices which have traditionally been accepted as affordable. Man, you get tea, coffee and coke, 24 hrs a day. That's almost a luxury, you know?

Cribboo: And how do you defend the hygiene here? Used-to: Don't you talk about hygiene! These people clean up more often than you take a bath! So what if the kitchen is a little dirty and stinks. Can it beat your room? In any case, they mop tables, usually after every meal and wash dishes. What more do you want? They don't have much of a competition, but that's a different matter altogether. We can't help but like it out here, understand?

Finally, the veg rice, noodles and chopsuey arrive. As they have dinner, Cribboo still keeps wondering about the aloo paranthas, hoping that some day there will be paranthas, burgers and pizzas on campus, and then he would not be forced to like the hot veg fried rice.Lousy story. Hopefully, it brings out the deplorable state of eating joints inside IIT. For years, there have been only so many places to eat out on campus. And for years, these places have been serving only so much of variety and quality for eating. And for years, there have been discussions about introducing new food

joints in the campus. Nothing ventured, yet. So, when hungry, Cribboos and Used-tos of IIT Bombay invariably land up at one of the two "Food Majors" of the campus. You guessed it! Staff-C and its teetering rival, the Chinks.

The Staff Canteen

For the uninitiated, here's news for you - the staff canteen is no undertaking of the IIT administrative setup nor is it monitored by the Non-Academic Staff Association (NASA); it's run by the IIT co-operative society and has been doing so since the early 60s. There are various employees of the IIT administration who are currently members of this society and who receive a share in the profits reaped from the canteen in the form of dividends. Staff-C does noget any funds from the institute, though the maintenance of the canteen building is supposed to be taken care of by our administration. Regular visitors know too well the pitiable state the Staff-C cooking area is in. Members of the co-operative society had submitted an application sometime around last February for getting the kitchen renovated but this proposal seems to have been caught up in red tape. Mere assurances are all that have come out of all the efforts to get the renovation work started.

Numerous students express that the food in the Staff-C is bad and that services are no better. Much on the contrary, the co-operative society claims that they don't get any complaints from students. In fact, they say, students like the food a lot! According to the management of Staff C, the Director, Prof. Misra, visited the canteen on a recent occasion and told them that the state of affairs here are much better than in the canteens of other IIT's. On hearing this, one can not help but feel more compassionate towards our peers in other IIT's.

Despite the prevalence of such conditions, the members of the co-operative society believe that the Staff Canteen is functioning quite smoothly at present. They further claim that the number of employees in the canteen is optimal and that the pay of the workers is fixed well in accordance with labour laws. In fact, the co-operative society has in the past approached the institute for a raise in hospital allowance given to their workers. One can only sit and feel sad about the deplorable manner the Staff-C is functioning in and the apathetic attitude of the instituteauthorities in maintaining reasonable standards of hygiene and conduct.

Our Chinese Corner

Better known as Chinks or Chinkos, it has been the place we love and also the place we hate. Chinks has traditionally enjoyed a prominent place in

every prospective GSHA's manifesto. Ever since the contract for Chinks was given to the Ming's proprietor last year, there have been complaints about the overall food quality and the hygiene inside the kitchen. The contract has already ended and is currently on an extension for 2 months. A quality monitoring committee has been setup to monitor the food quality and other problems during this period (Although planning towards setting up such a committee was initiated by the GSHA way back in August, it was only in the first week of January that this committee actually came into being). If, at the end of this period, things are found to be satisfactory, the contract might be renewed.

The people running Chinks seem to have their own share of problems (though this, in no way, justifies the fare they dish out!). As Yogesh, the Chinks owner, succinctly puts it, "Business is bad". His justifications are numerous: lower pricing than that in Staff-C; assorted problems in the working: from buying gas cylinders in black to uncertainty over the future of his contract. Sales in Chinks seem to have been affected significantly by the distribution of freshies to all hostels (Hostels 2.3 and 4 used to be the major customers till last year). A big blow to their business came with the installation of coffee vending machines in hostels which, they claim, has led to a decline of sales by close to 25%. Life became even tougher when the timings of Staff-C were extended till 4:00 am in the morning, further intensifying the competition they had to face.

Another major, though subtle, problem which every one notices is the ambience or the atmosphere of Chinks. Despite being modestly decorated, Staff-C wins hands down in this department. And let's not forget the added attraction of the Television (BTW, The television, along with a refrigerator, was gifted to Staff-C by Coke in return for their publicity. Chinks, on the other hand, is not permitted to enter into any such deals with the bottling companies). "With a 11-month contract, even a small investment towards the ambience is a risky venture," cribs Yogesh. "Forget ambience, something as urgent as a leaking roof is not tended to by the administrative authorities."

And to top all this, the much awaited Mood-Indigo turned out to be a damp squib for Chinks. The getting over of Livewire by 10:30 pm this year caused his one day sales fall from Rs. 35K last year to Rs. 14K this year ! Apparently, when the show used to go on till late, visitors having missed their last trains used to stay over resulting in soaring sales.

Don't we Deserve More Than This? Problems and "majbooris" apart, the underlying fact still remains that IITBombayites are getting a raw deal when it comes to "Pet Pooja" within their campus. Unappetizing noodles or long wait for the ordered food. Lack of choices to the stark absence of a

fruit juice stall. Drab sitting area in Chinks to often a smoke saturated "No Smoking" zone in Staff-C. Don't we deserve a little better?

"I still rate myself 2 to 3 on a scale of 5. Give me a little more freedom to work, a little security in the form of a longer contract period, a modest hike in prices and I'll deliver", says Yogesh. Besides he has also proposed to introduce some north Indian stuff like paranthas, tandoori roti, dal fry among others. The HGSC has now passed his proposal and the matter now requires only the consent of the Dean of Student Affairs. The situation is slightly bleaker for Staff-C whose management doesn't really see a problem in the way they function. Profit is not really a motive. So what would drive them to do the extra mile? Maybe, the pressure of retaining the existing customers.

With new food joints in the pipeline, this might just turn out to be the case. A new cafeteria has already come up near H10 and was slated to be operational from 16th January 2002. The cafeteria will serve Indian, Chinese veg and non-veg food at reasonable prices. It will remain open every day from 7:00 am till midnight. Great stress will be laid on maintaining food-quality, service standards, and hygiene, according to authorities. Things are going to be better in the near future. The paucity of good food joints has been brought to the notice of the authorities. There are plans to renovate the existing food joints, and work for opening new ones is underway. There are plans to open a health-food centre, where fruit juices among other healthy eatables will be sold at affordable prices. The project is in its initial stages, but paper work for the same is on.

Respite, finally? One certainly hopes so. But traditionally, it's the last mile that always proves the bottle neck. However, the different food ventures though long-delayed appear quite near completion. Chinks might soon start offering a better menu. A new food joint might soon come up near Hostel-8 serving fruit juices among other things. Staff-C might wake up to competition. Lots of wishes, you say? So what! Isn't the start of a new year a good time to make wishes?! On that positive note, wish you all a very happy and healthy new year!

It ain't fine, it's course !

*Not withstanding the evolution the whole process has gone through, course structure and content in IIT have remained primitive. and **Kislay Thakur and Lakshmi Narain** examine the bottlenecks in the whole system of undergraduate studies.*

COURSES : MODULES OF RIGIDITY

Though IIT boasts of an academic structure modeled along the lines of premier foreign universities, it is found woefully wanting when it comes to flexibility. "Electives" have nowadays become a misnomer, since each of them comes with strings attached. Dual degree students (Oh no! not again) of most departments hardly have this "golden opportunity". Courses related to their specialization eat into these slots. However, they are through with their compulsory courses by the end of their fourth year, and the fifth year is devoted completely to their project. Though credits indicate otherwise, a large majority of the students feel they can utilize some of their time by taking courses of their choice. The electrical department has a different story to tell. The B.Tech students are not allowed to take up certain PG level electives despite proof of competency (in the form of pre-requisites).

