Reports

Report on the Pune workshop on LaTeX and free mathematical software (July 2003)

S. A. Katre, Manjusha Joshi (coordinators)

A workshop on LaTeX and free mathematical software was organised by Bhaskaracharya Pratishthana (BP), Pune, India, during 9–14 July, 2003. It was mainly sponsored by the international TeX Users Group (TUG) with a generous grant of USD 2100 (Rs. 99,036), as a joint activity with the Department of Mathematics, University of Pune, and was partially supported by the DSA programme of UGC in the department.

The focus of the workshop was on the LaTeX software for mathematical typesetting. In addition, a number of other free mathematical software packages were introduced to the participants. The workshop was organised for participants from the educational field (mainly from universities and colleges) with some knowledge of TeX and a background in mathematics.

This is the first workshop of this kind organised in India which dealt with TeX topics as well as free mathematical software running on Linux. The participants were very enthusiastic and many of the participants worked on into late nights to practise and assimilate various topics on LaTeX and mathematical software.

Organising committee

Chairman: C. S. Inamdar, BP.

Co-ordinator: S. A. Katre, Dept. of Mathematics, University of Pune.

Co-ordinator: Manjusha Joshi, BP.

Member: Amitabh Trehan, M.G.A.H.V., Delhi.

Speakers and topics

1. Mr. Amitabh Trehan (IIT, Delhi): Linux, Pdfscreen, Devnag, LaTeX: indexing, table of contents.

2. Dr. S. C. Phatak (IoPB, Bhubaneswar): Gnuplot, Xfig.

3. Dr. Surendran (Pune): TeXmacs, WIMS.

4. Dr. S. A. Katre (Univ. of Pune): TeX utilities.

5. Ms. Manjusha S. Joshi (BP, Pune): PStricks, POV-Ray, references in LaTeX.

6. Dr. Ajit Kumar (St. Xavier's College, Mumbai): PSfrag, DCPic, MuPAD.

7. Dr. A. V. Jayathan (TIFR, Mumbai): Macaulay 2.

8. Dr. M. S. Bakre (Univ. of Mumbai, Mumbai): Scilab, Euler, Octave, software installation.

9. Mr. Sumit Bharadwaj (IIT, Delhi): MathML, Prosper, BibTeX.

10. Mr. Niyam Bhushan (Delhi): Linux, publishing workflows, typography, image enhancement & conversion, Plone.

In addition, on 8th July, before the workshop proper, for some participants having a limited background in TeX, a lecture by Amitabh Trehan to introduce the basic concepts in TeX was arranged. There were also practice sessions based on exercises in LaTeX prepared by S. A. Katre and Manjusha Joshi.

Software provided

Registered participants were given two CDs, notes on various topics discussed in the workshop, a file with register of 100 pages, a pen, a few blank papers, badge and *LaTeX Tutorials: A primer to LaTeX 2$_\varepsilon$*, prepared by the Indian TeX Users Group (Editor: E. Krishnan), 2002.

The CDs contained the following software:

1. TeX Live version 7 (containing Devnag, PStricks, Pdfscreen, PSfrag, PSplot, etc.).

2. POV-Ray, MuPAD (light version), Gnuplot (for Windows), Macaulay 2, CoCoA, Maxima, TeXmacs, WIM Server, Scilab, Euler, LaTeX suite, MathML, TeXnicCenter.

Some software discussed in the workshop was already available in Red Hat Linux, such as Xfig, GCC, Gnuplot, Octave.

The notes given to participants included installation of the software on the CDs, assignments on TeX, introductory material on LaTeX, etc.

Most of the mathematical software on the CD was discussed during the workshop. While MuPAD is general purpose mathematical software, Macaulay 2 and CoCoA are specialized software for algebra. Gnuplot and Xfig are useful for drawing figures. The insertion of the figures drawn using this software in LaTeX documents was discussed during the workshop. TeXmacs is a front end which gives LaTeX output for some of the mathematical software, such as Maxima, POV-Ray, Gnuplot, SciLab, etc. Browsing by subject and education level is possible through the WIM Server for MuPAD, Maxima, Macaulay 2, PARI/GP, GAP, Yacas, Octave, etc., in which output of the software is TeX-formatted text. A mathematical document prepared using LaTeX can be put on the net using utilities such as Itex2mml, by conversion to MathML.

Information on participants

Participants were from 18 institutes and universities located throughout India. There were in all 41 participants, out of whom 26 were outstation and 15 were local. There were in all 9 female participants. The participants outside Maharashtra State came from Goa, Delhi, Chennai, Chandigarh, Meerat, Ahmedabad, Daman, Dharawad, Patan, Jhansi, Darjeeling, Agra, Patiala. Participants within Maharashtra came from Pune, Mumbai, Aurangabad, Sangamner, Verdha, Shegaon. Outstation participants and Speakers were accommodated at SET Guest House, Univ. of Pune and BP Guest House. The local participants comprised of past students (now teachers in various colleges in Pune) and current students of the Department of Mathematics at the University of Pune. The full roster of participants is included at the end of this report.

The participants were given a certificate of participation with a logo of the TEX Lion.

Technical arrangements

A total of 20 computers were arranged for practicals, with an LCD projector for lectures and demonstrations etc. One classroom was temporarily converted to an additional computer lab, in which 14 computers were arranged. Six computers were arranged for practical work in the main computer lab. Other than these, three computers were available for speakers for their work regarding the workshop, Internet and mail. Nine computers were on a LAN and were also connected to a laser printer. Printing facilities were provided to the speakers.

Parallel activities

PLUG Linux Stall: In the city of Pune, a local group called the PUNE LINUX USER GROUP helped us with installation of Linux and other software on the temporary machines. They also put their stall at the institute, where they made Linux CDs available at a nominal charge. About 20 participants took advantage of this arrangement.

