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AMEN

The Association of Mechanical Engineers

NEWSLETTER

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"One can never consent to creep when one feels an impulse to soar."

– Helen Keller

AME PG council comes into force

The Association of Mechanical Engineers (AME) made a new beginning this summer with the constitution of PG council in the month of May. Started with three executive members, the PG council came much to the relief of all PG students who always felt lack of representation of the PG student community in the earlier AME councils. The PG council swung into action as soon as it came into force.

As was always the need of the students, the PG council organized an interaction session with the seniors on placement in the first week of May. In this session, the students from passing out batch addressed various issues like placement statistics, companies' profile, selection procedures, resume making etc. They also answered all related queries of the first year PG students.

Recently the PG council welcomed the new batch of PG students and introduced AME to them after the address by the DPGC. The PG council lend its support to Counseling Service (CS) in organizing an informal interaction session for the new PG students just a day before their academic registration. Here, the old PG students briefed the new students about various core and elective courses, credit system, relative grading, thesis related issues etc. and cleared all their doubts.

Now, as the campus breathes afresh into the new session, the AME also has a plethora of events lined up for the new students. With Freshers' Night this month, it is just the beginning…

The current members of the New Executive Councils are:

PG Council

President	Deepshikha Priyadarshini
General Secretary	Bhavesh Kumar Sharma
Treasurer	BRB Vijay Kumar

UG Council

President	Prashant Saxena
General Secretary	Sumeet Kale
Treasurer	Shreyansh Jain
Web Secretary	Shyam Sunder Nishad
Cultural Secretary	Shadab Anwar
P.R. Secretary	Nikhil Pandey
Chief Editor	Shubham Goel
Joint Editor	Shubhankar Ghosh

From the President's Desk

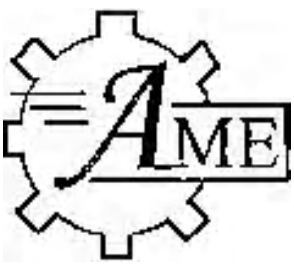
The wheel of academics has once again been set into motion and its time for us to welcome the new members of our family. Association of Mechanical Engineers welcomes all the new post graduates to the Department of Mechanical Engineering and eagerly awaits the joining of the new under graduates. A.M.E. is an association comprising all the students of the Department of Mechanical Engineering. Among its main aims comprises providing exposure to the mechanical engineering students about the various upcoming areas of technology and research, providing them much needed exposure to real life engineering problems by organizing industrial tours/ visits, lectures on topics of general interest and seminars of specific interest, maintaining database about opportunities for higher studies, acting as a catalyst for motivating students to take up higher studies in frontline research areas and organizing social gatherings like freshers' welcome, farewell to the passing out batches, and also some competitions. Earlier only consisting of a single executive council now it has been bifurcated into two – an UG council and a PG council - for managing the functioning of the association in a better way. Some events are organized independently and some in collaboration. The executive council consists of students with a Faculty member who guides us. Presently Dr.P.Venkitanarayanan is our Faculty Adviser.

DEEPSHIKHA PRIYADARSHINI
PRESIDENT,A.M.E.,PG COUNCIL

Invention Blues

Who choked on their own invention?

Hubert Cecil Booth, the inventor of the vacuum cleaner. In testing how it would work, he was sucking dirt by mouth through a piece of material and ended up with a lungful of dust!



"Classical and iterative methods for Finite Element matrices"

In linear FEM analysis the cost of solving the system of equations (**[A]{x}**={b}) rapidly overwhelms other computational phases. Much attention has therefore given to matrix processing techniques that economize storage and solution time by taking advantage of the special structure of the stiffness matrix. If **[A]** is stored and processed as if it were a full matrix, the storage and processing time resources rapidly becomes prohibitive as N (no. degrees of freedom) increases.