Some semblance of flexibility can be introduced if, in accordance with the Director's views, research-oriented undergraduate students are allowed to go easy on some superficial courses. They may as well use the time for research. However, as Prof.N.L.Sarda puts it, "Though the proposal is seriously being considered it cannot be implemented overnight. We need to examine the feasibility of the exercise in our system, though foreign universities have successfully incorporated it".

TO AUDIT OR TO CREDIT Another nagging problem is the eternal struggle between crediting and auditing courses. With regard to audit courses, Rule IV of Sec 1.4 of the rule book states, "If the attendance is satisfactory, the grade AU would be awarded by the instructor". However, most professors insist on assignments and examinations for audited courses also. In this respect, there hardly is any difference between crediting and auditing a course. This is unfair on the student as it amounts to shouldering the same "burden" without the credits showing up on the grade card. Prof.N.L.Sarda, Dean of Academic Programs defends the decision saying, "It is in the students interest that it has been done. If he performs miserably in the audit course, it simply won't appear on the grade card." So far, so good. But would the student have audited the course had he not been competent or enthusiastic enough in the first place?

OF COURSE! REVISION AND ASSESSMENT

After braving the rigid structure (or the lack of it), we now face the biggest hurdle of them all—Course content and evaluation. A lot of courses simply hog space without

doing justice to the time-content ratio. Prof. G.K.Sureshkumar (Chem. Engg.) says. "Left to myself, I would club Thermodynamics I and II together as a single course, since a significant portion of Thermodynamics I is a re-run of JEE syllabus. The same, applies to the three courses in mass transfer that undergraduates undergo." The "space" thus created can be utilized for electives or other courses of industrial importance. Surprisingly, the revision of the course content and structure in the Chemical Engineering department took place only a few years ago after a phenomenal gap of more than 10 years! (Now that's a lot of time in the age of Pentium IV!).

Another point of concern, has been the mode of assessment, the by-now cliched 20-30-50 split. Though this has been widely accepted by a majority of the faculty (for traditional reasons and lack of time to try out new techniques of assessment) a few like Prof. Sureshkumar have come up with assignment/project based evaluation schemes. He believes,"one cannot 'teach' anybody. Learning is important and the best one can do as a teacher is to create situations in which students can learn best." To make the courses more interesting and increase student enthusiasm for the course, he has adopted a novel method of teaching based on a Choose-Focus-Analyze method. Students apply concepts to their own problems. In this way, they are more likely to remember what they have learnt (To know more about his ideas, visit http://www.che.iitb.ac.in/faculty/gks/teaching/teachinnov.html) Such practices may break new ground in teaching and learning.

Another refreshing respite that many departments have witnessed is the spurt in industry involvement in their courses. Industry people have of late been teaching significant portion of the courses. Such moves should be encouraged to keep the students abreast with the latest happenings in the industry.

All said and done; Is the administration solely responsible for the glitches in the system?

Lack of student participation in providing feedback to the concerned authorities is the most important bottle-neck in improving the course structure. The only compulsory student interaction in the feedback is when students are supposed to fill in the course feedback forms, at the end of the semester. In the present scenario, there has been a major lack of participation from the side of students, and also there doesn't seem to be anything coming from the institute authorities, (which includes the department) to improve the present state. Open house is an informal platform in which both faculty and students share and discuss the problems faced in the department. But, unfortunately this important platform is left unutilized in most departments. There are several reasons which can be attributed to it. To start with, the student participation in such a forum is very weak. Also, at times some Department General Secretaries are very irresponsible and do not even bother to organize the open house.

PROPOSED SOLUTIONS

After a lot of thought to the whole process of gathering feedback and utilizing it for the betterment, some proposals have been put forward. To start with, committees should be

formed at two levels. The first committee would consist of 2-3 members of each year (which would include the CR) and would review the semester. Also 2-3 faculty members along with the HOD of the respective department would be part of the committee. After every semester the members of the committee would come together and review the semester. All the inputs received would be formally preserved and would be later discussed, when the DUGC (Department undergraduate committee) sends its comments to the UGPC (Undergraduate program committee). The second committee would consist of 4-5 students of the graduating class. They along with their respective faculty advisor, the HOD and other concerned faculty would discuss the program on the whole. They can talk about the relevance (or the lack of the same) of some courses taught over the period of the program. Also their recommendations, cribs could be discussed by the DUGC and if found effective, could be further recommended to the UGPC. (The above ideas are what the current GSAA, Manish Jain, has in mind to propose to the Dean AP.)

Also, each DGSec. should hold the open house in each semester and the proposals and cribs, should be formally noted down. And they should be discussed by the DUGC. From just being an informal get together of faculty and students, the idea of open house should be treated with more seriousness. Infact, the constitution of the student associations of various departments should be amended and it should be made the duty of the DGSec to organize the open house. Right now the idea of open house is just left to the discretion of the DGSec, its his/her choice to organize it. Once it becomes a part of the duty, it will betaken more seriously.

The student interaction needs to increase. It is a fact that students do not show as much enthusiasm in academics as they show in e.g. the hostel activities. The situation is bound to improve, once the enthusiasm and interest shown by the students increases. So, more innovative ways need to be considered to improve the situation apart from the usual ongoing processes and the ones proposed here. Any suggestions would be welcome. To sum it all, "If it is to be, it is upto thee." (With due apologies to Robert Schuller).

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Placements@School of Management

- **By Zishaan M. Hayath**

The **SJM-SOM** had their placements on the 3rd of January, 2002. Inspite of all the fears and apprehensions of a slump job scene, the placements worked out rather well with 47 of the 51 being placed during the two days of the campus interviews. The remaining 4 students are awaiting placements in the second round as a few companies are yet to come. According to the SOM students the placements went off well inspite of the class being larger as compared to last year's class of 38.

About 23 companies had come to the campus for the placements and leading the pack were **Trinity, TCS, GE-CAS, ICICI Infotech, McKinsey (KC), Aditya Birla, Cummins**. Companies like **TCS, GE-CAS and Cummins** who could not recruit anybody last year took 5,5 and 3 candidates respectively. This could be attributed to the fact that IT giants like **Wipro, Satyam, Oracle** who had recruited a major chunk last year, made a last moment pullout this time. A few companies which had been visiting the school regularly and aimed at a long term association and relationship were given preference.

The students of SJM-Som expressed their gratitude to **Prof. Koregaonkar** and the IITB placement cell for the help they had received from them.

Letters To The Editor

Making Humans out of Technocrats: a Rejoinder

- by Prof. Kushal Deb

Dear Editorial team of Insight...

I have been reading for sometime the articles published in your magazine "Insight" and have found many of them quite interesting. As a sociologist I have a special interest in reading the articles because it gives an insight into the lives and ways of students of this premier institution, i.e. your dreams, aspirations, frustrations, lifestyles.These insights I feel will help me to become a more sensitive and better teacher in class.

But an article published in the November issue titled "Making Humans out of Technocrats?" kind of shook my enthusiasm and hope and made me wonder whether I had taken the right decision of moving into a technology institute after having taught Sociology for 10 years in a university. I felt both sad and angry after reading the article. I felt a sense of anger because the HSS department had been criticized in a very flippant, insensitive manner and sad because I felt that the article didn't represent the views of all sections of the students' community. I had therefore dashed off an angry rejoinder to the editorial board pointing out how the article by Ms.Amrit Kallar was highly biased. But after meeting and discussing the issue with Ashish Goel (the chief editor) and Amrit Kallar (the author), I realized that your intentions were very different from what the article finally reflected. You all never really wanted to belittle and demean the HSS dept. Ashish and Amrit accepted that the article was very insensitive and apologized for the same. I understand that the intention with which the whole excercise was started by your Insight team was to get a feedback from the student community on the way courses are run in various departments at IIT Bombay so that a debate could be initiated on restructuring of courses.You hope that the debate would eventually lead to courses becoming more sensitive to the students' needs and interests.