Springer Book Exhibition: Springer, one of the leading publishers of scientific books, took advantage of the opportunity of the workshop. They exhibited books on LaTeX, typography, MuPAD and several other topics.

Acknowledgements

The organising committee is grateful to the international TEX Users Group for the timely and generous grant of USD 2100 without which it would not have been possible to hold the workshop at the national level.

Some information regarding possible topics and books for the workshop, especially related to LaTeX, came from the mailing lists `tugindia@tug.org` and `indic-dev@tug.org`.

We are thankful to the eminent scholars Mr. C. V. Radhakrishnan (Trivandrum), former secretary, TUGIndia, and Dr. E. Krishnan (Trivandrum), Chairman, Free Software Foundation, India, who encouraged the organisation of the workshop and helped in the initial stages. Dr. Kaveh Bazargan (Trivandrum & U.K.), member, TUGIndia board, also helped in various aspects of the workshop.

We are thankful to Prof. A. S. Kolaskar, Vice-Chancellor, Univ. of Pune, and Prof. N. S. Bhave, Head, Dept. of Mathematics, Univ. of Pune, to consider the workshop as a joint activity with the department.

The support from PLUG, Pune, regarding Linux installation requires a special mention. We thank Mr. Bhamburkar who made available seven diskless machines for the workshop in the nick of the time, without any fee. We also thank Mr. Sudhanwa Joglekar, Dr. Surendran, and Dr. Gangawane who helped in the computer related matters, and Prof. Kalidoss for providing copies of the book *LaTeX Primer*, prepared by TUGIndia.

We thank the office staff of BP: Ms. Veena Kulkarni, Mr. S. R. Gosavi, Mr. Sunil Sawant and also the Trustees of Bhaskaracharya Pratishthana for all the help they extended for the organisation of the workshop.

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 texwork.html

Appendix A Participants

Outstation participants:

1. Sartaj Ul Hasan, I.I.T. Bombay, Powai, Mumbai.

2. Mr. Malay Kumar Ghosh, North Bengal University, Darjeeling.

3. Mr. Partha Sarathi Debnath, North Bengal University, Darjeeling.

4. Dr. Sanjeev Kumar, Institute of Basic Science, Agra.

5. Mr. Bhatoa Jogindar Singh, Govt. College, Daman.

 6. Mr. C. S. Salimath, Karnatak University, Dharwad.

 7. Sanjay Choudhary, Institute of Basic Science, Khandari-Agra.

 8. Dr. Manjusha Gandhi, Shri Sant Gajanan Maharaj College of Engineering, Shegaon.

 9. Mr. Narahari A. Patil, Shri Sant Gajanan Maharaj College of Engineering, Shegaon.

10. Mr. Rupen Pratap Singh, Ch. Charan Singh University, Meerut.

11. Dr. A. K. Desai, Gujarat University, Ahmedabad.

12. Mr. Udayan Prajapati, St. Xaviers College, Ahmedabad.

13. Mr. Habeeb Basha Syed, I.I.T. Bombay, Powai, Mumbai.

14. Mr. Arunkumar Patil, I.I.T. Bombay Powai, Mumbai.

15. Mr. Subhendu Bhanti, North Gujarat University, Patan.

16. Ms. Anju Rani Gupta, Bundelkhand University, Jhansi.

17. Dr. Avanish Kumar, Bundelkhand University, Jhansi.

18. Mr. Israr Ahmad, Jamiya Millia Islamiya, New Delhi.

19. Dr. Y. S. Valaulikar, Goa University, Goa.

20. Dr. Sushil Kumar Tomar, Panjab University, Chandigarh.

21. Mr. Rajesh Agarkar, Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya, Wardha.

22. Ms. Hema Godbole, Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya, Wardha.

23. Dr. H. S. Kasana, Thapar Institute of Engineering and Technology, Patiala.

24. Dr. S. K. Panchal, S.N. Arts D.J.M. Commerce and B.N.S. Science College, Sangamner, Dist. A. Nagar 422 605.

25. Shibsankar Karmakar, North Bengal University, Darjeeling, 734430.

26. Malay Kumar Ghosh, North Bengal University, Darjeeling, 734430.

27. Dr. S. K. Nimbhorkar, Dr. B.A. Marathwada University, Aurangabad-431 004.

Local participants:

 1. Mr. Madhusudan Tandale, V.I.T., Pune.

 2. Ms. Rupali Deshpande, V.I.T., Pune.

 3. Mr. Pratul Gadagkar, University of Pune, Pune.

 4. Dr. Radha Bhate, University of Pune, Pune.

 5. Mr. A. S. Nanajkar, Fergusson College, Pune.

 6. Mr. D. N. Sheth, Sir Parashurambhau College, Pune.

 7. Ms. Fathia Mohammed Al Samman, University of Pune, Pune.

 8. Mr. Rajanish Malekar, National Defence Academy, Pune.

 9. Ms. Anuradha Gadre, University of Pune, Pune.

10. Mr. C. S. Nimkar, N. Wadia College, Pune.

11. Mr. Pramod Shinde, N. Wadia College, Pune.

12. Ms. Sunita Patil, University of Pune, Pune.

13. Ms. Nita Kankane, M.I.T., Pune.

14. Mr. Ashok Bhavale, Sinhgad College of Science, Pune.

15. Mr. Hemant R. Pawar, National Defence Academy, Pune.

All participants.

Speakers: Prof. S. A. Katre, Sumit Bharadwaj, Dr. Jayanthan, Niyam Bhushan, Dr. Ajit Kumar, Amitabh Trehan, Manjusha Joshi.