There are two different classes of methods for solving systems of simultaneous linear equations:

Direct methods are usually variants of the classical Gaussian elimination method. These methods involve the individual matrix elements directly, through matrix factorizations such as LU or Cholesky factorization. Direct methods are usually faster and more generally applicable than indirect methods, if there is enough storage available to carry them out.

Iterative methods produce only an approximate solution after a finite number of steps. These methods involve the coefficient matrix only indirectly, through a matrix-vector product or an abstract linear operator. Iterative methods are usually applied only to sparse matrices. Iterative methods are usually applicable to restricted cases of equations and depend upon properties like diagonal dominance or the existence of an underlying differential operator.

Following are the iterative methods for sparse systems of simultaneous linear systems:
Biconjugate gradient, Biconjugate gradient stabilized, Conjugate gradient squared, Generalized minimum residual, Least squares, Minimum residual, Preconditioned conjugate gradient, Quasiminimal residual, Symmetric LQ

The objective of the all these methods is to solve (**[A]{x}**={b}) or min||{b}-**[A]{x}**||.

N Senthil kumar(2nd yeAR MTECH(FTS))
B R B vijay kumar (2nd year MTECH (SMD))

INTERNSHIP EXPERIENCE PUZZLE

Summer 2k6 saw it all, the identity card losing its identity getting washed off in the first Mumbai shower, the rains that would somehow refuse to take a break for some 3-4 days at a stretch, the blasts that shook the entire nation or the anger of the mob due to desecration of a statue and Mumbai paid a dear cost for the lines of black that were found on the statue-crores gone in one single day. And more than all that, it watched us all growing up from undergraduate students to professionals, either in companies like ITC, HLL, GSS, Tata Steels or in research laboratories all over.

Working in Geometric Softwares Solutions Ltd., Mumbai, I realized how things are done in the real world. It was not the first time that I was fiddling with the keyboard trying to build an executable but here things were completely different. Working in the product delivery section of the company for prestigious firms like Godrej, the specifications and needs of the client used to change quite often, sometimes every day and if you don't do your work in a well organized manner, you might find yourself doing it all over again. Also, you had to think of the code being used long after you are gone by someone who will be using the stuff for the first time. So everything needed to be very systematic and organized in a well defined manner. Long weekends cut short, the evening sessions getting extending into the night slots which were meant for fun and the vending machine running dry.

Working like bulls all day long and glad to get away from the office at night it sometimes felt a lot like missing college life but still the experience that we had over at the place was amazing. Co-operating people, a joke or two being cracked every now and then in some nook and corner of the office and just in a fraction of second it is all silent but the sound of the keys getting pressed coming from all the cubicles.

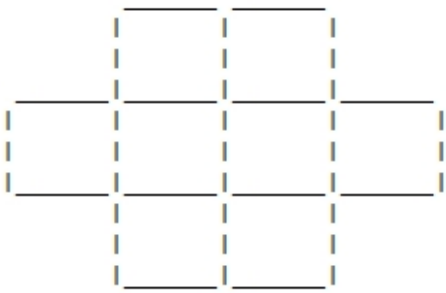
It was much like a dry run of the program before the final code is tested. Guess we all are ready now to get absorbed at some place and do what we do best.
Zero compilation errors, building executable now!

Abhishek Anand (Y3008)

PUZZLE

Using a piece of scratch paper, cut eight rectangular cards that will fit in the boxes below. Write a 1 on the first card, a 2 on the second card, and so on, until you have the cards numbered from 1 to 8.

The challenge in this puzzle is to place the number cards in the rectangles below so that no two consecutive numbers are next to each other horizontally, vertically, or diagonally. For example, if the 5 is placed in the far left box, then the 4 or 6 can't be placed in the box directly to the right of the 5 or the two boxes that are diagonally above and below the 5.



Shubhankar Gosh (Y5443)

Invention by Accident
The microwave oven was invented by accident, when Percy Spencer found that his chocolate bar had been melted by an experiment he was running on radar systems. He immediately started experimenting successfully on microwaved popcorn