The whole excercise seems laudable and I would like to end the matter by accepting your team's apologies. But I would still like to express my opinion on some issues like the role HSS courses can play in a technology institute, the delicate position the HSS dept. holds in a technology institute (i.e my perception and not the official view) and my reaction/opinion on some of the comments which students are supposed to have made about HSS courses (as related to me by Amrit Kallar and Ashish Goel).

Let me start with the unique status of an HSS dept in IIT. Although officially it is acknowledged that HSS dept has a very important role to play in IIT, a fact endorsed by various committees like, say, the Narayanan committee report, I feel that my department

would rank low in the status hierarchy if a general survey is done in IIT Bombay among students and the faculty. There may be various reasons for this perception- ranging from the fact that this is essentially a technology institute where the engineering departments would naturally hold the pride of place to the fact that in terms of getting funds, projects, consultancies; the contribution of the HSS dept would be marginal. I feel that even you all (the members of the editorial board) started off your survey among the students first with HSS department because somewhere consciously or unconsciously you all felt that it was a soft target which could be taken on, criticised openly with a minimum fear of a backlash.The risks probably would have been much higher if you all had taken off, say, discussing the electrical engineering syllabi and courses. This marginal or peripheral status is sensed by some of us in the HSS dept and we are not very comfortable about it. This makes us many a time touchy or even defensive. Now I had expected some of you (i.e.members of the editorial board) who have done a course in Sociology to sense this vulnerability and excercise a certain amount of sensitivity or empathy while writing the article. This was sadly lacking. When I teach the compulsory core course in Sociology at 2nd year B.Tech level, I deal with a topic pertaining to Secularism and Minority rights. It has been my endeavour to explain to the students in the class that the perceptions of any minority group are very different from that of the majority group. The 'need for recognition', of respectability is important and intimately tied up with their sense of 'identity'. A minority group given their marginal position is often also more sensitive and defensive.Their needs and their demands should never be equated on the same scale as that of the majority group. A similar scenario often engulfs the faculty of the HSS dept. Like a member of, say, the Muslim community who has to constantly prove his/her loyalty to the country in what s/he says, s/he does lest s/he be branded as unpatriotic; the faculty of HSS dept may also be constantly endeavouring to justify their existence/usefulness in an IIT. In such circumstances if an article flippantly makes comments like- "Lukka lectures" or "A few restless souls will chuck planes, scribble on desks, or initiate classroom conversations in the hope of intellectual stimulation", it really hurts and disturbs teachers who enjoy interacting with the young bright minds and for whom teaching is a passion. As you distribute copies of Insight to all, including the faculty, I think you should be more responsible and sensitive. This does not mean that you should not debate about courses, methods of teaching because unless we get honest feedbacks we won't be able to change both our courses and pedagogic techniques.

Let me deal next with some of the complaints about HSS courses as related to me by Amrit Kallar and Ashish Goel. They are as follows: teachers in HSS courses encourage rote learning for exams, some course contents are outdated, there should be more class discussions, there should be seminars, class presentations and that in Psychology lab work should complement theory taught in class. Some of these complaints, if genuine, are to be seriously taken up by us, the HSS faculty and we should introspect and make the necessary changes. But let me also give my opinion on some of these complaints as some of my own students have sometimes brought up these issues after class.

a) I would like to take up first the issue of rote learning. Some of the very bright, articulate and public/ missionary school bred students have sometimes complained to me that I should give open ended, general questions in exams and not questions from what I

have taught in class. This they felt would test their critical ability and general awareness. Questions from articles distributed in the class and those based on class lectures they felt lead to rote learning. I have two points to make here. First, there is a notion implicit in the arguements of those who want all open-ended questions in exams, which is that— "After all Sociology deals with social issues which are 'commonsensical'. So what is so special in the readings given in the class and the explanations given by the teacher? We know all this!" What these students don't realise is that each discipline has a history. Each social issue has been grappled with theoretically by academicians of that discipline in the past. The present generation scholars gain insight from these past explanations and utilise them for formulating their own theoretical explanations and concepts. It is, therefore, an ongoing process which helps us in our comprehension of social issues in all their complexities. So what are given as readings in class are usually lucid summaries of such debates. Issues concerning our society, our socio-economic life are of complex with multiplex relationships. Once these knots are untied, the layers unwrapped, things look simple and the knowledge seems 'commonsensical'. What the students seem to forget or are ignorant about is the ardous process through which certain explanations about social processes are obtained. If issues concerning life were so simple and uncomplicated then philosophers and enlightened sages wouldn't have spent their lives trying to comprehend what is "truth".

Next is the related issue of encouragement of rote learning. I am strongly against rote learning because it kills creativity. But there is a flip side to it. Avoidance of rote learning doesn't mean that all questions should be open-ended. In Sociology exams we always give one or two general questions out of, say, eight or ten questions. But we don't give all open-ended questions because there are a group of very bright English medium students who never attend classes but believe in 'just cracking' the exam paper. These students, given their IQ and GK, 'crack' these general questions and get above average marks. If all questions were open-ended, they would pass the course without attending classes and learning anything in class. This would be very unfair for all those who come for classes regularly, especially those from small towns or rural areas who are interested and highly conscientious but are not so fluent in written English.

b) Second, there are some students who want to be evaluated on the basis of class discussions or debates. They should realise that such an evaluation process will be possible only in an elective with about 15 to 20 students where one can know each student by name. How does one evaluate students in terms of class discussions and debates in a core course with 110 students and with irregular attendance? Also, there are always a group of very perceptive and unassuming students who don't indulge in discussions but write extremely nsightful and lucid answers. They would then lose out to those with the 'gift of the gab' who otherwise don't work hard for exams. So class discussions and debates should be encouraged so that experiences can be shared and classes made more lively. But evaluation based on class discussions is not possible for a core course.

c) I have had students advise me to make the examinations so tough that students who bunk classes will be forced to come for class lectures. Firstly, I really don't know how

questions are to be made so tough. Secondly, the aim of aSociology course is very different from an engineering course. Afterall you all are not studying Sociology so as to get a degree in the subject. The aim is to sensitize you all to the complexities of social issues, equip you to understand that there is no 'one reality' out there but that each social phenomenon can be understood from various view points depending on the theoretical perspectives which are being used. The aim is to inculcate a 'sociological imagination' in you so that whenever you look at a social issue, you look at it not in isolation but learn to situate it in the larger social, economic, political and historical context in which it is embedded and which gives it its form and meaning. Let us, for example, take up the Information Technology revolution and the crucial role that it is playing in our lives from the 1970s onwards. In my elective course on "Globalization", I try to explain why IT has become so important, the form the capitalist growth process has taken in present times (flexible accumulation), how IT helps to transform the production process (post-fordism), how financial networks have to some extent become independent of production sphere (through IT), the impact on 3rd world economies, its impact on cultures, etc. The aim of the course is therefore to situate the IT revolution in the larger scenario so that we get a holistic understanding of it. Therefore, when a sociology teacher is trying to develop certain skills, certain kinds of sensitivity in all the students in the class who are from varied background, i.e. urban, rural, English medium, Hindi medium; one can't have so called tough exams. Infact, I had mixed feelings when a student to whom I had explained some of my lectures in Hindi at my office remarked- "Sir, Mujhe abhi samaj me aya ke Sociology kya subject hai !" The aim therefore should be to make the course interesting and relevant so that word spreads and students attend classes in more numbers rather than making the exams tough.

d) Let me finally deal with the accusation of outdated syllabi. Outdated syllabi should be definitely abolished and I don't think the faculty at IIT practises it. In my core course, for example, we had highly stimulating discussions in the class on current issues such as - WTC bombing and the resultant Afghan war, the issue of who can be called a terrorist, on issues like reservations, secularism and I must say that the enthusiasm was genuine and the comments very sharp and enlightening. But there is another accusation in the article directly dealing with the Sociology core course and that is - "Sociology teaches some very obvious and obsolete theories of age-old sociologists like Karl Marx's labour theory to be memorised clause by clause". Such comments make me feel that probably we teachers are to be blamed for we didn't convey the ideas of Marx competently. This is because Marxism can never become obsolete and will remain highly relevant as long as there is oppression and inequality in our society. Secondly while teaching Marx in class we teach not just the labour theory of value (which is important as it brings out the root cause of exploitation, which is in the production process) but also deal with Marxian ideas on alienation, dialectics, class conflict, etc.

