

Web Enhanced Learning: initiatives at IIT Kanpur

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## Opensource freeware initiatives

- non conventional approach
- design, specification, implementation and testing goes together
- development- iterative in nature
- number of developers- changes with time.

- Sometimes funded by Govt.
  - Indic computing tools on Linux - IIT Kanpur, NCST
  - Vic, Rat, Wbd in LBNL and UCB
- Sometimes spawned by donations in different forms by industry
  - OpenOffice (Star Office code donated by Sun)
- Sometimes by cooperative efforts of volunteers
  - Software developments at [jakarta.apache.org](http://jakarta.apache.org)
  - Linux OS

Academic institutions has played a vital role in many such developments.

## Brihaspati - virtual classroom

- Decision to develop - Dec.2001, Persons involved were novices.
- Java servlets based on open source free application server
  - At that time, none of opensource freeware web application for virtual classroom - based on Java Servlets.
- built basic servlet based system, studied various systems and technologies for implementations.
- design was scrapped in favour of using opensource framework (Turbine- <http://jakarta.apache.org/turbine>) in July 2002.
- first build - released in Jan 2003.
- Brihaspati- used experimentally in IInd sem 2002-03 in IIT Kanpur.

- Full fledged used by all the interested faculty in IIT Kanpur for supporting classroom teaching - from Ist sem 2003-04 session.
- All basic features- course material upload, publish, user management, discussion, chat are integrated.
- Currently focus is on SCORM compliant learning object creation and management.
- Emphasis- on reuse of already existing opensource freeware components.

### **CVS repository to access development code**

*:pserver:guest@202.141.40.84:/home/cvsroot*

module name *brihaspati*

login *guest* No password needed

### **Brihaspati test installation in IITK**

*http://202.141.40.84:8080/brihaspati/servlet/brihaspati*

Login *guest* password *guest*

### **Website for Brihaspati**

*http://home.iitk.ac.in/~ynsingh/tool/brihaspati.html*

Some screenshots

Netscape: Index

File Edit View Go Communicator Help


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Location: <http://172.31.44.84:8080/brihaspati/servlet/brihaspati/action/myLogin>

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| <a href="#">Brihaspati Synch</a>                       | Instructor | 0 Unread Messages |
| <a href="#">Documents for Development activities</a>   | Instructor | 0 Unread Messages |
| <a href="#">Digital Communication Networks</a>         | Instructor | 0 Unread Messages |
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Join the [brihaspati\\_iitk](#) group at [yahoo.com](http://yahoo.com) for discussing any aspect of this software.  
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Netscape: Publishing Module

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Bookmarks Location: <http://172.31.44.84:8080/brihaspati/servlet/brihaspati/template/PublishModule.vm/topic/lect+notes>

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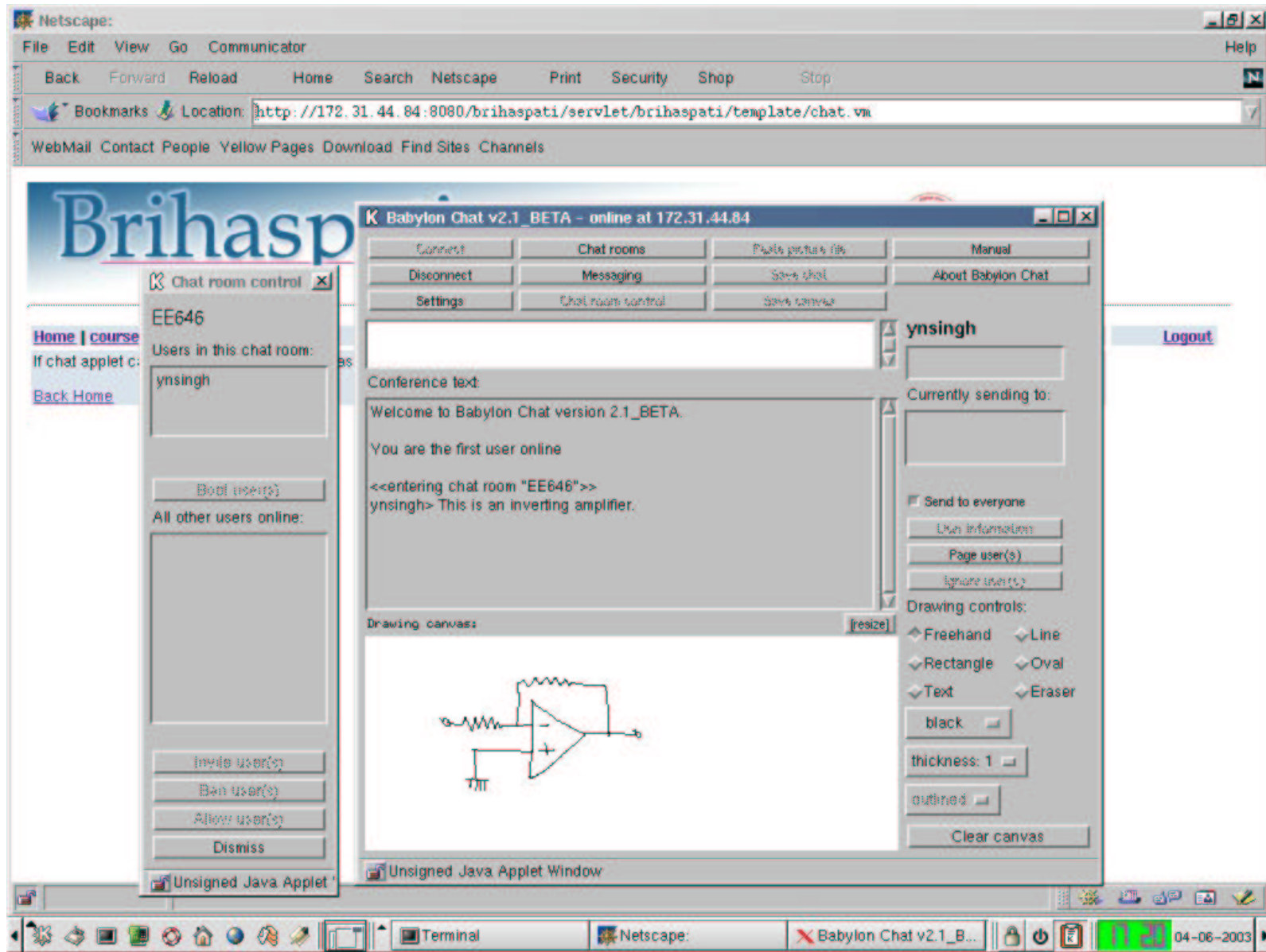
## lect notes

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## Synchronous learning tool

### Currently used tools

- RealServer alongwith Screenwatch
- can work on multicast network
- vic, rat, wbd for interaction over multicast network

### Dependency on multicast network

- can be resolved by overlay network
- in near future, all the service provider will provide multicasting

All the above not suited for heterogenous networks

The solution

- Receiver driven layered multicast
- OpenMash implements this concept
- Code built in Otcl and Tclcl- not well documented
- Code is in development

In IITK- currently study is underway to debug, modify and use OpenMash for synchronous lecture delivery.

### Important features

- live delivery
- interaction feasibility
- recording
- archival
- playback at later instant
- should work on heterogenous network
- should work on dynamic varying bandwidth conditions

## conclusion

Any such effort needs

- Cooperation of the stakeholders (developers; users- teachers, students, administrators)
- design, implementation and use should evolve with time as per need of users.
- community source development process- seems to be best suited for any such effort.