So my request to you all, the editorial team of Insight would be that a discussion on restructuring of courses is welcome and the feedback would help us reformulate both our courses and our teaching methods. However, the issue will have to be handled more carefully and the articles on restructuring of courses should be balanced and covering all shades of opinion.

Wishing you all the best.

Dr.Kushal Deb,

Dept. of Humanities and Social Sciences, IIT-Bombay

'Cult'ured, are we ?

by G.R. Dev and Kensy Joseph

The introduction of cult events at the **Inter-IIT Meet** was something that should have been done a long time ago. Participating in the competitions and interacting with people from the other IITs has been a rewarding experience: the competition is close, and they are more similar to us in tastes and behaviours and attitudes than most other competitors. It provided a nice atmosphere to find out what the other jokers were upto! To get together with the musicians and jam was just the kind of thing one does not get to do at other college fests, among others.

This is one arena where there is NO excuse for non-performance. The competition has had all the academic tensions, restrictions and problems that we ourselves face. They have as much time to practice as we do; and more importantly, there is no reason to suppose that they have significantly more talent.

There is no doubt that IIT Bombay has the ability to top a cultural meet. After all, we did place joint 1st with Xavier's at MI, and they are no mean competitors. But in spite of having an active cult scene throughout the year, in spite of having superb talent in several fields, we placed fourth out of six at Kharagpur. WHY???

Because for some strange reason, this meet was always infra-dig at IITB. A large proportion of our talented people never attended. The IITB representative at the Inter-IIT board meeting pressed hard for combining the drama and choreography events into a single event (inspired by our PAFs). IITB didn't even HAVE an entry for that competition!!! IITB didn't know that there were supposed to be two entries for photography. IITB didn't know the rules for half the events. IITB won the crowds at the Indian music event but was disqualified on technical grounds, which could have been avoided if we had known the rules well in advance. The IITB cult contingent didn't have berths on the 30-hour onward journey to Kharagpur. Someone needs to pull up their socks. Like the institute post-holders, to begin with. **MI** has two OCs. They don't need a third one.

Added to this was the strange (for lack of a better word) attitude of the sports contingent towards the cult contingent. Hapless cult contingent-members were rudely woken up on the train (after two consecutive night-outs here) with the ominous (cryptic?) words "sports", meaning "This is my berth. Leave." Bad taste in the mouth, eh? You bet. KK, the CL, after a brilliant Indian music competition, (Kedar and KK really rocked that night!), was asked by a member of another contingent why it was that our sports guys were never around at the cult competitions. Despite no position/participation in the big events, we still managed fourth thanks to Kathu, Adil, Tango, Kakkad and Vats.

If there is a *cultural competition* next time, it's a good idea to attend. It's good fun, to begin with. Rewarding, like we said. But more importantly, an opportunity to prove that our bloated egos about having a great cult scene at IITB are not gasbags. The proof of the pudding is very much in the winning!

Blow Hot, Blow Cold: simultaneously!

Amol Gogate takes a look at a revolutionary technology being developed in one of IITB's own labs.

What we are speaking about is the kind of 3-in-1 we had never heard of, leave alone seen. Its the size of a large suitcase, mounted on a trolley. It has two taps, giving hot water and cold water and there is an air-conditioner too! We look bewildered as an enthusistic Prof.Milind V. Rane explains the funda behing this unique device.

"Thermodynamics tells us that if we want to cool a substance, we need to remove heat for which we have to do work.Now this "waste" heat which we have extracted can in turn be used to produce heating." One remembers Warren Buffet,one of America's greatest investors who had once spelled the 2 laws which had helped him succeed in life : Rule 1. Never lose money Rule 2.Never forget Rule no. 1. The Heat Pump Group of the Mechanical Engg. Dept seems to have just replaced "money" in the above rules by "energy".

Another example is "Matrix Heat Recovery Unit" which uses an innovative compact design to heat fluids using "waste" heat from exhausts and can be used to heat a variety of fluids (see box). These designs have been presented at various national and international conferences and have been widely appreciated. The Heat Pump Group has already filed for a patent and will be filing for 7-8 more patents in another 6 months.In fact, the Matrix Heat Recovery unit has already gone commercial. There is a peculiarity recognizable in almost all the units being developed at the Heat Pump Lab near the Computer Science Dept building. All the units aim at Compact design, low cost, low installation charges and use environment friendly refrigerants (e.g NH3 does not lead to ozone depletion). This ingenious technology ofwaste heat recovery can reduce global warming,so critically required in the light of the damage done by reckless use of air-conditioners.

Air-conditioners are generally used only for a certain part of the day and it is here that the peak electricity demand shoots up, driving with it the electrical equipment cost (e.g. transformers as well as extra overheads charged by the electricity board). The remedy has already been developed by the Heat Pump Group. The idea is to store the cooling effect of air-conditioners when they are idle and use it when it is needed the most. Appropriately named the "Ice Bank Tank System", it leads to tremendous overall savings (see box). The compact design has resulted in a lower initial cost inspite of better quality and costlier materials being used as compared to conventional designs.

Considering the no. of new buildings coming up and the spiralling no. of AC's in the institute, perhaps the most urgent need of this device is in our campus itself.

An application widely required by the agricultural and food processing industry is that of drying. The "dehumidified air" system uses liquid desiccant. Prof. Reddy informs,"The liquid desiccant absorbs contaminants, that ensures air quality, a feature not inherently

available in the competing electric vapour compression system". Guess what, the regeneration of the dessicant is again done using "waste" heat (see box)!

The obvious constraint for using "rejected" heat is that there should both "cold" and "hot" devices available or required at short distances. However, such situations are abundant and hence the applicability can be widespread.

One can easily figure out the trend of innovation. Prof. Rane promises that there are more exciting projects in the pipeline .At the undergraduate level,two 4th year B.Tech students Mr. S.B.Sitaram & Mr. Vishwanath have been awarded the ISHRAE (Indian Society of Heating, Refrigerating and Airconditioning Engineers) scholarship of Rs. 25000 each, for a novel project aiming at "development of an advanced refrigerator which will simultaneously provide hot water for bathing at 45 degrees C ". All these devices are a must-see for a tech enthusiasts and some will be displayed at Techfest 2002. If Prof. Rane's enthusiasm is any indication, the Heat pump group is all set to break newer ground. In these days of growing concern over environment protection and resource conservations, we all remain equally curious to see the Heat Pump Group make greater strides in developing better,more efficient and greener technology.

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FOR THOSE WHO HAVE VISION MAKE IT TO REALITY

Premal Shah and Saumya Gupta explore the world of IDC, with a lot of help from a number of IDC students and faculty members.

Sleep - a very natural process indeed! '*DREAMS*' yet another, but how many of us 'feel' them, 'react' to them, 'realize' them? If your life is not aimless and you have a purpose then you have dreams and you work towards their realizations and only when your vision takes form, you have **lived** your life. So welcome to IDC, where people **live** their life, life in the realm of abstractness , vision and dream

Almost everytime, while walking through the apparently never ending corridoors, the **pencil** catches our attention, introduces a feeling of awe. It was in an attempt to discover for ourselves - the world of **imagination** that we barged in. What we found is a world with **creative** minds working day and night, **visualising ideas, expressing dreams - DESIGNING'.**

InsIghT takes a sneak peak at the life and times of the people at IDC, a unique entity, which has blended well and yet maintained its own identity and aura of creative brilliance at IIT Bombay.

IDC, established in 1969, is one of the premier design institutes in India. There are a few design schools of its kind in the entire country, fewer of its calibre, other notable ones being NID, Ahmedabad, CPDM, IISc Bangalore), IDDC, IIT Delhi and the Dept. of Design, IITG. IDC offers two year PG programmes for M.Des. in Product Design (PD) and Visual Communications (VC). Admissions are through CEED, a common entrance test, followed by creative assessment tests and personal interviews. IDC has an intake capacity of around 32, 16 each for PD and VC. Any IDC batch has a mixture of engineers, architects, fine arts professionals, interior decorators and more. Dhanush Pilo, a second year student in IDC, who's also a mechanical engineer says designers must have an individual flavour and an independent thinking process. A person must be motivated by the desire to create things right from the beginning. "The focus, more so, is on the ability to interpret and express ideas in a practical way, tangible to others," adds Anurag Rahul (VC Student, also an architect). "You need to be intuitive, imaginative and creative. At the same time, you should be able to think rationally and be practical to come up with realisations."

Product Design Technology has the capacity to be useful to people. Good product design harnesses this capacity into forms that are convenient to use. Ergonomic factors to be considered are the weight, stress and strain experienced at various joints while using the

product. Designing for such factors for a seemingly simple thing as the 'Ghamela' used by workers to carrry sand would involve a detailed study of video recordings of workers and consideration of many physiological factors. Designing also involves form exercises where the focus is not so much on usability as on appeal. It involves translating things so that they convey the appropriate feelings, ideas or values to create a sense of comfort for the peoplewho use them. Certain shapes invoke certain thoughts and have certain 'semantics' associated with them. Say for exampls, how a certain combination of colour and shape lends a different attitude to a watch - royal or cool, sporty or feminine!. How do you get "sleek" cars, bikes having 'power' and 'human' mobile phone handsets? Its difficult to estimate the silent impact these inconspicuous things together have on our mind. Designing is an open-ended problem which involves ideation, intuition, divergent thinking to come up with different alternatives and then rationally arriving at the most appropriate alternative.

Visual Communication is oriented towards solving problems in social, instructional, educational and information fields. It's about effectively using the different means of communication ranging from photography, animation, video, multimedia, print media, exhibitions to convey ideas effectively. Significant applications exist in the fields of human computer interaction (HCI), in designing interfaces that are intuitive, easy to navigate and use for all users with different levels of expertise. The challenge is to provide the user with the ability to express and convey emotions to increase the level of interaction, an example being the various environments and tones used by applications like Yahoo Messenger. Visual Communication is also a powerful tool for social cause. Our bland distance education programmes such as the UGC can improve a great deal and social messages will have a greater bearing if designed in new and better ways. Documentaries can be made interesting as well as educational. Anurag feels we have the ground technology and all the special effects. However, our tools for reaching out to others ranks poorly as compared to the West, simply because of lack of application necessary to have the same impact.

Its more of learning than teaching in IDC. There are very few textbooks. Most of the stuff is real and hands-on. IDC has four-semesters with ample project work and summer training. A student undertakes as many as three to four projects during his term, which are displayed at the Design Degree Show (DDS) which runs for three days. Project work includes redesigning products, designing for hypothetical problems, modelling and research and explorations into various design forms. In the DDS, industry people come and see their capabilities in terms of employment.

Information Storage - an overview

This article serves as a broad overview for readers not familiar with storage technologies and the storage industry. It reviews the popular storage architectures, and facts & figures of the market.Data storage is all around us! The devices that immediately come to mind are personal computers, portable computers, Palm Pilots, cellular phones and digital diaries. Beyond the horizon of these consumer devices that all of us use on a day-to-day basis, is the world of IT-enabled industries. A bank that holds our account and transaction information, an airline that holds ticketing information of every flight till date, an Internet e-mail company that stores mails of several million users, an Internet commerce company that stores personal & transaction data, a 10,000 people enterprise using workgroup applications such as Lotus Notes or enterprise applications such as ERP & CRM, a data warehouse, a streaming media company that offers millions of songs & videos to download, a video-on-demand company servicing millions of programs to a 100,000 viewers, a credit card company validating transactions of a 100 card swipes every second 24-hours a day, a Las Vegas casino recording a flow of a million dollars every hour; all these businesses rely on storage as their life and blood. Besides businesses, universities and governments of nearly all developed and developing countries are consumers of storage.

During a typical active working day in IIT, it will be interesting to note all activities that require either retreiving data or writing data on some form of data storage.Having taken a peep into the realm of storage needs, we note that each of these needs demands a unique set of requirements. A credit card company wants its storage to be available every second in a year and stands to lose millions of dollars every second of downtime! A data warehouse cannot afford to lose its data, even in case of a fire or a damaged disk, and therefore requires back-up of the data periodically. A bank on the other hand cannot afford to lose billions of dollars worth data even in case of unforeseen disasters such as a terrorist attack, thus requiring remote back-ups. A streaming media server or transaction processing system cannot afford slow read/write responses from storage and demand consistent high-performance. Apart from availability and performance constraints that directly come from end-user expectations, there are several issues such as cost of building such a storage infrastructure, inter-operability of devices, components and protocols in the company's storage landscape, scalability of storage to account for more business without losing performance, and ease of management of complex storage requirements within the single organization.

The diverse set of storage needs along with the varying requirements across the spectrum of enterprises hinted above, creates the storage market as we know it today. Some noteworthy facts about the market as a whole are as follows. Storage consumption is nearly doubling annually. Storage costs are declining at 36% annually. Total storage market revenues are rising at a rate of 16% annually, and at the end of 2001 stood at about $90 billion.In the rest of the article, we trace the development of storage architectures from the beginnings of third-party direct-attached storage to the rise of networked storage architectures, namely Network Attached Storage (NAS) and Storage

Area Networks (SAN). Until recently, there was a spirited debate between the adherents of NAS and the proponents of SAN; it is becoming clear now that these two architectures are not only going to co-exist, but that they are also converging over time.

Direct Attached Storage (DAS):

Before the 1990s, storage was a peripheral of a server. It was an afterthought, purchased from the server vendor much like the parallel port for a PC printer. Third-party, external, DAS had existed for nearly a decade, but it took off in the early 1990s (led by EMC) and enabled storage to be physically and financially dissociated from the server. It also resulted in intelligence migrating outside the server OS and into storage. This permitted storage to scale asynchronously with server processing performance. Another major innovation in storage in the early 1990s that helped improve reliability and performance of storage was Redundant Array of Independent Disks (RAID). However, due to limitations such as servers dedicating CPU resources to all requests from other servers for data kept on its DAS system, inaccessibility of DAS storage when its server was down, and most importantly storage management challenges posed by the distributed nature of DAS; networked storage was invented.

Network Attached Storage (NAS):

NAS devices are a combination of a server and a large amount of storage. The key element of a NAS is its "stripped-down" server called "filer" optimized for high-throughput storage operations. In other words, NAS is a server that serves the file system service. Other servers issue file-level commands to the NAS device, much like a web browser issues "URL-level" commands to a web server. NAS devices are inherently interoparable with a wide range of operating systems. They use the two main types of network file systems (CIFS of the MS world and NFS of the Unix world). A NAS device plugs-in to the existing Ethernet network, and can be operational within minutes and is easy to manage. However, since it uses the Ethernet-based TCP/IP network, the LAN and storage traffics share the same bandwidth resulting in performance degradations. Besides, TCP/IP not being designed for handling storage traffic, the processing burden on both ends & high rate of transmission packet-drops significantly degrades performance.

Storage Area Network (SAN): A SAN is a dedicated, high-performance network specifically designed for multiple servers to communicate with large storage sub-systems. In a typical SAN installation, a high-speed Fibre Channel (nothing to do with Fiber Optic!) network is built to connect a group of storage subsystems to a group of servers. Fibre Channel is a protocol built over a serial version of SCSI v3 and has become the de facto protocol for a SAN implementation. Unlike NAS, in a SAN, the file system is located on the servers that run the application. To avoid two file systems from different servers from unwittingly overwriting each other's data, each storage subsystem is partitioned so that a range of hard disk drives can be logically assigned to a specific server. Thus, while SANs allow storage to be seen by all servers on the network, they often resemble merely large collections of centrally located disks. The most important benefits of SANs are reliability, scalability, availability and performance. The turn-offs

however are high implementation costs, the immaturity of SAN technology, and the lack of SAN standards.

Driving without wheels, Flying without wings

-**by Sandeep Bala**

InsIghT presents one of the winning entries in the Journalism Contest organized by Tech GC

Levitation once a dream, now a reality. The effective use of magnets enables levitation of objects, albeit to a small height, above a base. One may ask:

*Electric and Magnetic Fields are essentially derived from the same force, so why haven't we heard of an 'Electric Levitation'? *We've all heard about a certain Earnshaw's Theorem. Does Magnetic Levitation violate that principle?

*Levitation is fine, but how does a MagLev train move forward?

A Violation? According toEarnshaw's Theorem, no stationary object made of charges, magnets and masses can be held in space by any fixed combination of electric, magnetic and gravitational forces. Its proof is very simple: A stable equilibrium of the test charge or magnet in an external field would require its total energy to have a minimum. However, the energy must satisfy Laplace's equation, whose solutions have no maxima or minima. (This is valid only for inverse square law forces. In our case, all the forces are of this type). Hence if a magnetic body were 'suspended' in the air above a magnet, it would never remain stable. In which case levitation should not be possible

Conflict Resolved: Two basic assumptions are involved in Earnshaw's theorem: 1. The body to be 'suspended' is made of charges, magnets and masses. The proof of the theorem is valid when the 'magnets' try to align themselves in the direction of the field. Diamagnets ($mu\_r < 1$) align themselves opposite to the magnetic field. Superconductors ($mu\_r = 0$) are also diamagnets. For these materials, the theorem does not hold good. There are no known materials with $e\_r < 1$, so the same cannot be said in the case of 'Electric Levitation'. Paramagnets have been levitated,

but only under extreme fields; then they behave almost like diamagnets. 2. The 'holding' system has fixed magnetic, electric field etc. If one implements a sort of feedback where if the body to be 'held' moves away, then change the field to bring it back to its 'equilibrium', then levitation should be possible. Magnetic Levitation essentially works around these assumptions of the theorem. In a certain laboratory in The Netherlands, water droplets and even frogs have been levitated!

The MagLev Train: Research on this 'dream train' has been going on for the last 30 odd years in various parts of the world. The chief advantages of this type of train are: 1. Non-contact and non-wearing propulsion, independent of friction, no mechanical components like wheel, axle. Maintenance costs decrease.

2. Low noise emission and vibrations at all speeds (again due to non-contact nature).

3. Low specific energy consumption. Faster turnaround times, which means fewer vehicles. All in all, low operating costs

. 4. Speeds of upto 500kmph

. 5. Low pollutant emissions. Hence environmentally friendly.

6. 20 times safer than air travel, 250 times safer than conventional railways, 700 times safer than road travel.The Propulsion System: There are quite a few techniques to achieve propulsion of which the most common involve the usage of Linear Induction or Linear Synchronous Motors. These may be viewed as motors in which the rotors and stators are "unwound" and spread out. Now instead of torques, we would have linear forces.

Current Projects

Germany and Japan have been the pioneering countries in MagLev research. Currently operational systems include Transrapid (Germany) and High Speed Surface Transport (Japan). There are several other projects under scrutiny such as the SwissMetro, Seraphim and Inductrack. All have to do with personal rapid transit.

Other Applications

* NASA plans to use magnetic levitation for launching of space vehicles into low earth orbit.

* Boeing is pursuing research in MagLev to provide a Hypersonic Ground Test Facility for the Air Force. * The mining industry will also benefit from MagLev. There are probably many more undiscovered applications!

The MagLev offers a cheap, efficient alternative to the current rail system. A country like India could benefit very much if this were implemented here. Further possible applications need to be explored.

THE BEST TIME TO START A BUSINESS MAY JUST BE WHEN NOBODY ELSE IS

Forget the dotcom gloom – the Entrepreneurship Cell here believes that the worldwide slump is just what the doctor ordered as far as separating the chaff from the grain of enterprises today is concerned

With that in mind, the E-Cell has announced **Eureka! 2002** – The International Business Plan Competition, organised in association with The IndUS Entrepreneurs (TiE). This year, the focus of Eureka! has shifted from being merely a business plan competition to being a full-fledged vehicle for entrepreneurship. With a special emphasis on actually starting up, this year's edition features prizes including free incubation at the T.E.N incubator in Silicon Valley or the Indiaco facility at Pune; free legal consultancy, chartered accountancy, web services and quality testing from companies like D&T, Gray Cary Ware Friedrich, Arthur Andersen and I Knowledge Factory. The cash prizes, totalling one lakh rupees, have been toned down to reflect this shift in emphasis.

As usual, Eureka! will be conducted in three phases: -·Executive Summary Submission – January 25 - Detailed Business Plan Submission – February 28 - Final Presentation – March 23 Further details can be found at *http://www.iitb.ac.in/~ecell/eureka.html* .

Other Activities

Besides Eureka!, the E-Cell has also been active recently with a number of other events. Cyrus Driver, an IITB-IIMA alumnus and currently Investment Analyst at Indocean Chase, gave the first of E-Cell's Distinguished Lecture Series on January 4. The talk, which focussed on a Venture Capitalist's perspective on business plans, was well-received by the audience.

The E-Cell, the IEEE AP/ED Bombay Chapter and the IEEE Bombay Section GOLD Program also organised a workshop entitled "Innovate or Evaporate: Reviving the Entrepreneurial Spirit Among India's Elites" on January 5. The workshop was conducted by IEEE *Distinguished Lecturer Prof V.K. Arora of Wilkes University.*

The Eureka! Startup Workshop was held on January 13. The ESW covered all the basics needed to start your own enterprise.

Since mid-October, the E-Cell library has also been active and opened for general use. Books may be issued on Wednesdays from the SAC library and returned any day of the week. The list of books may be accessed on the E-Cell site.

E-Cell events to watch out for

The E-Cell plans to revive the entrepreneurial spirit among IIT students and others with a massive barrage of events in the months to come. Watch out for:

- *Management Education Program (MEP)* – A mini-MBA certificate program covering the basics of management for people without a business background. MEP intends to augment the existing skills and impart new ones to IITians who are strong in technical and analytical situations but generally weak at strategy and marketing. Modules include Human Resources, Strategy and Accounting.

WTO and You – Lectures about the various provisions of WTO and how they will affect Indian industry and entrepreneurship. The series will be launched on the January 27 with talks by prominent economists and domain experts Prof. A.R. Nadkarni and Prof. Chandiramani. Prof Chandiramani is the author of "WTO and Globalisation – An Indian Overview".

- From Conception to Corporation – A series of lectures by Prof R.K. Lagu (Project Director, Technology Incubation, Center for Entrepreneurship; Adjunct Professor, Department of Electrical Engineering) on all aspects of entrepreneurship – from the basics of Business Plan Formulation to Organisation Building.

Myriad – Talks on careers and choices by the people who made those choices. Myriad had it's introductory talk by Jayanti Ghosh last semester. Careers featured this semester include Consulting, Software, Teaching etc.

Distinguished Lecture Series – Lectures given by prominent members of the VC community and entrepreneurs; Silicon Valley success stories sharing their experiences.

- *Competitions* – Case study competitions, online quizzes, biz games and more.

TECHFEST - 2002

- by Subramaniam V

*Less than 2 weeks to go and preparations are on at a war footing. The forces gather regularly to exchange info and plan their next move. The leaders indulge in heated rhetoric and make frantic calls. An Air Force Cargo Plane is being readied to transport equipment to the frontline. Not preparations for an all out war but simply those for The Biggest Technology Festival in Asia, **Techfest***

Techfest returns with a heady brew of star speakers, exciting **workshops and competitions** and a new definition for where the future will take us. You get a chance to interact with the best minds in the country, be dazzled by spectacular displays of technology from around the globe and get your hands dirty with everything from **robotics to forensics**. If you have had more than your fair share of the techie stuff, there's the **HUB** and **Technoholix** to help you unwind.

The **Lecture Series** promises to be one of the star attractions with a host of world-renowned speakers:

Dr A.P.J. Abdul Kalam is the undisputed father of India's missile program. He has breathed life into ballistic missiles like the *Agni and Prithvi* after being a trailblazer in the space department in the '60s and '70s. In the '80s he transformed the moribund Defence Research and Development Laboratory in Hyderabad into a highly motivated team. By the '90s Kalam emerged as the czar of Indian science and technology and was awarded the Bharat Ratna.

Mr Rajat Gupta is Managing Director-Worldwide of McKinsey & Company. One of our most eminent alumni, he is also on the advisory board of some of the most famous B-Schools.

Dr-ing Bharat Balasubramanian is Sr. Vice President (R&D), Daimler Chrysler and since 1998 Honorary Professor at the Technical University of Berlin.

Dr. P. G. Poonacha is the head of Signal Processing R&D group at Sasken, focussing on development of future broadband wireless technologies and multimedia technologies. Futureal is an event for the true technoholic. It brings the latest and best technological innovations in the fields of Bioinformatics, Nanotechnology and DNA Computing. It will feature talks by some of the top minds in the business from research institutes across India. The Lectures will be punctuated with documentaries, trivia quizzes and puzzles.

 One of the most prominent speakers is **Dr. Ehud Shapiro**, who recently received large media coverage for inventing a prototype of the first DNA Computer

The Airforce Exhibition is being organized with the support of Indian Air Force, Bangalore. The star attractions of this exhibition include an automatic seat ejection system used in aircrafts, a turbo engine used in aircrafts, a gun without a single nut-bolt, etc. Apart from these, there would be some models of bombs, missiles, etc. A full size model of a Mig-23, the backbone of the IAF, willgrace our Mech Lawns ..

*Techfest 2002 will see **Mercedes-Benz continue its long SL-Roadster** tradition with the launch of a stylistically scintillating and technically sophisticated sports car, the SL 500. The new open-top two-seater is the fifth generation of this exclusive Mercedes sports car series, the stuff that dreams are made of.*

The SL 500's vario-roof, a folding hardtop, turns the two-seater from an open-air summer roadster into an all seasons coupe at the touch of a button. This mean machine will be on display during Techfest in only its second appearance in India after the Auto Expo.

***Discreet Logic and FX Factory** will show you how Special Effects are created in the movies. They will demonstrate how some of the breathtaking scenes from Gladiator and Driven were created. The Breathtaking Visuals of the Colosseum, a mammoth army etc will be recreated live. A Body Suit used to animate characters in films such as Star Wars will be used to animate Cartoon Characters with your movements.*

***Panorama** is an endeavour to highlight the R&D work that is in progress at IIT which very few of us know anything about. The highlight of the exhibition will be a showcase of the Airship Project which aims to develop a helium based "Flying Ship" similar to the Zeppelin airship.*

A software simulation designed to study Electronic Warfare technologies will be on display and an officer from the Indian Air Force will talk about the latest developments in the field.

Competitions like Open Hardware, Open Software, Blue Planet and Contraption need no introduction. A new addition is the Financial Express IDP which requires the participants to design a Newspaper Dispenser with an Electronic Display connected to the Web.

the **HUB** will be the central arena for a whole range of on-the-spot activities. There's the Techno Treasure Hunt to get you up and running in search of the elusive clues which will guide you to the pot of gold! For all you inquisitive ones who just can't help but wonder … (read couch potatoes) we have lots of demos on rapid prototyping, speed guns, electronic warfare and the making of 3D games. .**Technoholix** will, as always, provide an opportunity to rest those weary grey cells after a long day of competitions and lectures. After all those brainy competitions, here's one with a difference, The Crystal Maze.

Loosely based on the famous serial, it will feature 15 amazing games ranging from the famous Laser Obstacle Course featured in Entrapment to Speed, Driven and Pathfinder. Ever wondered how all those wonderful effects were created in the movies? Technoholix will bring to you the foremost animation specialists in the world who will demonstrate exactly how all the stunning effects are created … from Star Wars to Gladiator. All in front of your eyes – LIVE!

Considering the dramatic reduction in the budget, there are many who wondered if Techfest 2002 would remain but a dream. They were absolutely right but paradoxically couldn't have been more wrong!!! For Techfest is but a Dream. A Dream, a Vision waiting to come true...

LaSTraw-2002

Problem Statement

CHALLENGE:

Design a Boat using straws(supplied by us). we shall place weights on the boat and the boat should safely bear the load, while it is being tugged through a distance of 1m in a water channel .

LIMITATIONS:

The boat should fit in a cuboid of length 30cms, width 20cms and height 7.5cms. The adhesive used should be applied on the joints only (i.e. the boat should not be plastered with any sort of thing).

WINNING CRITERIA :

The participants can place the weight anywhere, and tug the boat. Boat will be considered as sunk when the flag(Provided by us, of 5cms.) submerges completely. Participants will have the choice of sticking the flag any where on his boat. The Maximum load at which the boat safely crosses the channel is taken and divided by the weight of the boat. The structure with the maximum ratio of load borne to self weight is winner.

*For any further queries mail us at **lastraw@civil.iitb.ac.in.***

WATCH OUT FOR EHUD SHAPIRO AT TECHFEST-2002 !

-by Ravi Jain

A computer so small that a trillion of its kind fit into a test tube has been developed by researchers at the Weizmann Institute of science in Israel. And Dr. Ehud Shapiro who heads the research team will talk about it himself via a Video-Conference in FUTUREAL: The event on emerging technologies at Techfest.

The nanocomputer consists of DNA and DNA-processing enzymes, both dissolved in a liquid. The inventors believe it could ultimately lead to a device capable of processing DNA inside the human body, finding abnormalities and creating healing drugs. In the medium term, it could be turned into a tool capable of speeding up the currently labour intensive job of DNA sequencing.

From salesmen to **genomes**

DNA sequencing is part of the task of cracking the genetic code of interesting organisms as diverse as the pneumonia bug, the tomato and the human body to discover more about the way they function.:

Professor Ehud Shapiro, head of the Weizmann team, says that the DNA computer is an automaton, completing its work without human intervention at each stage of processing. He says that today it is limited to processing DNA which is synthetically designed. In the future it could process any DNA molecules.

The machine's input, output and software program are all DNA molecules. The Israeli team reads the output of the computer by running the liquid through an electrophoretic gel - the same process that produces the characteristic black and white bands of a DNA fingerprint.

previous efforts: DNA computing took a leap forwards in 1994 when Leonard Adleman of the University of Southern California used DNA to solve a problem commonly known as the travelling salesman problem.

This problem sets the goal of working out the fastest way of visiting a given set of destinations. Professor Adleman, co-inventor of the RSA encryption scheme which protects most secure transactions on the internet today, was exploiting the advantages of DNA computing over conventional silicon. DNA stores a massive amount of data in a small space. Its effective density is roughly 100,000 times greater than modern hard disks. And while a desktop PC concentrates on doing one task at a time very quickly, billions of DNA molecules in a jar will attack the same problem billions of times over.

Professor Shapiro and his team have taken a different approach. Their goal was not to harness the power of biological computing to solve weighty mathematical problems, but to build a nanoscale computer which takes naturally occurring information-bearing

biological molecules such as DNA as an input. Their success in creating a nanomachine that works on synthetically produced short DNA strands is a huge step towards this goal.

Death in Hostel-2

By Prateek Singh

New year not always starts on a happy note. On the 1st of January 2002, at around 9pm, a dead body was discovered in hostel-2, room 238. The person was later identified to be Mr. Suresh Ganpat Kakade, an alumnus of 1972 Mech Engg. batch.

The shocking discovery was made when Basant, the student alloted with room 238 returned after his vacations and found his room bolted from inside. There was no response even after repeated knocking. Ankur, another inmate of hostel 2, tried looking through the window pane when the window itself opened and he saw the body lying on its chest on the bed. The watchman was called. The Security Officer and the Dean SA were also informed.

The room was later opened in police's presence. The person had been dead for atleast 48 hours. The body was stiff and there had been some bleeding through the nose. The identity of the person was discovered using the alumni day registration documents present in the room. Apparently, Mr. Kakade had come over for the Institute Alumni Day on the 23rd December and had extended his stay for Mood-Indigo.

Mr Kakade was unmarrried, around 52 years of age. Apparently, he was travelling alone. He had gone to Hostel-2 and requested a room for the last week of December. Inmates of Hostel-2 who came in his contact for the brief period recall that he had a habit of enquiring about time repeatedly. He was also found to maintain records of the minutest of details of his everyday life on pieces of paper.

The post mortem report says that it was a natural death caused by acute myocardial infraction. All in all, the unfortunate incident has come as a shock to ever

It's a jungle out there !

By Ritesh Jhaveri, Zuber Mohanned and Karthik Ramkumar.

Down Memory Lane

- *MIs come. MIs go. Ever wondered how it all came into being? Here are some of MI's highlights through the years :*
- *1973 - First MI. No other significant Bombay festivals existed then. For those of you who wonder where the name Mood Indigo came from - it's inspired by one of Duke Ellington's Jazz numbers. 1976 - First "huge" MI. People think this is when it started. It was due to outstanding efforts put in by Adil Zainulbhai and Atul Kanagat (who are still working together as senior members with McKinsey and Company !) that MI76 performed so well..notwithstanding the National Emergency which was prevailing at that time.*
- *1981 - Abhay Nadkarni was in charge of this year's MI. The widely-celebrated duet of RD Burman and Asha Bhonsle performed at the Indian Music Night. Bonfires and jamming unto early morning hours were introduced into the MI culture. The fourth night of the fest this year started with a novel concept - a concert held solely to promote young, up-and-coming Indian Classical artists. This was followed by a rock show which again went through the night and ended with dawn. This was the music lover's MI. Wish we were around back then.*
- *1992 - For sheer drama, MI92 rules! It reads like a movie script. And no one could have put it better than Anand Sivakumaran, the head honcho in 1992 and the JAM maestro of that era. We shall quote him directly, "It was supposed to happen in December, but Ayodhya happened instead - so we postponed it to January. Then the Bombay riots took place - scores of people wanted to cancel it - so we postponed it even further. Finally we had it in March, believe it or not, just one week after the Bombay bomb blasts took place. Half the Core Group members weren't there. The entire team must have consisted of thirty people (Wow !). Live Wire went on till 5am. I shall never forget those five days - there were ego problems and fights before MI. But those 5 days we just worked and worked. Thirty people did the work of three hundred."*
- *The stories of ninety-two are just endless. Close Up and Colgate were the main sponsors. That's like Coke and Pepsi sponsoring an event together. Mind-blowing!*
- *1997 - Anupam Banerjee was the MI97 OC. It was in this period when MI started becoming synonymous with big money. From a seemingly paltry sum of around 5 lakh in 1993, the budget exploded to around 24 lakh in 1997. MI97 was bigger by far than the other Bombay fests. Malhar (The St. Xavier's Bombay fest) had a budget of 15 lakh and the rest were in the 5 lakh range.*

MI 2001 came, MI 2001 saw, MI 2001 conquered. As it's been through the years, our campus took on a completely new look when MI arrived this time (ahem, ahem..). Even

an alien sitting 123.44 light years away would've noticed it through his telescope. And what better theme to aptly describe us could we have designed : THE JUNGLE !

Well, for those who were there, fun had become a routine and for those who weren't there, man ! did you guys miss out on something!! Like last year, the fest began on Boxing day and ended o the 29th of December. Four days of unadulterated (well, we won't vouch for that) fun, music, games, babes (ahem ahem..) and hunks. To begin with. MoodI was marked by the usual competitions which are the backbone of any fest. One of the major crowd pullers, Antakshari, was hosted by Kavita Paudwal this year. And luckily the event was held in Convo. and not in LT where the concept of "sitting comfortably" becomes extinct (whew !!). There were great performances in dramatics, dances et al (but with hardly any IIT representation) and new events like hindi spoofing also made its debut this year. Literary events, our forte, were not swept by us although we did leave our mark. JAM had a huge audience (Guess people talking a hell of a lot of "CRAP" and making absolute fools of themselves in a very phunny way is always fun to watch!)

We guys here at IIT complain all year about the skewed sex ratio. Undoubtedly, interaction between the sexess one of MI's primary aims. Treasure Hunt (TH) is one place where the male Testosterone Hormone (TH) really runs wild. The novel concept of Mixed teams as always provided the ideal platform for some of the "intros" lurking around here.

Horizons did a great job with infi workshops. The Play "DANCE LIKE A MAN" by Lillette Dubey was EXCELLENT to put it mildly and left the audience overwhelmed and asking for more. Keeping a crowd of IITians quiet for two hours and actually egging them into a standing ovation is no mean feat (unfortunate but true).. With the usual dance workshops (once again, an IITian's dream come true), Magic, Astronomy, Poetechnology, Scrabble, Warli Painting et al made its mark this year. "Celebration", by Astad Deboo and the Hula Group from Manipur introduced the audience to a new dimension of dance and culture, and was a fitting prelude to the Prize Distribution Ceremony.

The Dog show had a surprisingly great response with dogs wanting to show off left, right and centre. For those who wanted to delve in the deeper darker regions of the human mind, the team had organized a screening of "BAWANDAR", a movie by JAGMOHAN MUNDHRA, an ex-IITian, with the man himself coming over for a lecture.

VOGUE was expertly hosted by GARY with his DUDE-ish voice but the main attraction was the fashion show (like duh !!). Even though the weather was pretty cool outside inside the temperatures were soaring with every round. SNDT, Juhu stole the honours from last year's winners H.R.; but for the audience it didn't matter who won - They had had their share of goodies (I mean the freebies given out..what were you thinking, eh ?).

The informals were seasoned by the usual Blind Date, added with a dash of other events like Mr/Ms. Personality and a hell of a lot of other things to keep everyone busy. The wet

and wild nature of people was unleashed in the AQUA GAMES and RAIN DANCE. DISCO was conceived this year and it was a major hit (music + lights + babes...need I say more ?).

Mood Indigo has attained great heights since its conception and one of the foremost reasons is THE PRONITES. The classical nite which has become synonymous with the fest was graced by Ustad Amjad Ali Khan weaving magic with his sarod and stunning blue kurta. Ronu Majumdar on his flute and Niladri Kumar with his fusion group kept the mood flowing into the wee hours of the morning. INDIAN OCEAN mesmerized audiences with their pulsating music and then EUPHORIA kept the audience in a trance with their awesome performance. LIVE WIRE was rocked by PARIKRAMA this year. With the only complaint being the early time (those guys in the supreme court have surely ne'er been to a rock show !) when they had to shut down. The ROCK SHOW ended with a dazzling display of fireworks left all who had graced it on a high.

This is the usual but this year the departments that rarely get mentioned did a commendable job. The publicity was so far reaching that MoodI was actually being looked forward to by lots of colleges and "aam junta" who had never even heard of us before. The food stalls were as cheap as "Le Meridien" (just kidding) but hey, this is the time to make money too ! And finally the idea of BONFIRE took its roots and that meant that people who wanted some privacy in that corner of the woods couldn't get any. The bonfire will always have a special place in the hearts of those who were there.

Disclaimer: We do realize that the article may seem "gender-biased" in parts and plain "chauvinistic" sometimes. For that , we apologize. But hey, give these dogs their day(s).